



ABOVE: The Red Data Book species, *Restio micans* and *Restio quinquefarius* grow on margins of seasonal wetland on Kenilworth Racecourse. BELOW: *Diastella proteoides*, another Red Data species that grows on Kenilworth Racecourse. Photos: Ross Turner.

The Golden Oval

The Kenilworth Atlas: a brief summary of pre- and post-burn field study at the Kenilworth Racecourse, Cape Town



by **Ross Turner**, Field Botanist

It's hard to know where to begin, charged with writing an article on Kenilworth Racecourse. This landlocked island-remnant of Acid Sand Plain Fynbos and Seasonal Wetland has become a second home over the past eventful year, although for one more familiar with Mountain Fynbos, the initial prospect of surveying our most valuable lowland vegetation remnant was daunting. *Tabula rasa* was the best way to summarize my cognitive state upon first visit to the site, but by now, as hopefully this article will communicate, the objective slate is anything but clean.

Kenilworth Racecourse is home to at least 275 indigenous plant species. This is a staggering statistic consider-

ing the relatively puny, 45 ha area. No other single urban, natural vegetation remnant on our planet comes close in terms of sheer plant species numbers, relative to physical area.

If alien plants are included in this count, the tally amounts to an even more gob-smacking total of at least 336 species. That's right, there are at least sixty-one aliens lurking (in some instances, plotting take-overs) at Kenilworth. Gone are all notions of a 'monotypic' alien invasion! The process at Kenilworth is a complex succession involving members of mostly the Poaceae, Cyperaceae, Fabaceae and Myrtaceae families supplemented by a host of flourishing garden escapees such as *Leucosium vernum* and *Vinca major*. Driving this invasion is the eutrophication and therefore nutrient enrichment of groundwater on the site, natural drainage lines and seepage areas in some cases having been radically transformed. As a result, on-going alien control at Kenilworth will be an expensive and labour-intensive exercise.

However, having been given a chance

to rejuvenate through fire, it is the indigenous component of Kenilworth's vegetation that turns up trumps. There are several Red Data Book species at Kenilworth, such as *Diastella proteoides*, *Erica margaritacea*, *Leucadendron levisanus*, *Moraea elsiae* and *Restio micans*, but perhaps the real wonder has been the observation of many 'common' or 'widespread' species, not recorded on our checklists. This is in part due to the fact that many herbarium specimens from Kenilworth Racecourse sit in the Bolus Herbarium, which has not been electronically data-based. More succinctly put, then, as in our time, common or more-widespread species were often not collected. Here I think of *Cliffortia subsetacea*, *Gladiolus undulatus*, *Moraea miniata*, *Moraea tripetala*, *Phylica imberbis*, *Elegia filacea*, *Elytropappus rhinocerotis* and *Willdenowia sulcata*, amongst others.

A geological island

Kenilworth's flora also hints at another startling fact. As well as being an island of indigenous vegetation, Kenilworth

Racecourse is also a geological island, being grouped with the Cape Peninsula Pluton (N-Cc) of the Cape Granite Suite. These granitic 'islands' occur in only a few lowland sites adjacent to the Cape Peninsula mountain chain. Finely weathered, loamy, granitic substrate is clearly visible on the western banks of Kenilworth's Main Dam, as well as along the severely degraded eastern boundary of the Racecourse, where excavations were made to provide loam for the building of the M5 Freeway. At Kenilworth this substrate is further overlain by quartzitic sand of the Quaternary Group. It is no wonder that the Racecourse grounds are prone to waterlogging during winter, given the impeded natural drainage of the site. One wonders whether it would have been chosen originally, had this fact been realized. Rest assured, however, that without the Kenilworth Racecourse, we would have nothing to discuss but aging, *post mortem* herbarium specimens and we would all be the poorer.

It is therefore a combination of locality, geology and hydrology that have

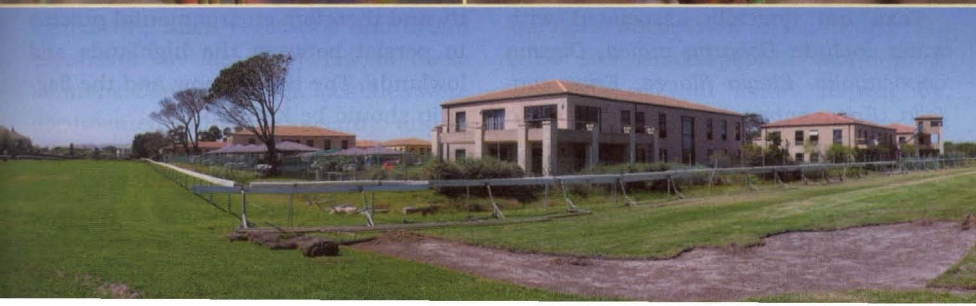


FAR LEFT: *Restio micans*, female.

LEFT: *Restio quinquefarius*.

BELOW LEFT: The former habitat of the rare and endemic *Erica capitata* and *E. turgida* that no longer occur on Kenilworth Racecourse.

BELOW: *Leucadendron levisanus*.
Photos: Ross Turner.



An appeal to the Gold Circle Board of Directors: "In your hands rests the destiny of Kenilworth, a unique, biodiverse habitat and very possibly the last viable natural vegetation remnant remaining within our rapidly growing city. A relatively small sacrifice on your behalf would provide a truly great, long-lasting service for conservation!"



TOP RIGHT: *Oxalis pes-caprae* and bee pollinator.

BELOW: The occurrence of *Erica corifolia* on Kenilworth Racecourse suggests it is a corridor through which plant species must have migrated during preceding millennia.

BOTTOM: Very rare...

Photos: Ross Turner.



made Kenilworth Racecourse unique floristically and perhaps a toss of a coin that has allowed it to survive until the present.

An urban, ecological flagship

The resulting, fuller ecological picture we now have shows Kenilworth's flora as being remarkably representative of Cape Peninsula Mountain Fynbos, as well as Acid Sandplain Fynbos. Even renosterveld components are represented by taxa such as *Elytropappus rhinocerotis* and *Moraea miniata*. Kenilworth is undoubtedly the last locality of its kind adjacent to the Cape Peninsula and a remnant link between the Peninsula, Cape Flats and the mountain ranges beyond.

This floral commonality is especially evident in wetland plant communities. Moisture-loving taxa such as *Berzelia abrotanoides*, *Chondropetalum nudum*, *Chondropetalum rectum*, *Chondropetalum tectorum*, *Cliffortia strobilifera*, *Cliffortia subsetacea*, *Ischyrolepis paludosa*, *Psoralea laxa*, *Psoralea pinnata*, *Restio bifurcus*, *Restio quinquefarius* and *Serruria glomerata* are good examples. Elements of this south-western wetland community are present in wetland habitats as far south as Elim and Ratelrivier on the southern Agulhas Plain.

Taxa not typically associated with water include *Bobartia indica*, *Diosma oppositifolia*, *Elegia filacea*, *Erica corifolia*, *Erica imbricata*, *Erica mammosa* (re-sprouter, pink flowers), *Erica muscosa*, *Erica tristis*, *Indigofera capillaris*, *Ixia dubia*, *Leucadendron salignum*,

Podalyria sericea, *Rhus tomentosa*, *Staberoha distachyos*, *Thamnochortus fruticosus* and *Willdenowia sulcata*. Many of these do tolerate a wide range of habitats and soil types but their occurrence in adjacent but markedly different habitats suggests a corridor through which plant species have migrated during preceding millennia.

Most of this corridor has been lost to urban sprawl and invasive alien vegetation, especially over the past 100 years and, as a result, an environmental and genetic bottleneck has been created. One is often left with the impression that although botanists, conservators and ecologists deal daily with issues of evolutionary process, it is forgotten that evolution extends far into a future that we are ill-equipped to comprehend. Just how many intricate environmental interactions have we terminated through our insidious and often rampant desire for progress or compromise? Will the Cape Peninsula itself become an evolutionary dead-end as a result of our activities? Have we altered the evolutionary course of the Cape Floral Kingdom? Regarding the last query, I think we have, but there is still time to rescue and restore the few, precious lowland remnants in our midst and perhaps, by doing so, allow at least a certain amount of connectivity and therefore environmental process to persist between the highlands and lowlands. The time is now and the flagship should be Kenilworth.

The state of some rare endemics

Several narrowly endemic taxa, con-

fined to wetlands on the south-western Cape's coastal flats and forelands, are historically represented at Kenilworth Racecourse. *Cliffortia ericifolia*, *Erica capitata*, *Erica margaritacea*, *Erica turgida*, *Hessea cinnamomea*, *Restio micans*, *Ischyrolepis duthieae* and *Moraea elsiae* are examples of now rare, extremely localized plant species. A brief summary provides an indication as to the general state of their lowland habitats:

Erica margaritacea flourishes at Kenilworth Racecourse, especially in the western portion, despite having been exterminated in all of its other historical localities. No seedling regeneration has been noted so far in the burnt portion of the Racecourse.

Restio micans survives outside of the racetrack in one localized stand of approximately 200 plants. Only a handful of scattered individuals occur within the south-eastern portion of the racetrack.

Taxa apparently teetering on the brink of extinction at Kenilworth include ***Cliffortia ericifolia*** and ***Moraea elsiae***. Approximately twenty individuals of the former species eke out an existence amidst a dense thicket of Port Jackson (*Acacia saligna*), and only two plants of *Moraea elsiae* were recorded during survey.

I strongly suspect that ***Ischyrolepis duthieae*** and ***Ischyrolepis papillosa*** no longer occur at Kenilworth, the former having been exterminated by dense *Acacia saligna* infestation and an office-complex development.

Ominously, ***Hessea cinnamomea*** was not recorded during its flowering period of May and June, after the controlled burn of 29 March 2005 (See *Veld & Flora* March 2006, page 40). Dee Snijman has only seen this exceedingly rare species in one locality in the Cape of Good Hope Nature Reserve after a fire.

Erica turgida and ***Erica capitata*** were exterminated at the Racecourse a little over a decade ago. Thankfully *Erica capitata* occurs in several well-established sub-populations in the mountains of the southern Cape Peninsula and has recently been recorded at Groot Hagelkraal and near Elim. Much of its former lowland habitat has been lost to agriculture, alien vegetation and urban expansion. In fact, very few of these montane Cape Peninsula localities were documented until very recently, and in Vol. IV of *Flora Capensis*, Bolus cites this species' habitat as 'sandy downs near Cape Town and elsewhere on the

Cape Peninsula; generally below 100 ft.' In addition, it is now known that many extant sub-populations of the species are associated with a seasonal drainage line, a seasonally wet area, or occur at the head of mountain streams. This undoubtedly explains the historical occurrence at Kenilworth and gives us hope that seeds may still occur in the soil elsewhere on site. The natural history of *Erica turgida* is less encouraging, the species having been exterminated in all of its known localities on the Cape Flats and Cape Peninsula. Cultivated specimens of this taxon were re-introduced to Kenilworth during winter 2005 but by early 2006, near 100% mortality had been observed.

And *Oxalis natans* was nowhere to be found...

Encouraging news

But, despite the cogent, imminent and suspected loss of several species from Kenilworth, ecological process manages to persist at the site. The occurrence of 'recruitment' amongst several taxa most commonly encountered as re-sprouters in the field, is an example of this. These re-sprouting plants have the ability, in most instances, to coppice vigorously from underground lignotubers after being burnt. By definition, all re-sprouting plants must be re-seeders too, for at some point in their history, individuals must have regenerated from seed. Indeed, most re-sprouters appear to produce viable seed, although not in the same quantity as re-seeding plants. At Kenilworth this recruitment is stunningly visible in taxa such as *Agathosma imbricata*, *Aspalathus angustifolia* and *Berzelia abrotanoides*, seedlings of these species co-existing with re-sprouting plants that survived the fire. In some instances, hundreds of seedlings were recorded within only a few square metres! Such seedling densities are in fact comparable to typically re-seeding species encountered at Kenilworth, such as *Diastella proteoides*, *Leucadendron levisanus* and *Serruria glomerata*, for which prolific, and often dense, post-fire seedling regeneration has also been recorded during survey.

It has also been fascinating to witness the floral succession at Kenilworth. It's a bit like Shakespeare's 'world-stage' with the relevant actors moving by, each responding to the environment of the stage but marching to their own beat. However, I don't buy William's sense of the mundane for one second!



TOP LEFT: *Geissorhiza imbricata* subsp. *imbricata*.

TOP RIGHT: *Geissorhiza hispidula*.

ABOVE: *Lachenalia reflexa*.



ABOVE: *Onixotis punctata* with bee pollinator

BELOW: *Moraea lugubris*.





TOP: *Pseudoselago spuria* with *Watsonia meriana* in the background. On what future for this priceless remnant should we place our wagers?

MIDDLE: *Romulea rosea*.

BOTTOM: *Lampranthus reptans*.

Photos: Ross Turner.



By visiting the site at two to three week intervals, this study has been able to witness the first-flowering individuals of many species, see them at their peak, watch their flowers wither, produce capsules and finally, disperse seed. In particular the parade of geophytic plants at Kenilworth deserves mention.

The parade of geophytic plants

On the 29 September 2005, Kenilworth Racecourse could have been mistaken for Nieuwoudtville during spring, so spectacular was the floral display! *Baeometra uniflora*, *Geissorhiza aspera* and *Sparaxis bulbifera* formed the dominant geophytic canvas, while a swathe of *Watsonia meriana*, purplish-orange as well as white flowered variants, provided a fiery display in the seasonal wetland. *Albuca juncifolia*, *Disa bracteata*, clumped stands of *Drosera trinervia* in full bloom, *Geissorhiza hispidula*, *Geissorhiza imbricata*, *Moraea collina*, *Moraea flaccida*, *Moraea lugubris*, *Moraea tripetala*, *Onixotis punctata*, *Pterygodium catholicum*, both white and pure yellow variants of *Romulea flava*, *Romulea rosea*, *Satyrium odorum*, *Spiloxene aquatica* in seasonally inundated depressions, *Spiloxene capensis*, *Trachyandra ciliata*, *Trachyandra revoluta*, *Wachendorfia paniculata* and *Wahlenbergia capensis*, amongst others, abounded!

As these faded, they were replaced by the next floral cohort consisting of *Hesperanthera radiata*, *Ixia dubia*, *Ixia paniculata*, *Moraea elisiae*, *Moraea lewisiae* and *Moraea ramosissima*.

The latter cohort was, in turn, succeeded in December by *Aristea capitata*, *Bobartia indica*, *Cyanella hyacinthoides*, *Gladiolus undulatus*, *Micranthus alopecuroides*, a late-flowering variant of *Romulea rosea* and *Wachendorfia brachyandra*.

While the months of September, October and November undoubtedly provided an explosion of colour and discovery, several exciting finds were also made during the exceptionally dry summer months. Clumped stands of *Ornithogalum dregeanum*, a rare member of the Hyacinthaceae occurring from Tulbagh to the Kleinrivier Mountains, were in full bloom during January. Scattered plants of *Drimia filifolia*, another infrequently encountered taxon occurring from Mamre to the Cape Peninsula, were recorded during February and March, as were hundreds of plants of the widespread *Bulbine favosa*.

The real battle for Kenilworth

Early autumn brings the Kenilworth Atlas full-circle and, again, hard reality must be confronted. The real battle for Kenilworth is political and economic in nature and disarmingly, from the environmental standpoint, there is very little to bargain with. On what future, then, should we place our wagers?

The very nature of this article lumps the majority of my share with the small group of dedicated conservators and environmentalists, past and present, amateur and professional, who have expended a considerable amount of time and energy in an effort to conserve the Racecourse's flora and fauna and to ensure its future survival. **We** know of the treasures contained within the Racecourse but now need to impress upon Gold Circle stakeholders their significance, as well as the value and rarity of the greater ecological system that supports them.

Here I must make a direct appeal to the Gold Circle Board of Directors:

In your hands rests the destiny of Kenilworth, a unique,

biodiverse habitat and very possibly the last viable natural vegetation remnant remaining within our rapidly growing city. A relatively small sacrifice on your behalf would provide a truly great, long-lasting service for conservation!

Furthermore, those working within the realm of conservation are not blind to the benefits that judicious business practise can offer. We are all part of the economic engine. But many of us are naïve when it comes to the business world.

Perhaps this stems from the fact that we are driven by the acquisition and sharing of scientific knowledge. We speak of nothing else when placed in a room together! This intellectual capital is not nearly as visible as direct monetary wealth and it takes much longer for the benefits thereof to be realized. As the business world knows, critical, analytical thought is crucial for success.

Despite the fact that botanical research involves objective observation, it is impossible to ignore one's emotional responses to these stimuli. If a large multi-national corporation were to possess branches in ten different nations and then witness the demise of eight or nine of those functional branches, would not the response be one of concern, shock or anger? In other words, we deal with different, although mutual, aspects of the world and both assign extreme importance to them. What's more, we both use programmes such as Microsoft Excel as the basis for data collection and statistical analysis!

Are we out of line to suggest a charity event such as 'The Elsie Esterhuysen Cup', with specific attention paid to Kenilworth's ecology and significant proceeds going towards its conservation? The potential for a marketing-coup exists, although it would have to be remembered that the ultimate goal should not only be an improved media profile and the financial benefits thereof, but also the survival of a unique, endangered ecosystem.

We also need to encourage conservation study groups from schools, universities and the private sector to participate in and to support any such initiatives.

Let's all prove Uncle Bill wrong by not merely being actors, but rather playwrights, and in this way, together, secure a functional, viable future for this glittering gem, this botanical time capsule known as the Kenilworth Racecourse! 🍷

Acknowledgements

In closing, it must be said that the Kenilworth Atlas has benefited greatly from several sources, without which field study would not have been possible, or at least extremely difficult. Firstly I must thank Anthony Hitchcock and Tilla Raimondo, for without their innovation, this study would not have been realized.

I am also indebted to Clive McDowell and Lynette Brown for their comprehensive 1991 study of the Racecourse. This *Conservation Management Plan for the Kenilworth Racecourse fynbos and surrounding area* identified major threats facing the natural vegetation remnants contained within the course and included a list of approximately 220 indigenous plant species.

The staff of the Compton Herbarium, past and present, have also provided invaluable assistance with plant identifications. Humble thanks in particular go to Dee Snijman and John Manning, for their authoritative identifications of geophytic material and *Asteraceae*. Chris Cupido, Hubert Kurtzweil and Pascal Chesselet have provided identifications of *Fabaceae* and *Campanulaceae*, *Orchidaceae* and *Aizoaceae*.

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To Mr Van der Ross, who grew up in a house in the centre of the racetrack, thank you for walking with me on several occasions and for imparting your knowledge, spanning several decades of the site's history.

To the management of the Kenilworth Racecourse, for unrestricted access to the premises, thank you too.

And to Ted Oliver, for much more than the superb camera, without which this study would have been monochrome by comparison, long may you peruse and pursue the Heather!



TOP: *Wahlenbergia capensis*.

ABOVE: *Cyanella hyacinthoides*.

BELOW: The infrequently encountered *Drimia filifolia* (giffbol) flowering on the Racecourse.

BOTTOM: *Sparaxis bulbifera* and *Geissorhiza aspera* on Kenilworth Racecourse in September.

Photos: Ross Turner.

