In quest of biodiversity hotspots

TEXT AND PHOTOS BY ANTJE BURKE

There, finally, after traversing the southern Namib's endless dune field and winding our way along salt pans and sandy tracks, was the dark promontory, raising high above the stormy Atlantic Ocean.

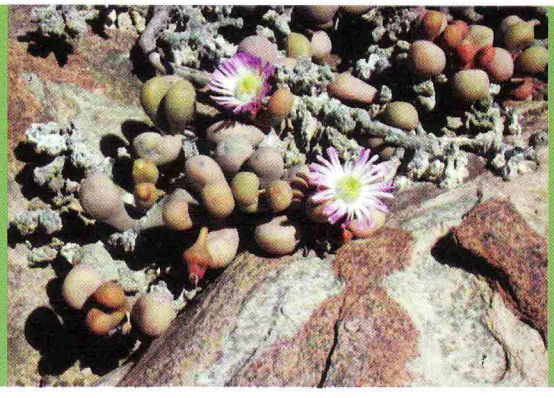
We had set out from Lüderitz a few days ago. The seemingly unremarkable outcrop – one of very few along more than 400 kilometres of sandy beaches – harbours a population of, as far as we know, one of Namibia's most restricted plants, *Jensenobotrya lossowiana*. While its scientific name flows easily over the tongue, the bead-like succulent is a remarkable botanical oddity, making it well worth our while to count how many plants were still thriving on this outcrop and assess whether this population could be considered healthy and stable.

It is quite remarkable that these plants have evolved at this isolated spot, far away from other succulents of this nature. As a result they show unusual adaptations in their seed dispersal, possibly pollination, and their metabolism, as they seem oblivious to the salty spray from the sea. These aspects are yet to be studied in detail, and I wouldn't be at all surprised if a range of unusual features were to be discovered.

With weary legs, bowed under the weight of plant presses, cameras and other essential research gear on our backs, we eventually reach the top of the mountain. Although only some 500 metres above our starting point on this cool morning, it was a long way and we were taken by surprise by an east wind. The temperature was soon a soaring 45 degrees, sucking up every drop of moisture from our pores, bring us close to heat exhaustion. The relentless Namib Desert had once again taught us a lesson and renewed our respect for the creatures that manage to survive in this harsh environment.

Mountaintops in Namibia provide a home for a remarkable diversity of plants. Many form isolated outposts, a long way from where the plants grow more abundantly, while others have evolved right on the spot and occur nowhere else. Yet others have made their way up from the surrounding lowlands, but they look slightly different, are lower and have smaller leaves and other characteristics that differ from those of their lowland counterparts.

Keeping newspapers and pieces of cardboard from scattering across the desert plains when trying to press precious plant specimens – a standard practice of plant collecting – is no small feat when a steady 50-knot wind picks up without fail every day. An added complication is trying to avoid mould developing on



One of the strangest looking vygies in Namibia is the bead-like Jensenobotrya lossowiana, *a species that is endemic to a few coastal outcrops north of Lüderitz.*

The last population of this plant had to make room for development in the Cape Town area, exactly what sound biodiversity information is aimed at preventing.

the pressed succulents when fog sustains ambient moisture at nearly 100 per cent for days on end. Once it has lifted, cool drizzle keeps up the good work.

Welcome to a plant-collecting expedition in the Sperrgebiet, Namibia's sliver of winter-rain receiving Succulent Karoo!

Yet every such trip, whatever the hardships, has contributed to finding new plants and establishing new records for Namibia. The trips are invaluable when attempting to sort out the taxonomic confusion that makes identifying succulents in this area such a daunting task. My colleagues at the National Botanical Research Institute have laboured relentlessly year after year, and today the Sperrgebiet, despite the restrictions on access, can boast a botanical wealth that is reasonably well known, certainly in comparison to most other parts of Namibia.

While all of this has an air of intrepid exploration, which makes our work highly exciting and stimulating, it will ultimately contribute to a very good cause. Long weeks of arduous plant identification, curating specimens, sorting out and entering data into databases, and mapping and writing up research results follow each field trip to make this information accessible. Where lots of endemic species, that is plant and animals restricted to a particular area, occur together, we assign centres of endemism. Where a remarkable diversity of plants and animals is mapped, we delineate them as centres of species richness or diversity. Combined they provide us with biodiversity hotspots.

From a botanical viewpoint, the hotspots range from confined mountain habitat, such as the Auas Mountains outside Windhoek, the Waterberg Plateau, Otavi Mountains, Brandberg and Naukluft, to large swathes of land such as the Kavango woodlands and the oshanas in the north, the entire Sperrgebiet and adjoining Huib Hoch plateau, and the whole of the Kaokoveld and northern Namib. Some of these are preliminary assessments based on the expert's intuition. Much more work is required to gather data to back this up, thereby making sure that planning for the fledgling Sperrgebiet National Park is based on sound biodiversity knowledge. This is necessary to prevent new developments from wiping out rare plants and animals and to ensure that precious natural resources are used wisely and not exploited beyond repair.

It is highly commendable that principles prescribing sustainable development and caring for the environment are entrenched in the Namibian constitution, and that these are upheld in long-term development plans. Namibia subscribes to international conventions, including biodiversity, combating desertification and climate change. The relevant ministries support international initiatives such as the identification of Important Plant Areas (IPAs), transboundary red-list assessments, and protocols for trading with endangered wildlife and plants (CITES).

Hence there is a need for sound biodiversity information that requires assessing what grows and lives where, monitoring change over time and developing appropriate management interventions that enable a timely response to any potential threats. Ideally this response should come from people relying on these natural resources. Here Namibia leads the field, putting out information on the successful management of community-based natural resources. United in conservancies, like-minded communities and farmers have taken control of managing their natural resources, basing their management interventions on biodiversity information, gathered partly by themselves, but also relying on expert institutions to provide the necessary back-up.

There is so much more to be discovered, and so much more to be done. Namibia needs many more young, dedicated biodiversity scientists who are prepared to face the elements, working through (sometimes tedious) lists of inventories and collections and never giving up until they reach the top!

As a melting pot of different flora from tropical Angola, savanna areas and the Namib Desert, the Baynes Mountains in north-western Namibia harbour a remarkable plant diversity.

The Erongo Mountains in central Namibia are rich in diversity and endemic plant and animal species.