

Counting Namibia's living diamonds

TEXT, PHOTOS AND ILLUSTRATIONS BY ANTJE BURKE

The northern portion of the Succulent Karoo – the prime hotspot of plant diversity in Southern Africa – extends into southern Namibia. Locked up in the enigmatic Sperrgebiet or Diamond Area 1, a remarkable diversity of living diamonds rivals the riches excavated by the diamond industry from ancient beaches beneath the sand and sea.

Patches of yellow, pink and purple-flowered succulents, their leaves bursting with water, carpets of yellow and white daisies and slopes covered in delicate, violet-flowered herbs – all this set against a backdrop of dramatic mountain scenery and vast open plains as far as the eye can reach. We are in the Sperrgebiet after an extremely good rainy season, and my colleagues from Namibia's National Botanical Research Institute and myself have the daunting but exciting task of documenting this remarkable diversity.

"Have we packed enough plant presses, cardboard and newspapers to collect all these plants?" my colleague Coleen Mannheimer asks in despair when we meet at the appointed place to set off into the Sperrgebiet. Escorted by Chief Warden of the Sperrgebiet, Trygve Cooper, we enter from the north at Rotkop Gate, the main entrance on the private road that links Lüderitz with Oranjemund and is the primary traffic conduit through the area. We are joined by Fred and Sarah Gess, two dedicated and well-known insect specialists from South Africa. They are interested in a group of wasps that seem to be largely restricted to the Succulent Karoo, possibly linked to the evolution of the mesembs.

'Mesembs' are members of the family Mesembryanthemaceae or Aizoaceae, commonly known also as vygies or midday flowers. There is truth in their common name, because many start opening their flowers only when it warms up during the day. They are usually in full bloom in the afternoon, before the chill of the evening or damp fog makes them close their precious blooms. Midday was thus prime time for our insect specialists, who set out every day with sweeping and butterfly nets, cameras and collecting jars to document this understudied sector of biodiversity.

The mesembs are the most diverse and spectacular group of plants in the Sperrgebiet. Many are restricted

to this winter-rainfall area and found nowhere else on earth. "How will we ever be able to count them properly?" asks Sonja Loots, the Botanical Institute's Red Data expert, while we scamper across the plains trying to count one of the many species concerned. The fact that most of *Psammophora nissenii* is hidden underground to escape the onslaught of sandstorms and desiccating winds, does not make our task any easier. Having been sand-blasted, scorched by the sun and dried out by bergwinds ourselves on many occasions, we do have sympathy for this little plant, of which only the leaf tips stick out, and we marvel at its magnificent adaptation. When we are forced to kneel down to count properly, we discover that it has evolved yet another ingenious way to survive in the harsh desert environment. Its leaves are covered in sand. This may not sound unusual, since the ever-present winds blowing across these open plains always carry sand, depositing it whenever an obstacle comes in the way.

However, the sand sticks to the surface of the leaves, adhering to a sticky substance the plant has excreted. This is a unique adaptation, known only from a few plants that grow in sand- and wind-swept areas, such as the Sperrgebiet and Namaqualand. These psammophorous (sand-bearing) plants – note the genus name – are particularly plentiful in the Sperrgebiet. Considering the climatic conditions, this is no surprise. Four species of *Psammophora* occur here, two of which, *Psammophora nissenii* and *Psammophora modesta*, are endemic to the Sperrgebiet. Although the more common *Psammophora modesta* could well reach numbers of near ten thousand individual plants, one should never forget that this is the only place on earth where they occur. Apart from *Psammophora*, there are also several lilies and small shrubs that show this remarkable adaptation.

