The discovery of the Kaoko aloe, *Aloe kaokoensis*

A new species from a remote area of the Kaokoveld of Namibia

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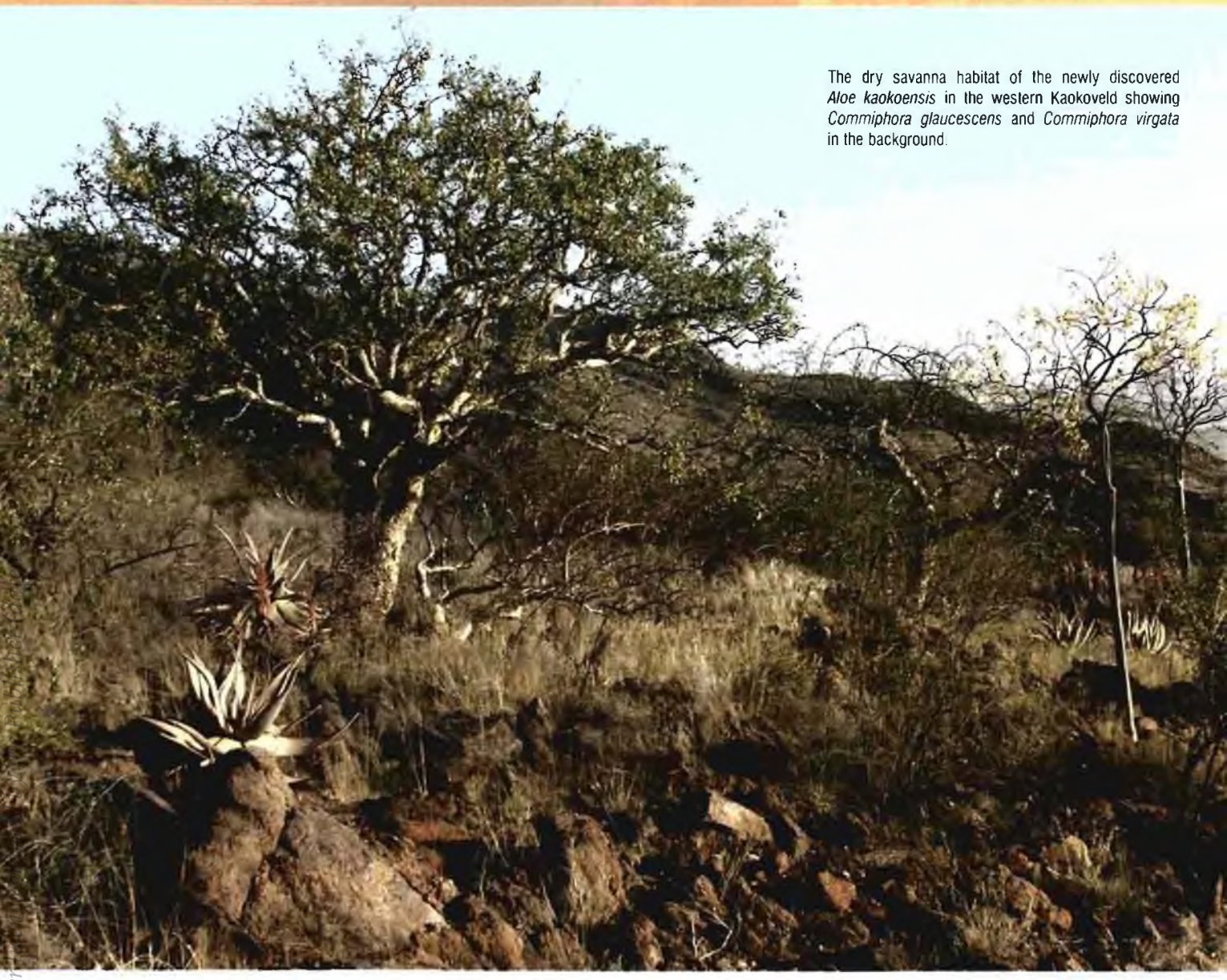


The dry savanna habitat of the newly discovered *Aloe kaokoensis* in the western Kaokoveld showing *Commiphora glaucescens* and *Commiphora virgata* in the background.

In July 2002 we explored two interesting mountain ranges during an expedition to the Kaokoveld of Namibia. One of these, the Baynes Mountains near Omavanda, was featured in the December 2002 issue of *Veld & Flora*. The other was one of the western outliers of the Otjihipa Mountains, near a place called Ezorotuuo. The Kaokoveld is situated in north-western Namibia, a rugged wilderness region bordered by the Namib Desert in the west, the Kunene River in the north, the road between Ruacana and Kamanjab in the east and the Hoanib River in the south.

Our main mission at the time was to try and locate the Kaoko-spursage, *Plectranthus unguentarius*. Although we did not find our *Plectranthus*, we did however, find a new species of aloe. (And we found the Kaoko-spursage at a later stage, in January 2005).

The first expedition to the Otjihipa Mountains

Our party consisted of Ernst, Werner Voigt (curator of the Harold Porter National Botanical Garden), Freddie van Wyk, Anton Cilliers and Ernst's son Henk. We camped at the western foot of the Otjihipa mountain range in a dry riverbed at a place known by

The Kaoko aloe, *Aloe kaokoensis* in flower. The habitat is a rocky outcrop in the remote Otjihipa Mountains of the western Kaokoveld of Namibia.
Watercolour illustration Eric Judd

Aloe kaokoensis

the Himba as Ezorotuuo, which is on the Marienfluss plain and just south of the Kunene River. This region forms part of the Namib Desert vegetation (here well in the tropics) with mopane, *Colophospermum mopane*, being the dominant tree. Other noteworthy trees we saw were *Euclea pseudebenus*, mustard tree *Salvadora persica*, the leadwood *Combretum imberbe*, *Balanites angolensis* subsp. *welwitschii* and *Adenolobus garipensis*.

Although trees are found here, they are mainly confined to dry streambeds and the general landscape is open, with a grass cover after sufficient summer rain. The climate is hot and dry throughout the year. The average annual rainfall in the Kaokoveld is low, varying from less than 50 mm along the coast to about 350 mm in the highlands. Precipitation is erratic and occurs mainly in the form of thundershowers during summer. At Otjihipa the average annual rainfall is between 150 and 200 mm per annum. The coastal mountains are also subject to fog from the Atlantic Ocean, which is a mere 80 km from Otjihipa.

Werner, Anton and I departed early the first morning on a rather strenuous walk up the riverbed. We found several water holes (due to rain earlier in the year) and we headed for the main peak, south of the dry riverbed. On the slopes of the mountain we came across many interesting plants such as the oak-leaved corkwood *Commiphora wildii*, the purple-stem corkwood *C. multijuga* and the large-leaved corkwood *C. anacardiifolia*.

We also came across an interesting large aloe growing on steep slopes, lying on its side. It was in fruit, having large erect panicles and lots of seed. (The seed we collected has been successfully germinated and planted out in the Botanical Society Conservatory at Kirstenbosch.) This aloe had the appearance of *Aloe littoralis* but the whitish-green leaves, smaller teeth and its growth habit was not familiar to us. We photographed it before continuing up the mountain. I also inspected the cliffs for succulent plants and found a small, semi-succulent herb in a deep kloof of a quartz outcrop (later identified as *Rogeria petrophila*). We never reached the peak (it became too late), neither did we see any sign of our *Plectranthus* and came down in darkness using our headlamps. The rest of the party were thoughtfully shining the lights of the vehicles to make it easy for us to find the campsite.

The next day we visited Koos Verwey at Camp Syncro on the Kunene River. I then noticed the twin peaked, high western outlier of Otjihipa Mountain, and told to Koos that this was a must for a future expedition. This would surely be the place of *Plectranthus unguentarius*, and so, two years later, we were back.

Otjihipa twin peaks

During the second expedition in July 2004, after visiting Omavanda, we climbed the western twin peak of the Otjihipa Mountains. Our party consisted of the authors, Werner Voigt, Paul Emms, Jan Burring, Tielman Haumann, Pierre le Roux, Louis Wessels and Miena Daling. This expedition was one of the most successful we experienced, because although we did not find our elusive *Plectranthus unguentarius*, we collected many other interesting plants on the peak, including a strange *Pelargonium* (which had already been discovered earlier by Pieter Winter on an expedition by the Thompsons) and an *Aeollanthus*. The latter plants, both new species, were described by Ernst as *Pelargonium vanderwaltii* and *Aeollanthus haumannii*.

Due to unforeseen circumstances, cuttings that we made of the *Aeollanthus* were lost and the need arose for yet another expedition to the western peak!

Up the Otjihipa Mountains

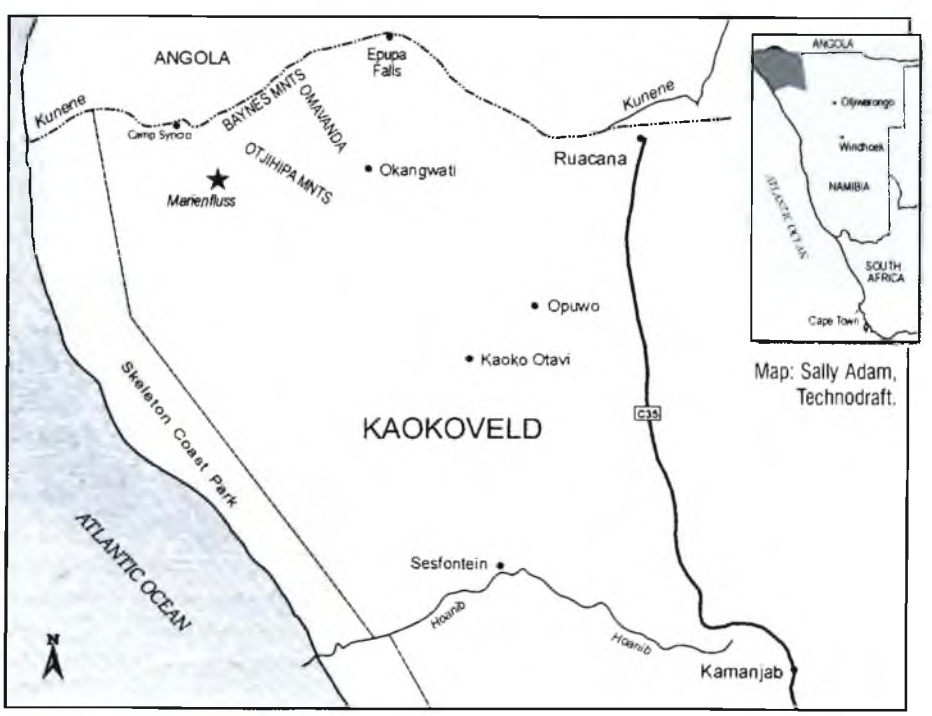
For this, the third expedition, we decided to go during the rainy season of 2005. Shortly after New Year's Day in January 2005, after another successful visit to Omavanda, the authors left Koos Verwey's Camp Syncro early one morning for the twin peaks. The rest of our party, Braam van Wyk (University of Pretoria), Jan Burring and Barbara Curtis (co-author of the *Namibian Tree Atlas*) stayed behind in order to explore the Kunene River and the Marienfluss.

We decided to ascend the mountain via a different, more direct route from the camp as we wanted to climb both peaks this time. It was just below the summit of the steep, westernmost outlier of the Otjihipa Mountain that we unexpectedly came across a colony of strange aloes with decumbent habit. Ernst immediately recognized these as belonging to the same taxon as those he had seen with Werner and Anton at Ezorotuuo in July 2002! This time we took more careful note of the *Aloe*, and decided to come back when it was in flower for a more thorough investigation. We then continued up the higher eastern peak.

The expedition to look for the aloe

Soon afterwards, another explorer, Dr Erik Holm (former Professor of Entomology at the University of Pretoria), visited the mountain, his visit coinciding with our aloe's flowering time and he was able to confirm that the plants were indeed in flower. We immediately arranged yet another expedition to the twin peaks!

This time we organized our expedition



(the fourth) through Braam van Wyk, with sponsorship from the University of Pretoria. We flew in with a small Cessna aeroplane in April 2005, the party consisting of the authors, Hannelie (Wessel's wife) and Kobus van Zyl also from Windhoek. We departed from Windhoek, flew into the Marienfluss and landed on a dune. The rains that year had been plentiful, and the dunes were covered with grass and the Marienfluss plains were alive with gemsbok and springbok. Our mission was to find the plant in flower for a formal description, so we started up the mountain - with Koos Verwey from Camp Syncro at Otjinhungwa helping out with logistics and assistance. The ascent up the lower, steep, western slope was hot and we had to stop and rest a lot. This twin peak of the western extreme of the Otjihipa Mountains is about 1800 to 1900 m high. The formation is granite and the vegetation is mopane and *Commiphora* savanna.

The progress at first was slow as we did it in the heat, carrying with us our camping gear and enough food and water. At the top of the first neck of the range we were met by our new aloe in full flower, complete with attendant dusky sunbird pollinators! We were very excited as it is so costly to get this far, and to be rewarded at the end with our plants in full flower was very special. We again noticed the decumbent growth so characteristic of the species, the whitish-green leaves and its leaf margin of small brownish teeth. We had lots of time to take notes, specimens and photographs. The habitat consisted of mopane, yellow pomegranate (*Rhigozum obovatum*), *Ceraria longipedunculata*, *Euphorbia guerichiana*, *Boschia tomentosa*, *Commiphora virgata*, *C. multijuga*, *C. wildii* and *C. glaucescens*. The aloe was locally abundant, growing in varied habitat ranging from very rocky to even terrain.

We now know that *Aloe kaokoensis* is not endemic to the western Otjihipa Mountains, as Wessel subsequently made several collections on the western margin of the Kaokoveld, even on relatively flat terrain. Plants were seen and collected by him to the south and west of the Otjihipa Mountains and even as far north as the Iona National Park in south-western Angola. In Namibia it is known from just east of the Marienfluss from Ezorotuuo to the lower slopes of Otjihipa Twin Peaks in the north, the Hartmann Valley and the rocky area along the Engo River. The plants occur on granite rock outcrops and mountain slopes on eastern, northern and western aspects at an altitude of 800 to 1700 m. At the type locality it grows firmly wedged in crevices. Associated succulent plants include *Sarcostemma viminale*, *Kalanchoe lanceolata* and *Ceraria carrisoana*. We collected enough material and camped at a site close to a colony of the Kaoko klipblom (see *Veld & Flora* December 2006).

Aloe kaokoensis

Back at Kirstenbosch the live, fresh material was given to Lisa Strachan to illustrate and the plant was written up and submitted to *Bothalia* magazine and published in 2006.

Aloe kaokoensis showing details of the flowers and juvenile leaves. Illustration: Lisa Strachan.

*Aloe kaokoensis** differs from the widespread Windhoek aloe, *Aloe littoralis* in many ways, most notably in its decumbent or leaning growth. *Aloe littoralis* is erect, and its flowers are usually smaller and not orange-red as in *A. kaokoensis*, but dull rose-red to bright red. *Aloe littoralis* is widespread in Namibia, occurring in a range of habitats from rocky hillsides to sandy flats.

*If you would like a more detailed description of *Aloe kaokoensis*, please email the editor at voget@kingsley.co.za or see the article in *Bothalia* vol. 36,1 (May 2006).

Acknowledgements

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What does that mean?

panicle A branched cluster of flowers in which the branches are **racemes.**

raceme A flower cluster with the separate flowers attached by short equal stalks at equal distances along a central stem.

kloof A deep ravine or steep-sided valley.

decumbent Stems lying flat on the ground with the tips growing upwards.

LEFT: The Kaoko aloe, *Aloe kaokoensis*.