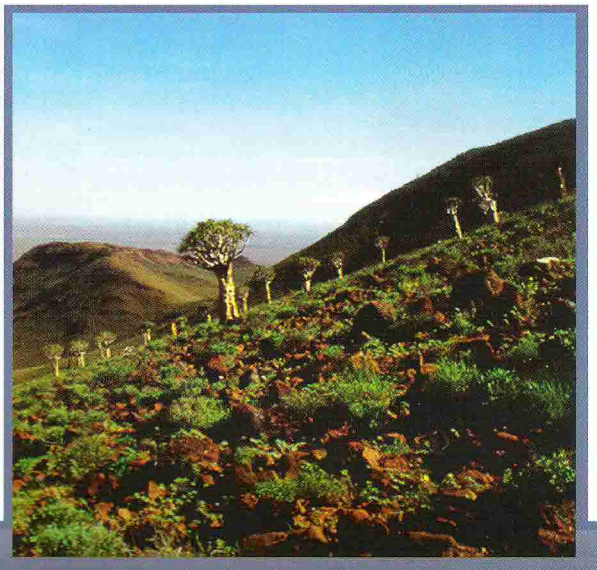
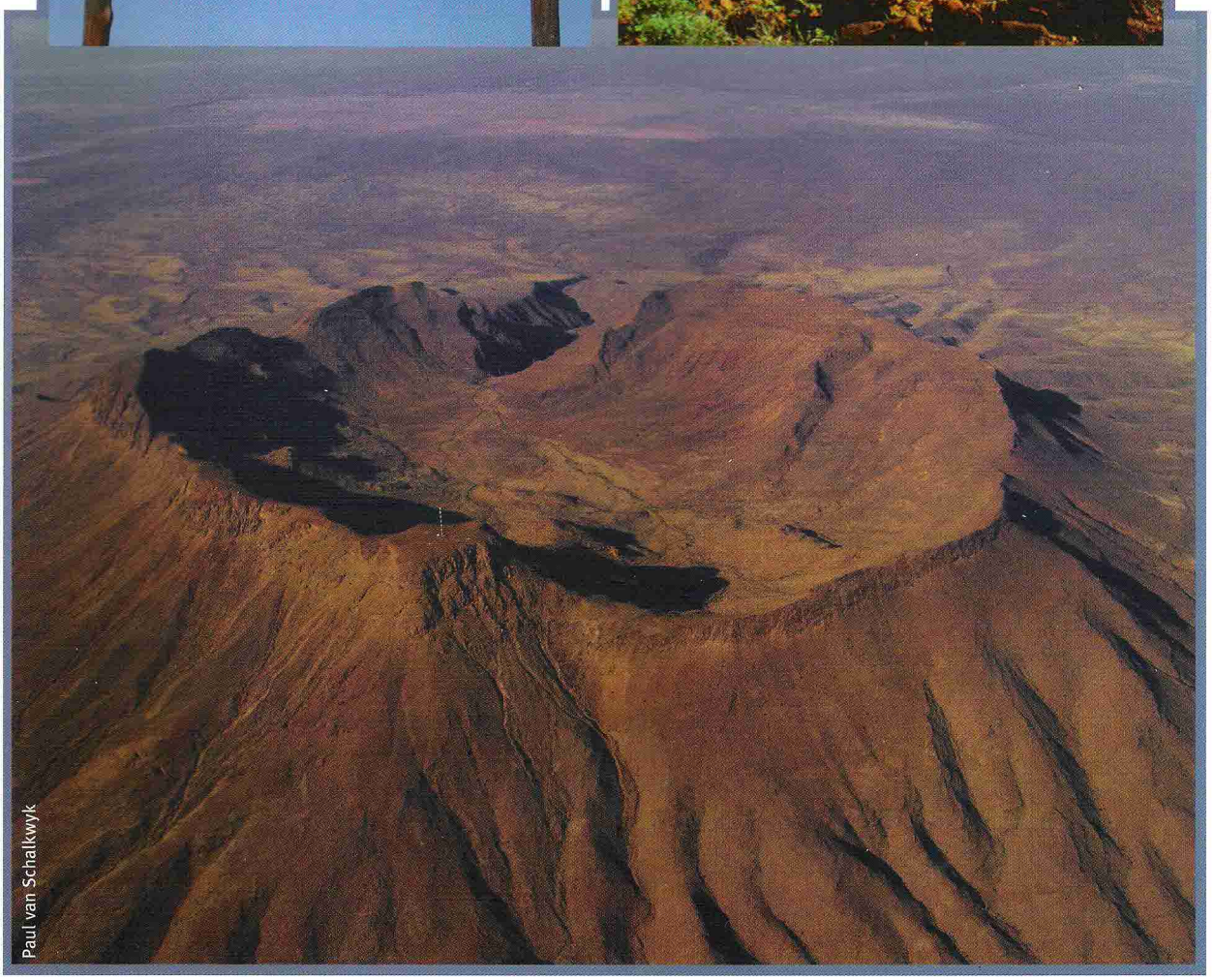
A puzzling volcano called *Brukkaros*

TEXT AND PHOTOS BY ANTJE BURKE





Paul van Schalkwyk

■ A prominent landmark in the heart of Namibia's southern region, the Brukkaros Mountain, can hardly be missed by people travelling between Windhoek and Keetmanshoop. Rising majestically above the surroundings, this mountain is a conspicuous feature in the vast, open plains of Namaland.

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There is no other mountain in Namibia that suggests volcanic origin as plainly as Brukkaros. Steep slopes form a typical crater, rising at places 500 m above the surrounding plains. The central part of the mountain is bowl-shaped, with one exit only, to the south, where occasional rains form a steep river, cascading over boulders and rocks and eventually draining into the network of pans and rivulets that feed the Fish River.

Yet this textbook volcano has puzzled geologists for a long time, for one simple reason: no volcanic rocks have ever been found on the mountain or in its immediate surroundings. This mystery was resolved only recently. The mountain is now – in simple terms – considered a volcano that never erupted because it became stuck in the earth's crust. Although magma (melted rock) never appeared at the surface, the mountain was created by magma pushing up the earth's crust from below. An explosion at the surface associated with the release of steam and water from the broiling magma inside the earth's mantle created the initial crater. Rocks associated with this explosion, such as breccia, are abundant at the centre of the mountain. All this happened some 80 million years ago and a subsequent collapse of the central part of the mountain, the formation of a lake and many, many years of erosion created the 'pseudo-volcano' we see today.

In addition to geologists, the mountain has attracted many scientists over the past decades. The most adventurous for its day was an expedition organised jointly by the National Geographic Society and the Smithsonian Institute in the 1930s to erect a solar radiation observatory. Under much hardship, scientists were based near the top of the crater for three years in succession, in a small corrugated iron hut they called home. The hut is still there. Indeed, the only access track to the crater was created in those days.

Isolated for some 100 km from similar mountain habitat in the surroundings, a mountain habitat of this size raises expectations of interesting plant and animal life, perhaps even restricted to this mountain. The Brandberg to the north, for example, has several species that occur only on its slopes, but then it is considerably larger. When the weather bureau reported unusually high rains in the south following several successive dry years, we decided that Brukkaros deserved a visit. We set out in late February 2000 to find out

whether or not we could justifiably call the Brukkaros Mountain an isolated outpost of biological diversity.

What did we expect to discover? Our main objective was to catalogue the plant diversity of the mountain and its relationship to the surrounding plains. This research formed part of a larger project investigating the role inselbergs (isolated mountains) could play as sanctuaries of plants of conservation importance. These inselbergs could either be sources of plants for re-colonising degraded lands in the surrounding, or provide habitat for species threatened elsewhere.

Brukkaros Mountain sits in the heart of Namibia's Nama Karoo, which typically receives summer rainfall in the region of 100 to 150 mm. However, rains are patchy and variable. It is shrub country with a sparse cover of the low driedoring (*Rhigozum trichotomum*) and somewhat taller trumpet thorn (*Catophractes alexandri*). Denser patches of water thorn (*Acacia nebrownii*) grow in depressions and line drainage areas. While the shrublands don't boast a remarkably high diversity, where habitats are more diverse and different substrates occur, a more varied flora can be expected.

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We were well rewarded for our efforts. The usually dry and desolate mountain, blanketed in dazzling green, was a startling sight. Thousands of colourful butterflies, bees, grasshoppers and other insects filled the air. Almost every boulder was occupied by a lizard or an agama, one more colourful than the other. This was a promising sight. With unrelenting vigour we shouldered plant presses, cameras, soil-sampling kits and lots of water. We ran several transects across the mountain, recording and collecting plant species along the way. We were not disappointed. Although we didn't find any plants that were endemic to the mountain itself, we did find a great number of Namibian endemics such as *Monechma grandiflora*, and compared to the surroundings, a diverse flora, all of which made the expedition worthwhile.

On the mountain itself we recorded 168 plant species, half of which also occurred in the surrounding areas. We counted some 22 endemic plant species, none restricted to the mountain, but to a broader area within Namibia. There are linkages to the flora on the western escarpment, as well as to other mountains further north and south. An interesting and diverse mix of plants typical of Namibia's Nama Karoo, some characteristic of the escarpment and desert to the west, such as the stinkbos (*Boscia foetida*) and common corkwood (*Commiphora pyracanthoides*), as well as likely outposts of southern species, such as Cape climber (*Cissampelos capensis*), and *Tetragonia reduplicata*, grow on the mountain. A healthy stand of quiver trees (*Aloe dichotoma*) is a lovely sight on the western slopes. In terms of the plant life, Brukkaros Mountain is certainly conservation worthy. Many rare species and many valuable fodder and grass species find a sanctuary here. The plains could be re-colonised from the mountain, should degradation and droughts threaten the existence of any of these species, as indicated in some of the surrounding areas.

Also worth mentioning are the magnificent views over the wide, open plains, once the ridge of the crater has been reached. Following the ring of the crater is easy enough, but one should plan a full day for this hike.

The local Nama, who eke out a living with small-stock farming in these drought-stricken shrublands, have realised the mountain's potential for tourism. Following the example of communities at other tourism destinations, they have established a conservancy and established a campsite near the foot of the mountain, which is run by the community at Berseba. Prudent management by the people living in the area is most likely to result in the long-term conservation of this interesting natural asset.