

Plant diversity

The Nyika Plateau has been classified as one of Africa's Centres of Plant Diversity (designated Af65), according to WWF & IUCN (1994). In the early 1990s, a total of 1,200 vascular plant species were recorded on the Plateau (Seyani, Chikuni & Kamundi 1991). Patel, Brummitt, and Overton later provided a preliminary checklist of 1,420 species, based on plant specimens collected there between 1958 and 1999, and deposited in the Kew (K) and Zomba (MAL) herbaria (Overton 2000).

In this book, we list a total of 1,817 recorded species. Including the infra-specific taxa and the exotic or naturalised species, the total is 1,891 taxa, grouped in 684 genera and 160 families (Table 1). This figure is a considerable increase on previous estimates of the Nyika Plateau flora. With further collecting on the northern, eastern and southern extremities of the Malawian part of the Plateau, and the confirmation of many of the excluded taxa listed in here, the total figure could reach 2,000.

The top 21 genera—listed in Table 2—are all associated mainly or entirely with the grasslands; we can infer that these genera have achieved their dominance because the Nyika Plateau is such an extensive grassland island. Table 3 illustrates the high diversity of grassland families on the Nyika Plateau. The families Asteraceae, Orchidaceae, Poaceae, Cyperaceae, and Scrophulariaceae are all predominantly grassland families, while the Fabaceae (Leguminosae: Papilionoidae) and the Rubiaceae are strongly represented in the grasslands. An astonishing 44% of the total species in the top ten genera are members of the Orchidaceae. The asclepiad component of the Apocynaceae is particularly large and is also well represented in the grasslands.

Of the top eleven families, only the Rubiaceae and Euphorbiaceae have appreciable representation in the forest and woodland biomes of the Nyika Plateau.

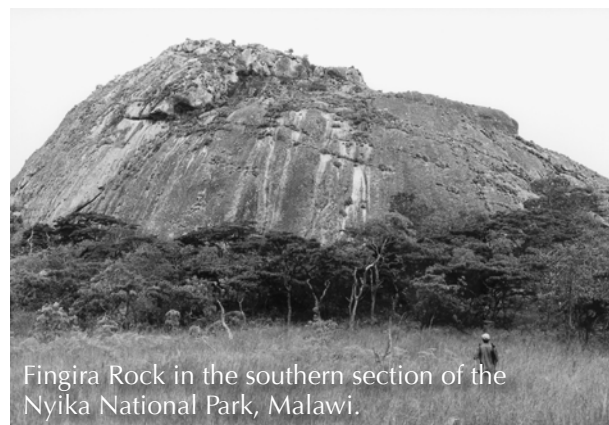
When comparing the dominant plant families of the Nyika Plateau with those of Mt. Mulanje in southern Malawi, the similarity in the dominance and ranking of the main families on the two massifs is striking (Table 3). Although Mt. Mulanje is a rockier mountain, with a far smaller percentage of grassland and a higher proportion of forest, the dominant families remain essentially the same.

Endemism

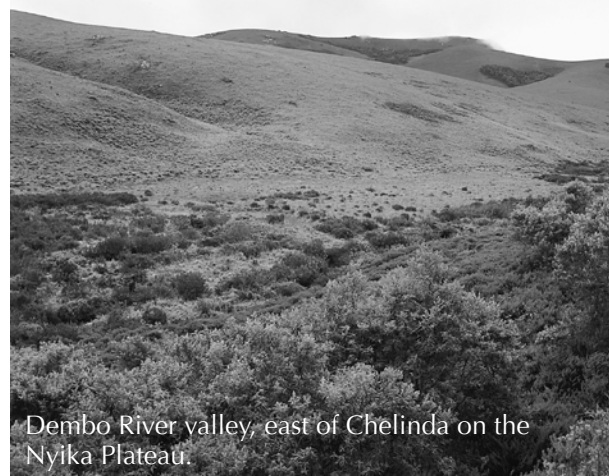
The Simen (Simien) Mountains, Mt. Mulanje, the Chimanimani Mountains, Mt. Cameroon, and the Nyika Plateau are all mountain blocks with a flora that has evolved in isolation, in much the same way as have the plants on oceanic islands. However, they all have in common the remnants of the Afromontane flora, which once covered a much greater proportion of the African continent, and therefore share many common elements such as similar families and genera. The flora of the Afromontane archipelago grasslands is largely characterised by the families listed in Table 3.

This book lists 33 endemics (Table 4) and 13 near-endemics (Table 5) for the Nyika Plateau (Willis, Burrows, Fish, Phiri, Chikuni & Golding 2001). In this context, "strict endemics" refers to plants restricted to the Nyika Plateau and its foothills. "Near-endemics" include plants that occur on the Nyika Plateau, as well as the Viphya Mountains to the south, the Mafinga Mountains, Makutu Mountains, and the Misuku Hills to the north. The terrestrial orchid flora is also rich (Williamson 1977, 1979, 1980, WWF & IUCN 1994). The remaining forest patches are greatly threatened by dry season fires and agricultural encroachment. The level of endemism in montane grasslands is markedly higher than in montane forests, and is most pronounced for herbs and small shrubby plants. About 25 of the Nyika Plateau endemics are associated with the grasslands, with the remainder associated mainly with the grassland-forest ecotone (Table 4). Ten of the 13 near-endemics are also grassland species. Most striking is the fact that none of the Nyika Plateau endemics are trees. Chapman & White (1970) state that Afromontane forests have low numbers of endemics—endemics are concentrated in grasslands at higher altitudes.

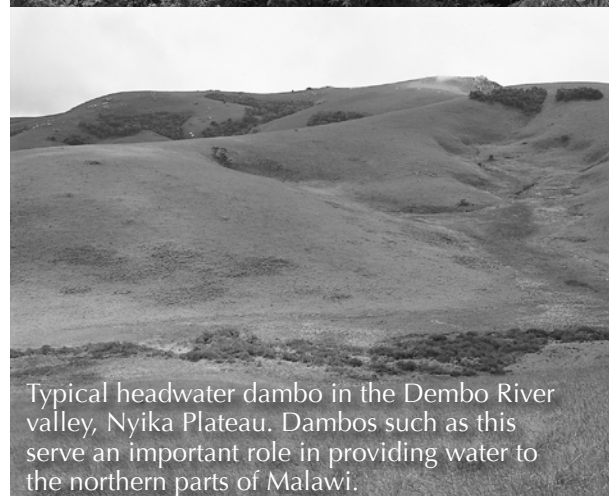
Of the 33 endemics, 28 taxa (>80%) are geophytic or perennial herbs and suffrutices. These life forms are associated with storage organs (rhizomes and tubers), seeding (high volumes and soil-stored seed banks), growth forms (suffrutices), and life strategies (opportunists/pioneers, good competitors, and perennial traits) that are adapted for rapid regeneration after fire disturbances, to which grassland landscapes are especially prone.



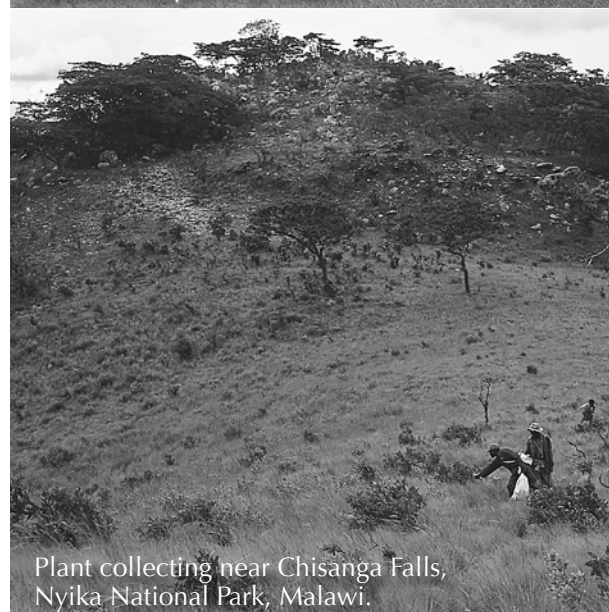
Fingira Rock in the southern section of the Nyika National Park, Malawi.



Dembo River valley, east of Chelinda on the Nyika Plateau.



Typical headwater dambo in the Dembo River valley, Nyika Plateau. Dambos such as this serve an important role in providing water to the northern parts of Malawi.



Plant collecting near Chisanga Falls, Nyika National Park, Malawi.