

Short Communication

Notes on *Adenia pechuelii* in central Namibia

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Adenia pechuelii (Elephants-foot) is one of Namibia's unique desert plants and belong to the Passion fruit (*Passifloraceae*) family. Members of this family, especially the well known Granadilla (*Passiflora edulis*) are of economic value because of their edible fruits while more than 20 other species are cultivated for their ornamental value as vines and unusual showy flowers (Lawerence 1951). They are predominantly a tropical American family with 11 genera and about 600 species. Only a few members occur in other parts of the world e.g. Africa, Asia, Australia, New Zealand and one species in Madagascar (Rendle 1952). In Namibia, there are 6 species of this family belonging to three genera. The genus *Adenia* is one of them and includes 2 species – *Adenia repanda* and *A. pechuelii*. According to Curtis & Mannheimer (2005) *A. pechuelii* occur in scattered localities throughout western Namibia, mostly along the escarpment, as far south as 25°S with a population also known from the Kunene River Valley.

The name – Elephants-foot – is derived from its typical growth form. It has a squat-like trunk which can grow up to 3 m in diameter (Curtis & Mannheimer 2005). Usually it grows as a shrub (mostly <1 m in height) but it can occasionally grow as a dwarf tree up to 2 m in height. The bark is smooth and cream to light grey in colour and the branches are green finger-like with plants in the more arid areas often without leaves (Figure 1).

Figure 1: The typical growth form of *A. pechuelii* with no leaves present (Rob Field).



A. pechuelii is dioecious (i.e. male and female flowers are carried on different plants) with the flowers being greenish in colour and inconspicuous. They flower from February to June and apparently populations do not flower regularly. The fruit is a fairly large (see Figure 2) with a three lobed capsule which becomes bright red in colour when mature. As male plants often flower long before female plants, female flowers are not pollinated and as a result, mature capsules are often found empty. This means that in many populations, recruitment is very poor.



Figure 2: *A. pechuelii* with fruit (Rob Field).



Figure 3: Zebra River Lodge *A. pechuelii* with uncharacteristic big leaves (Rob Field).

On a recent excursion to the farm Zebra River Lodge, a considerable number of *A. pechuelii* were observed with exceptionally large leaves (Figure 3). However according to (Merxmuller 1966) the leaves can be in the range of 5:2cm in size.

The National Botanical Research Institute (NBRI) has embarked on a project to assess as many populations of *Adenia pechuelii* as possible across its distribution range in a partnership between the Rössing Uranium Mine, the Rio Tinto Mining Group and the Royal Botanic Gardens in Kew (United Kingdom).

This project commenced in 2006 and will end

in 2008. Thus far 12 populations have been assessed with population sizes ranging from less than 10 plants in the vicinity of the Tinkas Dam area in the northern part of the Namib Naukluft Park to more than 800 plants at Leeukop near the Vogelfederberg. The Leeukop population has a good proportion of males and females and recruitment seems to be ensured.

A few populations are threatened by mining activities, particularly uranium mines. The proposed Valencia uranium mine has over 400 *Adenia* plants which will be threatened if the mine commences production. This Valencia population is healthy with plants generally in a good condition. The Rössing Uranium mine has approximately 200 specimens, some of which are threatened by mining activities. Other smaller populations such as those located on NamibRand Private Nature Reserve and on the farm Urikos are passively conserved.

It was found that in most population's leaves and/or flowers would only be present on a few individuals, and that the presence of these is not necessarily linked to the rainy season. Individuals within a population are usually found in different stages of flowering and fruiting and most individuals are sterile.

This big leaved Zebra River Lodge *A. pechuelii* population, although falling within the range of leaf size as indicated by Merxmuller (1966), is interesting as such big leaves are not common for this unique species.

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References

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