

## ADIANTACEAE

### *CHEILANTHES DELTOIDEA* KUNZE IN THE WATERBERG, TRANSVAAL

In March 1980 N. H. G. Jacobsen discovered a tiny, bright green, gregarious fern in cracks and shallow humus pockets on north-facing cliffs on the farm Leeuwpoot 573 KR, about 20 km north-west of Nylstroom, Grid no. 2428: (-CB) (Fig. 1). Samples were at first thought to be a dwarf form of *Cheilanthes viridis* (Forssk.) Swartz var. *viridis*, but the different rhizome scales and filiform stipes raised doubts. Material secured and examined during two visits to the site is mounted on sheet numbers *N. Jacobsen 5209* and *W. Jacobsen 5500*, at the National Herbarium, Pretoria (PRE).

The plants grew on very roughly hollowed out cliffs on a highly ferruginous vesicular lava of the Waterberg System, obviously representing the iron-rich scoria of an andesitic lava flow. Such scoriae are usually locally limited. The total length of outcrop was about 200 m. The vegetation both at the foot and top of the cliffs consisted of grasses and herbs with tufts of *Cheilanthes viridis* var. *glauca* (Sim) Schelpe & N. C. Anthony in sheltered position and frequent, elongate and rather contracted plants of *Cheilanthes hirta* Swartz, especially on top of the cliffs. Occasional small shrubs of *Diospyros lycioides* Desf. and *Ziziphus mucronata* Willd. grew along the ridge.

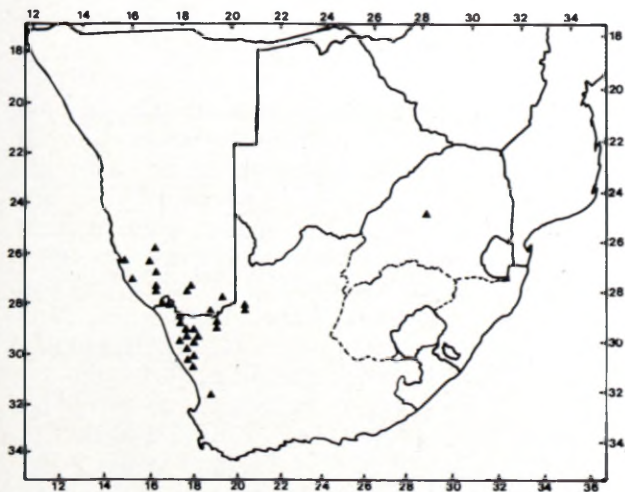


FIG. 1. — Distribution of *Cheilanthes deltoidea*.

On the whole the characteristics of the fern from the Waterberg agree with those of *Cheilanthes deltoidea* Kunze, a species known so far only from the arid and semi-arid regions of Namaqualand and southern SWA/Namibia. The rachis is somewhat atypical as it is not always winged with green laminar tissue above the basal pinnae (N. C. Anthony 1984: 110). Also slightly deviating are the occasional forking of the stipe about halfway up, allowing the development of two laminae on one common stipe, and the more widely spaced and narrower triangular pinules of the lowest pinnae, the latter resembling Sim's var. *laxa* of the species (Sim 1915, Pl. 105). Spores of *Jacobsen 5209*, however, were found to match those of typical *C. deltoidea* (N. C. Anthony pers. comm.).

The occurrence of this species outside its previously recognized distribution range suggested vari-

ous possibilities. Spore dispersion from Namaqualand or southern SWA/Namibia could possibly account for the apparently completely isolated presence in the Transvaal (Fig. 2).

In view of the harsh climatic conditions (north face, hot position on bare cliffs) of the Transvaal site it appears to be more likely that this population is a relict from a former, much drier period. Similar recently discovered occurrences in the Transvaal of some species thought so far to be confined to the western Cape or to SWA/Namibia, such as *Cheilanthes parviloba* Swartz and *C. marlothii* (Hieron.) Schelpe (W. B. G. Jacobsen 1983; N. C. Anthony 1984) or *C. contracta* (Kunze) Mett. ex Kuhn (N. C. Anthony 1984) support this hypothesis.

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#### REFERENCES

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FIG. 2. — *Cheilanthes deltoidea* in situ.