



Fig. 1: The magnificent Epupa Falls in the Cunene River on the border between Namibia and Angola (Photos: Alma Moller)

Euphorbia leistneri R.H.Archer from the Kaokoveld in northern Namibia

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In April 2007 the authors visited the only known locality of *Euphorbia leistneri* R.H.Archer near the spectacular Epupa Falls in the picturesque Kaokoveld in northern Namibia. To see these magnificent plants grow in the harshest environments was a memorable experience and we often reflect upon it with much fondness. Finding the population in the late afternoon was one of the highlights of our Namibian visit that year, especially after we spent the best part of the day searching for them in the searing heat (between 35 to 40 °C) amongst the unforgiving calcrete rocks that are so prevalent along the banks of the Cunene River.

Euphorbia leistneri was first collected by Dr. O. A. Leistner in 1976 and some live plants were kept at the then Pretoria National Botanical Gardens (now the Pretoria Chapter of South African National Biodiversity Institute), labelled as *E. monteiroi* Hook.f., which it resembles superficially. Then, in 1998, Dr. Robert Archer described *E. leistneri* after he realized that the

live plants kept at the herbarium were distinct from *E. monteiroi* and represented an undescribed species.

In the field *E. leistneri* can be mistaken for *E. monteiroi* because they both have thick succulent branches with very prominent tubercles. However, the leaves of *E. leistneri* are distinctively obovate (egg-shaped and flat, with narrow end attached to the pedicel), while those of *E. monteiroi* are spatulate-oblong (narrow base and broad rounded apex with greater length than breadth). Furthermore, the involucre glands of *E. leistneri* are green and pitted, in contrast with the red-purple glands with conspicuous processes of

Editors' note: In literature you will find both E. monteroi and E. monteiri ending with an "i", but it has to be ending with "oi". In 1865 Joseph D. Hooker fil. honoured the discoverer of the species, Joachim Monteiro, Esq., naming the species E. monteiri, but according to the ICBN (2006) Art. Rec. 60C.1.(a) it has to be E. monteiroi, because if the personal name of a male botanist ends on a vowel (except when ending on an "a"), the epithet gets an "i" after the full name.

E. monteiroi ssp. *monteiroi*. *E. monteiroi* ssp. *brandbergensis* B.Nord. has green glands as well, however these are dark green with 4-5 light green finger-like processes.

While the habit of *E. leistneri* seems similar to that of *E. monteiroi*, it is evolutionarily more closely related to *E. transvaalensis* Schltr. (the latter being extensively portrayed in *Euphorbia World* 2/2010, p. 18ff), both falling within subgenus *Chamaesyce* (Clade D), while *E. monteiroi* is nested within subgenus *Rhizanthium* (Clade A, cf. Bruyns et al., 2006). Further phylogenetic analysis suggests that *E. leistneri* and *E. transvaalensis* are closer relatives to herbaceous species of northern and eastern Africa than any of their southern African brethren. These include *E. pirottae* A.Terrac., an annual (or perhaps short-lived perennial) herb from East Africa and the Arabian Peninsula, and the perennial herb, *E. goetzei* Pax, which occurs as far south as Zambia. Interestingly, within the same cluster of sister species stemming from a common ancestor is *E. platyclada* Rauh, an endemic stem succulent from Madagascar. It will be interesting to see how the relationships between *E. leistneri* and its closest relatives pan out as more phylogenetic data become available, but, at least for now, it seems as if this hardy desert plant is part of a widespread Old World group that includes both herbs and stem succulents.



Fig. 2: *Euphorbia leistneri* growing in its type locality just to the east of the Epupa Falls



Fig. 3: *Euphorbia leistneri* (left) and *Euphorbia monteiroi* (right) at SANBI in Pretoria



Fig. 4: The involucre of *Euphorbia leistneri* (Photo by R. H. Archer)

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References

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Fig. 5: *Euphorbia leistneri* fruiting



Fig. 6: *Euphorbia subsalsa* Hiern growing on calcrete at the type locality of *Euphorbia leistneri*