

ZYGOPHYLLACEAE

A NEW SPECIES OF *ZYGOPHYLLUM* FROM SOUTHERN AFRICA

***Zygophyllum macrocarpon* Retief, sp. nov., *Z. foetido* Schrad. & Wendl. affinis sed fructibus adumbratione oblongis non subglobosis alabastris dense pubescentibus differt.**

TYPE.— Cape, 2817 (Vioolsdrif): Richtersveld, Kodaspiek, main ridge south east of beacon and up to summit (–AA), Oliver, Tölken & Venter 417 (PRE, holo.; K, MO).

A glabrous succulent shrub up to 1,8 m high. *Stems* woody, sparsely branched. *Leaves* fleshy, opposite, petiolate, bipinnate, broadly ovate, variable in size, 27–60 × 24–58 mm, apex rounded, base asymmetrical, margin entire; petioles 5–10 mm long. *Interpetiolar stipules* ovate to broadly ovate, 2–5 × 2–3 mm. *Flowers* 2 together in the axil of a leaf. *Sepals* 5, persistent, ovate, ± 5 × 3 mm, connate at the base, margins hairy. *Petals* 5, obovate, 15–20 × 8–12 mm, yellow with purplish brown or red markings in the throat. *Disc* fleshy, 10-angled. *Stamens* 10, inserted at the disc base; filaments terete, ± 7–7,5 mm long; anthers ± 1,5 mm long; appendages undivided, margin fimbriated, 0,25 times as long as the filament. *Ovary* sessile on the disc. 4–5-locular with several pendulous ovules in each loculus; style terete, ± 5 mm long; stigma minute. *Fruit* a 4–5-angled capsule, 5-locular with several seeds, oblong, 35–50 × 71–21 mm. *Seeds* crustaceous, ± 5 mm long, brownish black. Figure 18.

SWA/NAMIBIA.—2716 (Witputz): Udabib Mountains (–BB), Müller 799 (PRE); Aurus Mountain (–CA), Müller 736 (PRE); Farm Spitzkopp (–DC), Giess 13045 (PRE).

CAPE.—2816 (Oranjemund): Sendelingsdrif (–BB), Van der Westhuizen 133/80 (PRE); head of Helskloof, Hottentotparadys Mountain (–BD), Thompson & Le Roux 121 (PRE, STE). 2817 (Vioolsdrif): Richtersveld, Kodaspiek, main ridge south east of beacon and up to summit (–AA), Oliver, Tölken & Venter 417 (K, MO, PRE).

Z. macrocarpon is found on mountain slopes in the Richtersveld and the southern part of South West Africa/Namibia. The species grows in well drained stony clayey or sandy loamy soil. According to Giess (1971) in South West Africa/Namibia this species occurs in Desert and Succulent Steppe (Winter rainfall area). In the Cape *Z. macrocarpon* is found in two different veld types, namely, in Succulent Karoo and Namaqualand Broken Veld (Acocks 1975). These veld types are dominated by succulents, mainly species of Mesembryanthemaceae together with a few trees or large shrubs. According to herbarium records *Z. macrocarpon* flowers and fruits from July to September.

Z. macrocarpon is most closely related to *Z. foetidum* Schrad. & Wendl. The leaves of these two species are broadly ovate and prominently petiolate. The flowers are also similar in structure and size. *Z. foetidum* differs from *Z. macrocarpon* in having hairy flowerbuds. The fruits of *Z. macrocarpon* are oblong in outline while in *Z. foetidum* they are subglobose. These two species also differ in their distribution. *Z. foetidum* occurs from south of Springbok

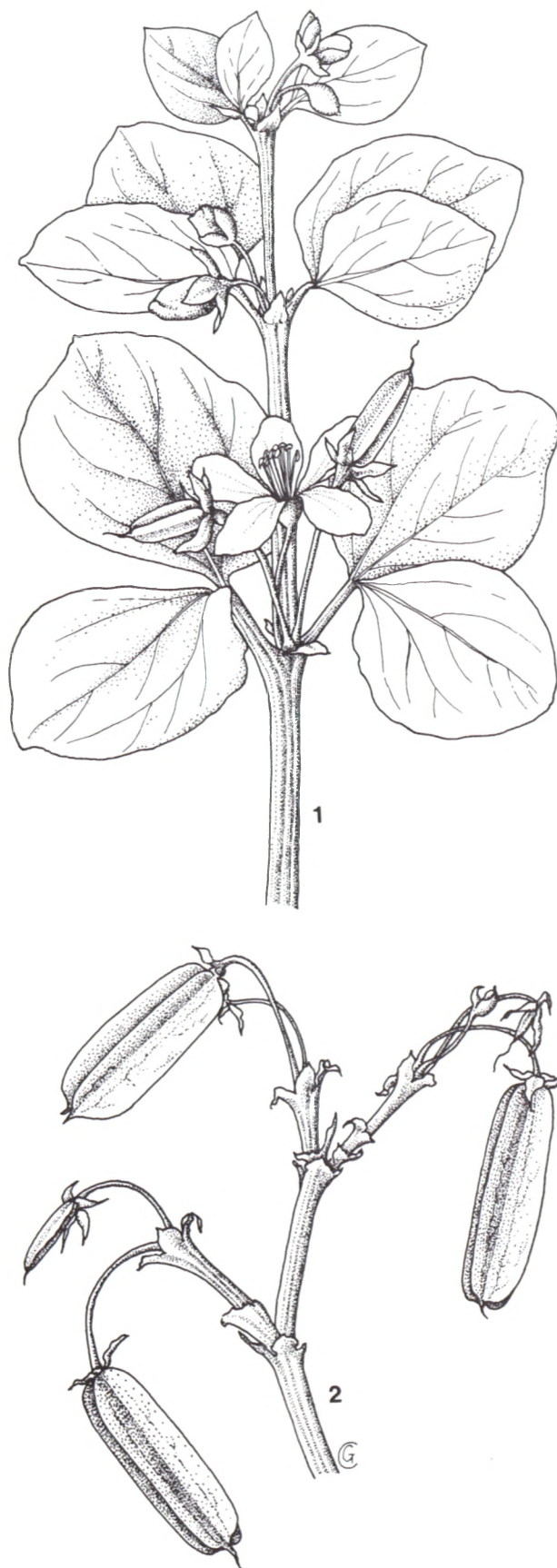


FIGURE 18.—*Zygophyllum macrocarpon*. 1, flowering branch, × 1; 2, fruiting branch, × 1 (Oliver, Tölken & Venter 417).

to the eastern Cape, whereas *Z. macrocarpon* is found north of Springbok.

The specific epithet 'macrocarpon' refers to the size of the fruit. These are large, oblong, and 5-angled which, together with the conspicuously large bipinnate leaves and flowers, distinguish *Z. macrocarpon* from other southern African species of *Zygo-phyllum*. The same fruit form is found in *Z. debile* Cham. & Schlechtd. These fruits are, however, small, 13–20 mm long, compared with *Z. macrocarpon* of which the fruits are 35–50 mm long.

Z. foetidum Schrad. & Wendl., *Z. leptopetalum* E. Mey. ex Sond. and *Z. meyeri* Sond. also have large bipinnate leaves but differ from *Z. macrocarpon* in that their fruits are subglobose in outline. The petals of *Z. macrocarpon* are 15–20 mm long, and therefore large in comparison with, for example, those of *Z. dregeanum* which are 3–4 mm long.

The flowers of *Z. fulvum* are similar in size to those of *Z. macrocarpon*, but differ in having leaflets that are elliptic in shape and not broadly ovate as in the case of *Z. macrocarpon*.

Based on the fruit dehiscence, the genus *Zygo-phyllum* can be divided into two subgenera, namely, *Agrophyllum* Endl. and *Zygophyllotypus* Van Huyssteen. The dehiscence of the subgenus *Agrophyllum* is septicidal, whereas loculicidal dehiscence is found in the subgenus *Zygophyllotypus*. The species of this latter subgenus, indigenous in southern Africa, are grouped in different sections. *Z. macrocarpon* is placed in the section *Capensia* Engl. to which the species *Z. foetidum* also belongs.

REFERENCES

- ACOCKS, J.P.H. 1975. Veld types of South Africa. *Memoirs of the Botanical Survey of South Africa* No. 40.
GIESS, W. 1971. A preliminary vegetation map of South West Africa. *Dinteria* 4: 8–9.

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