

Notes on African plants

VARIOUS AUTHORS

ARACEAE

A NEW SPECIES OF *GONATOPUS* FROM SOUTHERN AFRICA

Gonatopus rhizomatosus Bogner & Oberm. sp. nov., *G. boivinii* (Decne.) Engl. affinis, sed rhizomate cylindraceo longo horizontali non globoso et petiolo non geniculato differt.

Planta rhizomatosa 20-40 cm alta. *Folium* unum annuum decompositum proteranthum; petiolus tenuis 15-25 cm longus; lamina a basi ternata supra 1-2 divisa; pinnae oppositae vel suboppositae decurrentes. *Spadix* breve pedunculata c. 10 cm longa. *Spatha* angusta c. 7 cm longa margine ad basi libero. *Flores masculi* superiores; tepala paribus oppositis semi-prismatica truncata 3 mm longa. *Staminum filamenta* connata. *Flores steriles* in medio masculini et feminei.

Flores feminei inferiores. *Gynoeceum* ampulliformum bilocularum; ovulum anatropum. *Bacca* oblongo-globosa c. 15 mm longa; semen anguste ellipsoideum, 12 mm longum.

TYPE: Transvaal, 2531 (Komatipoort): 5 km S. of Kaalrug Police Station near Swedish Mission (-DA), Codd 7814 (PRE, holo.; M, iso.).

Herbaceous plant producing annually one leaf and later beside it 1 or rarely 2 inflorescences. *Rhizome* horizontal, 20 cm long and 3 cm in diameter, or longer, cylindrical, tuberous, somewhat contracted irregularly at intervals, forming much-branched mats, brown outside with white flesh; roots scattered, fairly thick.



FIG. 1.—*Gonatopus rhizomatosus*.
Eastern Transvaal (Codd
7814), $\times \frac{1}{2}$.

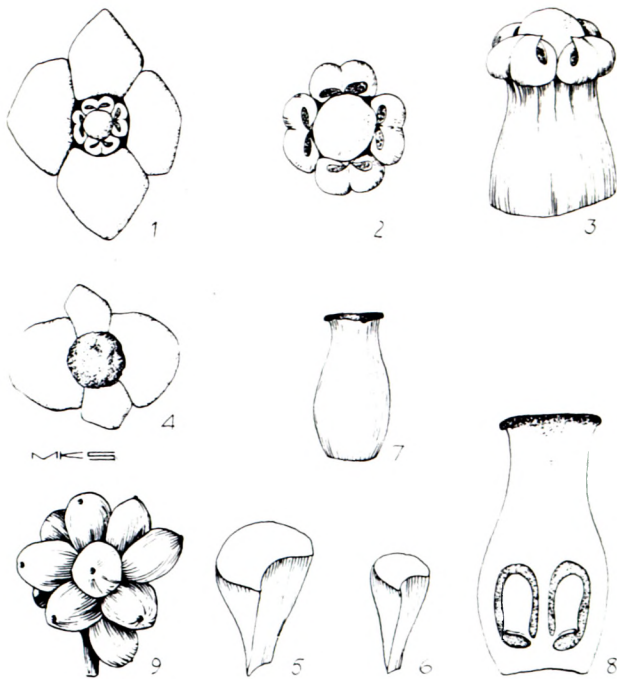


FIG. 2.—*Gonatopus rhizomatosus*. 1, male perianth, $\times 6$; 2, stamens and sterile ovary from above, $\times 10$; 3, stamens seen from side, $\times 10$; 4, female perianth, $\times 6$; 5, outer tepal $\times 6$; 6, inner tepal $\times 6$; 7, ovary, $\times 6$; 8, longitudinal section through ovary, $\times 10$; 9, fruits, $\times \frac{1}{2}$. (Moll 4974A).



FIG. 3.—Pollen grains ($\times 500$) of *Gonatopus rhizomatosus*
Photo: W. Barthlott.

Leaf erect, with a petiole 15–25 cm long, dull grey with lighter mottling, surrounded by cataphylls at the base; lamina somewhat fleshy, decompound, 3-branched at the base, once or twice branched above it, pinnae opposite or subopposite, linear to oblong, attenuate above and below, 4–8 cm long, all or only the terminal decurrent on rachis, often with a small side-lobe. *Spadix* on a short peduncle c. 10 cm long, grey, mottled; spathe constricted, green in bud, turning pinkish buff with black stripes but soon drying up, c. 7 cm long, closely enveloping spadix, apiculate, not fused below, the upper part reflexed at anthesis, the lower enclosing the female part for some time, dropping off when fruit is set. *Male flowers* compressed in spiral series on upper half of cylindrical, obtuse spadix; tepals in 2 opposing free pairs, semi-prismatic, thick, truncate, c. 3 mm long; stamens 4, with the filaments fused into a tube, surrounding the sterile, clavate gynoecium; anthers arranged in a circle, thecae opening apically towards the centre. *Pollen grains* depressed globular, $95\text{--}110\mu \times 30\text{--}40\mu$, meridionulcate, exine sparsely covered with very small foveolae. *Female flowers* on lower part of spadix, with sterile flowers in between male and female flowers; tepals similar to male flowers; stamens absent; gynoecium flask-shaped, laterally compressed, 2-locular with an anatropous basal ovule in each locule; style short; stigma discoid, large, green, just protruding from perigon. *Berries* bilocular, oblong-globose, c. 15 mm long, in a globose cluster surrounded basally by the persistent tepals and unfertilized flowers, walls soft, thin. *Seed* narrowly ellipsoid, 12 mm long, coat thin, without endosperm. Chromosomes: $2n=c.68$ (N. Jacobsen). Figs 1, 2 & 3.

Eastern Transvaal, northern Natal, Mozambique, Rhodesia; common in undergrowth of dune forest in northern Natal, often in shady rock pockets in low-lying bushveld areas of eastern Transvaal; flowering November to February.

TRANSVAAL.—2331 (Phalaborwa): Gorge (–DD), *Van der Schijff* 2387. 2431 (Acornhoek): 21 km E. of Skukuza (–DC), *Codd* 5045. 2531 (Komatipoort): 4 km W. of Lower Sabie Camp (–BB), *Codd* 5707 (M, PRE); Kaap Muiden (–CB), *Mogg* 13687; 5 km S. of Kaalrug Police Station near Swedish Mission (–DA), *Codd* 7814 (PRE, holo.; M, iso.).

NATAL.—2632 (Bela Vista): Mtombeni Forest, slopes facing Nhlang Lake (–CD), *Tinley* 396. 2731 (Louwsburg): Josini Dam, slopes (–BD), *Strey* 5278. 2732 (Ubombo): Ngwavuma, on road to Ndumu (–AA), *Venter* 5215; Lebombo foot hills on road to Pongola River (–AC), *Strey* 6580; Makatini flats near Mbazwane (–BC), *Vahmeijer & Toelken* 208. 2831 (Nkandla): Umfolozi Game Reserve (–BD), *White* 10357; 16 km W. of Empangeni on Melmoth Road (–DD), *Moll* 4974a. 2832 (Mtubatuba): Hluhluwe Game Reserve (–AA), *Ward* 1967; near Mtubatuba (–AC), *Codd* 9619.

MOZAMBIQUE.—Inhaca Island, *M. Moss* sub. *J.* 28428.

RHODESIA.—Beitbridge district, 16 km S. of Lundi River, *Wild* 7610.

Two species of *Gonatopus* occur in southern Africa, namely *G. boivinii* (Decne.) Engl., a tropical eastern African species, which reaches its southernmost limit in northern Natal, and *G. rhizomatosus*, the species here described, which has been recorded from northern Natal, eastern Transvaal Lowveld, Mozambique and Rhodesia.

In *G. boivinii*, a taller plant, the underground part consists of a globose often depressed tuber, the petiole forms a swollen articulation in the middle and the decompound lamina has sessile or petiolate paired pinnae, which are not decurrent. In *G. rhizomatosus* the underground part consists of a long horizontal tuberous rhizome, the petiole is without a swollen central articulation and the decompound lamina has the pinnae opposite or subopposite and decurrent. There is also a difference in the size of the pollen grains for they are much larger than those of *G. boivinii* and the exine is more sparsely covered with foveolae.

Mr Josef Bogner of the Botanical Garden of Munich, co-author of *G. rhizomatosus*, is an authority on the Araceae. He assisted me most generously in clarifying the position of this species and the tropical ones described by A. Peter under the latter's genus *Microculcas*. Mr Bogner will deal with these taxonomic problems at a future date. He assures me that our southern rhizomatous species differs from *Microculcas marattioides* described by Peter from Tanzania. The latter also possesses a horizontal rhizome but, in addition, develops long stolons which swell up to about the thickness of a finger and produce a leaf at their ends. The petiole too, is swollen basally, but becomes attenuated and thin above.