DINTERIA NR. 9 — WINDHOEK, S.W.A. — APRIL 1973

A new species of *Commiphora* from the Kaokoveld (South West Africa)

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Commiphora giessii Van der Walt, species nova, *C. virgata* Engl. foliis trifoliolatis, forma foliolorum, structura basica florum et fructus affinis, sed ab eo ramis multis circa 2,5 cm diametro planum soli exorientibus, cortice ferruginea et plerumque non decorticanti differt.

Frutex dioecius, ramis multis circa 2,5 cm diametro planum soli exorientibus, cortice ferruginea et plerumque non decorticanti. Folio trifoliolata, foliolis ellipticus ad anguste obovata, marginibus integris. Flores hypogyni. Fructus irregulariter obovoideus vel subglobosus valde asymmetricus; putamen rugosum protuberatione prominenti in dimidio superiore superficiei minore convexae; pseudarillus brachiis quattuor apicem putaminis fere attingentibus. Type: South West Africa, Kaokoveld, 23 km N.W. of Sesfontein on Purros road, **Van der Walt** 242 (PRE, holo.; WIND, STE).

Dioecious shrub, 1,5—3 m high and 2—5 m in diameter, many branches of ± 2,5 cm in diameter sprouting forth from soil level; bark reddish-brown, shiny, usually not peeling, with numerous white, small, lenticular lenticels; young branchlets very slender and often drooping. Leaves trifoliolate, 1—7 cm but usually 2—3 cm long, glabrous; petiole up to 2,5 cm but usually less than 1 cm long; petiolules usually less than 1 mm long; leaflets elliptic to narrowly obovate, apex acute or obtuse, base cuneate, margins entire, terminal leaflet 1—4,5 × 0,5—2,5 cm but usually ± 2 × 1 cm, lateral leaflets 1—3,5 × 0,5—1,5 cm but usually ± 1,5 × 0,7 cm. Flowers unisexual, hypogynous, appearing before or with the leaves, solitary or in axillary cymes, male flowers 5,5—6,5 mm long. Bracteoles ovate, apex acute, less than 2 mm long, glabrous. Pedicels up to 1 mm long, glabrous. Calyx yellowish-green to light red, glabrous, 2 mm long and lobes 0,5 mm long in male flowers, apex acute. Petals yellowish-green to light red, glabrous, 4,5 mm in male flowers. Disc cylindrical, not adnate to calyx or corolla, in male flowers very fleshy with 4 prominent lobes, inside of lobes grooved. Stamens 8, 4 long stamens up to 3 mm long, inserted high up on the outside of disc lobes, 4 short stamens up to 2,2 mm long, inserted on the outside of disc between lobes; filaments slender, subterete; staminodes in female flowers. Gynoecium superior, rudimentary in male flowers. Fruit 6 × 5 × 5 mm, irregularly obovoid or subglobose, markedly asymmetrical; exocarp red

in ripe fruit, glabrous; mesocarp fleshy; putamen 5 × 3 × 3 mm, irregularly obovoid, asymmetrically flattened with one face more convex than the other and a prominent hump on upper half of less convex face, slightly rugose; pseudaril with 4 thin arms of equal length reaching almost to apex of putamen.

Diagnostic features: Dioecious shrub, many branches of ± 2,5 cm in diameter sprouting forth from soil level, bark reddish-brown und usually not peeling. Leaves trifoliolate, leaflets elliptic to narrowly obovate, margins entire. Flowers hypogynous. Fruit irregularly obovoid or subglobose, markedly asymmetrical; putamen rugose, with a prominent hump on upper half of less convex face; pseudaril with 4 arms reaching almost to apex of putamen. ((Fig. 1—5).

So far *C. giessii* has only been collected in the Kaokoveld in the vicinity of Sesfontein and Sanitatas. It is very common north-west of Sesfontein where it grows on the slopes of the mountains, on the kopjes and also in the valleys. This area is warm and arid with an average annual rainfall of ± 250 mm. Other species of *Commiphora* which occur in this area are: *C. virgata* Engl., *C. saxicola* Engl., *C. tenuipetiolata* Engl., *C. multijuga* (Hiern) K. Schum. and *C. wildii* Merxm.

SOUTH WEST AFRICA. — 1812 (Sanitatas): Mountain Pass 3 km W. of waterhole Okonjombo (-BD), **Giess & Leippert** 7418 (WIND); between Otjikongo and Sanitatas (-BB), **Merxmüller & Giess** 1446 (M). 1913 (Sesfontein): 23 km N.W. of Sesfontein on Purros road (-AB), **Van der Walt 242** (PRE, WIND, STE); 16 km N.W. of Sesfontein on Purros road (-AB), **De Winter & Leistner** 5713 (PRE).

From a detailed study made of the structure of the flowers and fruit of *C. giessii* and *C. virgata,* it can be deducted that these two species are closely related. Both species have hypogynous flowers with the fleshy disc forming four prominent lobes. The male flowers studied of *C. virgata,* differ however in size (4—4,5 mm), being smaller than those of *C. giessii* (5,5—6,5 mm). The fruit of both species is markedly asymmetrical, the putamen rugose with the pseudaril forming four arms of equal length, reaching almost to the apex of the putamen. In both species a hump is present on the less convex face of the putamen, the hump of *C. giessii* being decidedly the more prominent. On the more convex face of the putamen, the arm of the pseudaril of *C. virgata* is broader than the corresponding arm of *C. giessii.*

The similarity between the leaves of the two species is also noticeable. It is almost impossible to distinguish between the leaves of the two species, and this may be the likely reason why *C. giessii* had not been described before.

The habitus of *C. giessii* is very characteristic (as described above) and in this respect it differs completely from *C. virgata.* The short trunk of *C. virgata* branches out above soil level into relatively thick stems. These two species occur together in the Sesfontein area, which excludes the possibility that the difference in habitus is due to environmental conditions.

The reddish-brown bark of *C. giessii,* as a rule, does not peel off. It has been noted however that occasionally the bark of thicker trunks near soil level, does peel off in reddish-brown, papery pieces. The bark of *C. virgata* on the other hand, always peels off in yellowish-white to silvery, papery pieces.

ACKNOWLEDGEMENTS

Thanks are due to Mr. W. Giess, M. A. N. Muller and the Department of Nature Conservation and Tourism (SWA) who assisted in obtaining the material. I am also grateful to Mr E. G. H. Olivier, Mr G. C. Crafford and Mrs A. E. Cillié for their co-operation in the preparation of the paper. Prof. Dr. H. Merxmüller kindly lent me a specimen of this species. The research project was supported by grants from the C.S.I.R. and University of Stellenbosch.

Fig. 1. *Commiphora giessii* near Sesfontein (2 m high and 2,5 m in diameter).

Fig. 2. Close-up view of the relatively thin stems of *Commiphora giessii* sprouting forth from soil level.

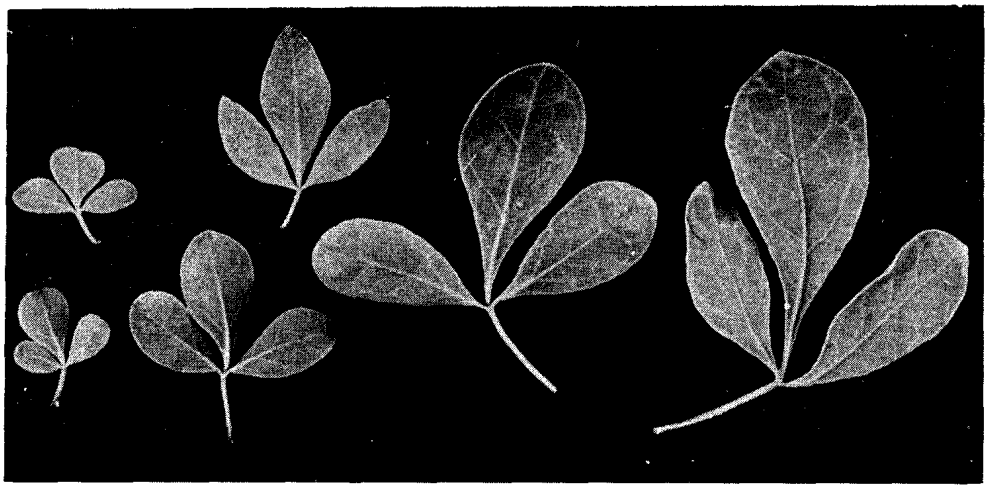

Fig. 3. Leaves of *Commiphora giessii.*

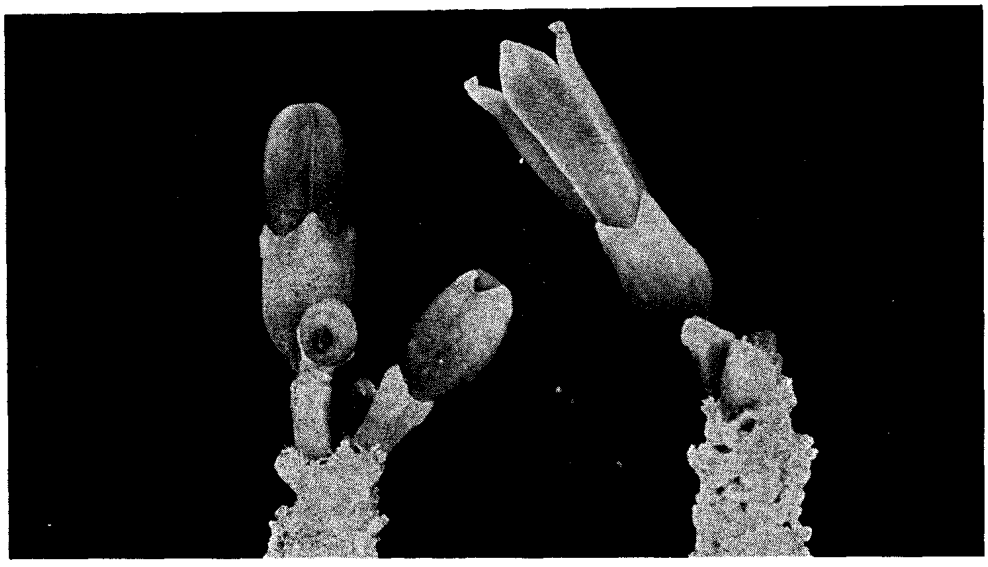

Fig. 4. Inflorescences of *Commiphora giessii.*

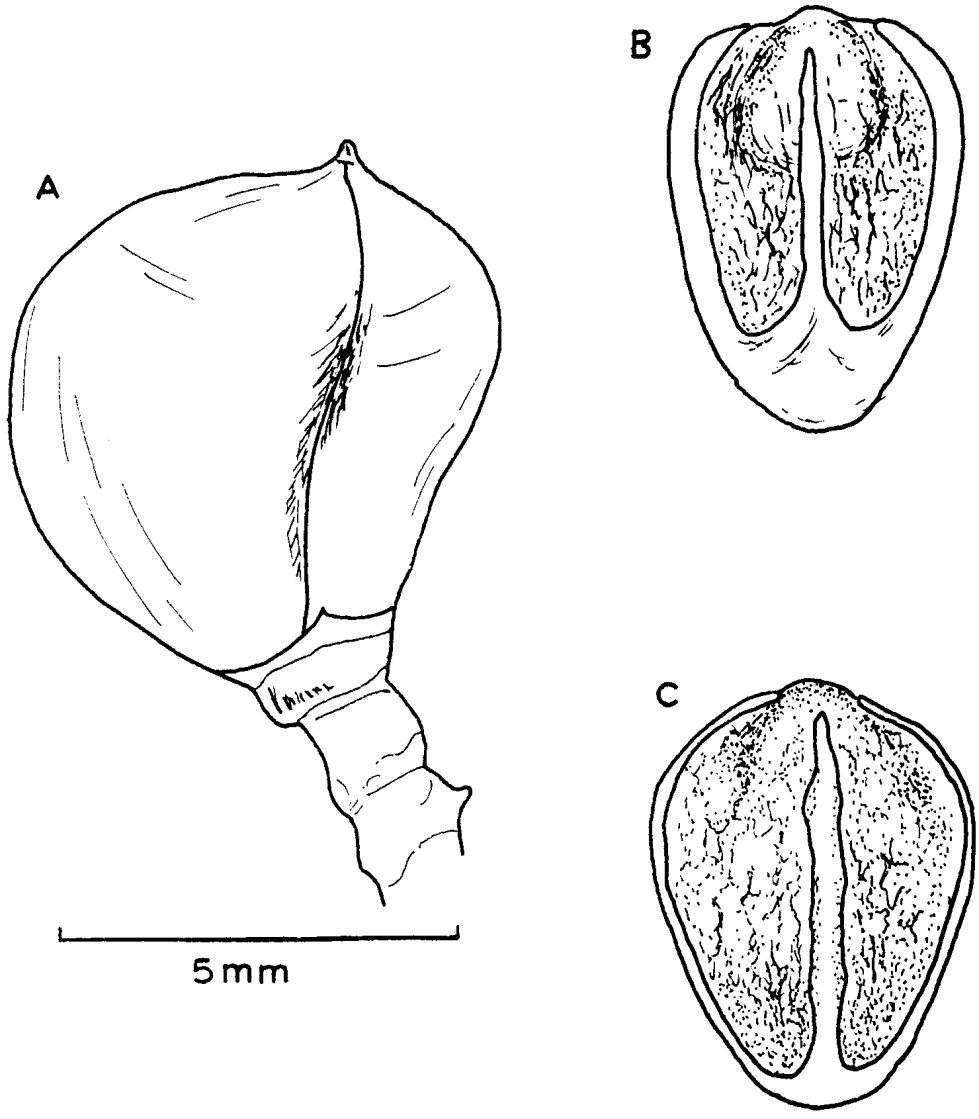

Fig. 5. Fruit of *Commiphora giessii*:
A, Side view of the fruit.
B, View of the less convex face of the putamen with pseudaril.
C, View of the more convex face of the putamen with pseudaril.