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PROF. DR. A. FERNANDES
Director do Instituto Botânico
DR. J. BARROS NEVES
Professor catedrático de Botânica

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STUDIES IN AFRICAN *MALPIGHIACEAE*

by

EDMUND LAUNERT

Department of Botany, British Museum, London

I. TWO NEW SPECIES AND TWO SUBSPECIES OF *TRIASPIS* BURCH.

Triaspis dumeticola Launert, spec. nov. (Tab. I)

Planta volubilis, elegans parce divaricata. Ramuli teretiusculi, tenuiter striati, laeves, 2-4 mm diametro, cortice griseo vel glaucescenti obtecti, novelli ± dense griseo-sericei vel pubescentes mox glabrescentes. Folia petiolata; lamina (3)4.5-10 cm longa et (1.8) 2.5-6 cm lata, ovata, apice acuta, basi cordata vel subcordata, crasse herbacea, costis secundariis utrinsecus mediani 6-10 subtus prominulis, utrinque glabra vel rare dissite pilosa, supra obscure viridia subtus dilute viridia, margine integra, plana; petiolus (1.2) 2-2.5 cm longus, gracilis, subcanaliculatus. Stipulae absentiae. Corymbi multiflori terminales axillaresque, sericei vel pubescentes valde glabrescentes; pedunculis corymbiferis 1.5-5 cm longis; bracteis triangulari-subulatis acutis ± 1.5 mm longis, pubescentibus vel glabris; bracteolis subulatis ± 1 mm longis. Flores hermaphroditi, pentameri, distincte zygomorphi ± 1.8 cm diametro. Sepala ovati-oblonga vel late elliptica ± 2.8 mm longa, plerumque glabra, rare dissite pilosa. Petala unguiculata, alba et rubicunde adspersa, patentissima vel reclinata, valde inaequalia; quintum navicullariforme ± 8.8 mm longum marginibus totaliter fimbriatum, altera ovata vel late elliptica ± 8 mm longa basin versus fimbriata. Stamina longe exserta; antherae oblongae ± 2 mm longae; filamenta inter se libera, filiformia, glabra, 5-5.6 mm longa. Ovarium ± dense sericeum. Styli 3, glabri ± 4.8 mm longi, apice leviter incrassati. Samara in statu maturo ignota; crista dorsalis instructa.

DISTR.: **Southern Rhodesia**; Matobo, Malema Dam, 1300 m, fl. xii. 1959, *O. B. Miller* 7013 (K, holotypus; SRGH, isotypus).

HABITAT: On edges of woodland.

Triaspis dumeticola is closely related to *T. nelsonii* Oliver but differs from it by its true climbing habit, the several times larger leafblades, which are long petiolate whilst the leaves in *T. nelsonii* are always sessile or nearly so. Furthermore, *T. nelsonii* is a shrublet with radiating stems. and only the branchlet tips are tending to climbe.

Triaspis suffulta Launert, spec. nov.

Frutex scandens usque ad 5 m altus, multiramosus; ramulis subpatentibus. Ramuli teretiusculi, glabri vel glabrescentes, mox cortice griseo-brunneo vestiti, dissite lenticelliferi, internodia foliis subpatentibus aequilonga vel eis longiora. Folia petiolata; lamina 3.5-4 cm longa, 2.2-2.5 cm lata, ovati-oblonga ad oblonga, apice obtusa interdum leviter retusa, basi rotundata vel subcordata, subcoriacea, costis secundariis utrinsecus mediani 4-8 non prominulis, utrinque glabra vel subtus novella ± dense sericea mox glabrata, supra pallide viridia, subtus glauca, eglandulosa vel subtus supra basim glandulis 2 circularibus impressis inconspicuis ornata; petiolus 0.5-1.2 cm longus, teretiusculus vel tenuiter canaliculatus, sericeus vel glabratus. Stipulae absentiae. Corymbi multiflori, ramulos terminantes ad folia annotina axillares et plerumque sub ipsis ad apicem internodii 2-3 cm longi 2 foliola brevipetiolata vel sessilia 0.4-1.5 cm longa et 0.4-1.3 cm lata suborbicularia ad elliptica vel ovati-oblonga apice obtusa apiculateque subtus inconspicue reticulata gerentes; bracteis ovati-lanceolatis usque ad 2 mm longis; bracteolis lanceolatis brevissimis. Flores hermaphroditi, pentameri, distincte zygomorphi, 12-15 mm diametro. Sepala ovati-oblonga ad oblonga, 2.4-2.9 mm longa et ± 1.6 mm lata, extus sericea. Petala reclinata, unguiculata ± 7.5 mm longa marginibus dimidio inferiore fimbriata, quintum navicullariforme, altera cochleariformis. Stamina exserta; antherae oblongae, ± 1.6 mm longae; filamenta inter se libera, glabra, ± 4 mm longa. Ovarium ± dense sericeum.

Styli 3, glabri, 4-5 mm longi, apice leviter incrassati. Samarae puberulae vel glabrae; ala lateralis ovata ad ovati-triangulata, 2.5-3.3 cm longa et 1.7-2.3 cm lata, apice obtusa vel subobtusa raro acuta, rigidi-coriacea; ala dorsalis absens.

DISTR.: **Mozambique**; Vilanculos, fl. & fr. 27.iii.1952, *Barbosa & Balsinhas* 5006 (BM, holotypus).

HABITAT: Climbing in trees or shrubs on dunes near the coast.

Triaspis suffulta is doubtlessly closely related to *T. glaucophylla* Engler, a shrub which occurs in the Lydenburg District of Transvaal. It may be keyed out from it as follows:

1) Weak shrub with radiating stems and sometimes twining branchlet tips. Lamina of the leaves of the main-stem and the vegetative branches not different from those attached to the inflorescence, subcircular, subreniform or broadly ovate. Side-wing of the samara oblong or elliptic ..... *glaucophylla*

1) Scandent shrub, usually climbing on trees. Lamina of the leaves of the main-stem and the vegetative branches different in shape and size from those attached to the inflorescence, ovate-oblong to oblong ..... *suffulta*

Triaspis macropteron Welw. ex Oliv., Fl. Trop. Afr. **1**: 281 (1868)
subsp. **massaiensis** (Niedenzu) Launert, stat. nov.

Typus subspeciei: Tanganyika; Kagehi, *Fischer* 66 (K).
Syn.: *Triaspis stipulata* Engler, Bot. Jahrb. **43**: 382 (1909) non Oliv. (1868).
Type from Tanganyika; Ugogo-Steppe, Kilimatinde, *Claus* s. n.
Triaspis massaiensis Engler ex Niedenzu in Engler, Pflanzenr. IV, 141: 52 (1928) in syn.
Triaspis macropteron var. *speciosa* forma *massaiensis* (Engler) Niedenzu in Verz. Vorl. Akad. Braunsb.

S.-Sem. **1924**: 7 (1924); in Engler, Pflanzenr. IV, 141: 52 (1928). — Brenan, Tanganyika Territory Checklist **2**: 296 (1949).

Type as for the subspecies above.

Triaspis speciosa Niedenzu in Engler, Pflanzenw. Ost-Afr. **C**: 232 (1895).

Syntypes from Tanganyika: *Stuhlmann* 4319 (B †) & 4575 (B †) and *Fischer* 290 (B †; K).

Triaspis macropteron var. *speciosa* forma *brevistipulata* Niedenzu, loc. cit. pro parte.— Brenan, loc. cit.

Type from Tanganyika: *Fischer* 290 (B †; K).

Triaspis nelsonii Oliv. in Hook., Ic. Pl.: t. 1418 (1883)
subspec. **canescens** (Engler) Launert, stat. nov.

Typus subspeciei: Mozambique; Ressano Garcia, fl. 18.xii. 1897, *Schlechter* 11827 (B †; K, lectotypus).

Syn.: *Triaspis canescens* Engler, Bot. Jahrb. **36**: 249 (1905). — Niedenzu in Arb. Bot. Inst. Akad. Braunsb. **6**: 26 (1915); in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 7 (1924); in Engler, Pflanzenr. IV, 141: 47 (1928).

II. A NEW VARIETY OF *ACRIDOCARPUS NATALITIUS* A. JUSS.

Acridocarpus natalitius A. Juss. in Archiv. Mus. Paris **3**: 486 (1843)
var. **linearifolius** Launert, var. nov.

Typus varietatis: Mozambique, Magude, Mapulanguese, *Torre*, 6564 (LISC). Tab. II.

Syn.: *Acridocarpus pondoensis* Engler ex Niedenzu in Arb. Bot. Inst. Akad. Braunsb. **7**: 7 (1921); in Engler, Pflanzenr. IV, 141: 265 (1928) e descr.

Typus: Pondoland, am Rande des Egosawaldes, 200-500 m, *Beyrich* 94 (B †).

The differences between the 2 varieties of *A. natalitius* are as follows:

1) Leaf-lamina oblong, oblanceolate, oblong-obovate or oblong-oblanceolate, always broader than 1 cm ... var. *natalitius*
1) Leaf-lamina linear or linear-oblanceolate, 0.5-1 (1.3) cm broad ..... var. *linearifolia*

The type of *A. pondoensis* was destroyed in Berlin during the war, but according the description there is no doubt that ENGLER had our taxon in mind when he described his species. The differences between *A. natalitius* and *A. pondoensis* are only those of the shape and size of the leaf-lamina as indicated above. There are so many transitional forms linking our variety with the typical *A. natalitius* that one might even be inclined to regard this taxon as a mere form of it. Both the varieties are found growing together.

III. A REVISION OF THE CONTINENTAL AFRICAN SPECIES OF *SPHEDAMNOCARPUS* PLANCH. (SERIES *MICROCARPI* ARÈNES)

Athough the genus *Sphedamnocarpus* has been revised twice within the last 35 years [by NIEDENZU in Engler, Pflanzenr. VI, 141: 252-258 (1928) and by ARÈNES in Notul. Syst. **11**: 97-123 (1943)] the vast amount of material which has come in, mainly in the last decade, collected in South and Southern Tropical Africa has made it necessary to change the conception outlined by the authors mentioned above. As regards history, delimitation and relationship of the genus, everything important will be found in the works cited. Unfortunately the brillant botanist ARÈNES concentrated his valuable studies mainly on Madagascar species and did not pay much attention to the species of the mainland of which the material is mainly to be found in the Herbaria of the British Museum, Kew, Coimbra, Lisbon, Pretoria, Salisbury, etc.

1) Leaf-lamina sericeous-tomentose on both surfaces (usually less so on the upper one), or only underneath and glabrescent above 2

2) Plant an erect or suberect, sometimes trailing shrub or shrublet, or sometimes with the branchlet tips twining. Leaves of the main stems usually ternate, rarely opposite, and very rarely pseudo-alternate; densely sericeous-tomentose on the lower, less so or occasionally glabrescent on the upper surface; petiole 2-3(5) mm long ..... 2. *angolensis*

2) Plant always a true climber, with stems never shrubby. Leaves of the main stems strictly opposite (only very rarely some basal ones in threes), densely sericeous-tomentose on the lower surface, glabrous, glabrescent or with a persistent arachnoid or tomentellous indumentum on the upper one; petioles (4) 7-40 mm long ..... 3. *pruriens*

1) Leaf-lamina glabrous or sparsely strigose 3

3) True climbers with stems always twining, never shrubby ..... 4. *galphimiifolius*

3) Erect or rarely trailing shrubs or shrublets, but sometimes with twining branchlet tips 4

4) Leaf-lamina 5.5-9 × 2.3-3.75 cm. Strongly erect shrub or shrublet (occurring in Angola)..... ..... 1. *barbosae*

4) Leaf-lamina 1.2-3 cm × 0.5-1.5 cm. Lax shrub or shrublet, sometimes trailing, with usually twining branchlet tips (occurring in the Transvaal and eastern Bechuanaland)..... 5. *transvalicus*

N. B.: In the following enumeration full descriptions are omitted (except for the new species); they will be found in my treatment of *Malpighiaceae* in Flora Zambesiaca Vol. 2, p. 1, which is now in course of preparation.

1. **Sphedamnocarpus barbosae** Launert, spec. nov.

Frutex erectus usque ad 90 cm altus, e rhizomate robusti pluricipiti oriens, sparse divaricatus. Ramuli stricti, 2-5 cm diametro, cortice brunneo vel rubescenti obtecti, ± dense strigosi, tarde glabrescentes, laeves; internodia foliis oppositis breviora. Folia brevissime petiolata; laminae 5.5-9 × 2.3-3.75 cm, late lanceolatae usque oblongo-lanceolatae, apice subobtusae, apiculatae, basi cuneatae, subcoriaceae, utrinque latere glabrae vel juventute subtus strigosae, supra virides, subtus dilute virides vel glaucae, glandulis 2 circularibus, sessilibus, inconspicuis, marginalibus utrinque secus mediani prope apicem petioli affixis, margine integerrimae siccitate leviter involutae, costis secundariis utrinsecus mediani 4-7 supra non depressis et subtus prominulis percursae; petioli 2-3 mm longi; stipulae absentiae. Inflorescentiae strigosae, in apicibus ramulorum vel/et axillaribus quasi paniculam 10-15 cm longam amplam formantes, umbellis parcis 4-floribus compositae; bracteae bracteolaeque non suppetunt; pedicelli fructiferi usque ad 4 cm longi. Flores pentameri, actinomorphi. Sepala sub fructu 6-7 mm longa, oblonga, extus ± dense sericea. Petala delapsa. Stamina 10, glabra, aequalia; antherae ± 1.5 mm longae, oblongae, basi subcordatae; filamenta 3-4 mm longa, basi libera. Ovarium densissime sericeum; styli 3, ± 5 mm longi. Samarae 2-3, 18-24 mm longae; ala juventute dense sericea, in statu maturo leviter strigosa vel glabra, rubescens, oblique obovata, apice obtusa, basi 8-10 mm, superne 11-13 mm lata, margine integra vel levissime irregulariterque sinuosa.

Nova haec species clarissimo exploratori florae Angolensis et excellentissimo collectori *G. Barbosa* dedicata.

DISTR.: **Angola**, Bailundo prope Nova Lisboa, 26.iii.1960, legit *G. Barbosa & R. Correia* 8889 (LUA, holotypus); Nova Lisboa, 17.v.1937, leg. *L. W. Carrisso & F. Sousa* 67a (BM; COI; LISC) [This specimen is mentioned in Exell & Mendonça, Consp. Fl. Angol. **1**: 253 (1951) as *Sphedamnocarpus* sp. and supposedly new, but it could not then be described because of its incompleteness]. See Tab. V.

HABITAT: Open woodland.

A. barbosae is doubtless closely related to *A. angolensis;* it may be keyed out from that species as follows:

angolensis	*barbosae*
Leaves of the main stem usually ternate (see key); leaf-lamina 3.5-6 × 1.5-2.5 cm, always rounded at the base, densely sericeous-tomentose, rarely glabrescent on the upper surface; trabecules of the hairs of the leaf-lamina up to 1.6 mm long.	Leaves always opposite; leaf-lamina 5.5-9 × 2.3-3.5 cm, cuneate at the base, glabrous or only somewhat strigose on both surfaces; trabecules of the hairs of the leaf-lamina up to 1.9 mm long.

2. **Sphedamnocarpus angolensis** (A. Juss.) Planch. ex Oliv., F. T. A. **1**: 279 (1868). — Hiern, Cat. Afr. Pl. Welw. **1**: 104 (1896) — Niedenzu in Arb. Bot. Inst. Akad. Braunsb. **6**: 48 (1916); in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 17 (1924); in Engl., Pflanzenr. IV, 141: 255 (1928) — Burtt Davy Man. Fl. Pl. & Ferns Transv. **2**: 284 (1932). — Exell in Journ. of Bot. **65**, Suppl Polypet.: 51 (1927). — Gossweiler & Mendonça, Carta Fitogeogr. Angola: 160, 161 (1939). — Arènes in Notul. Syst. **11**: 121 (1943) — Exell & Mendonça, C. F. A. **1**: 252 (1951).

Typus: Angola: Cuanza Norte, Lopolo, *Welwitsch* 1043 (COI, holotype; BM; K).

Acridocarpus (?) *angolensis* A. Juss. in Ann. Sci. Nat. Bot. Sér. 2, **13**: 272 (1840); in Archiv. Mus. Hist. Nat. Par. **3**: 490 (1843). Type as above.

Sphedamnocarpus pulcherrimus Engl. & Gilg. in Warb., Kunene-Samb. Exped. Baum: 272 (1903). Typus: Angola (Bié, *Baum* 588 B †; BM; K).

Sphedamnocarpus angolensis var. *pulcherrimus* (Engl. & Gilg) Niedenzu in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 17 (1924); in Engl., Pflanzenr. IV, 141: 255 (1928). Type as above.

DISTR.: Angola (Benguela, Bié and Huila), Northern Rhodesia, Southern Rhodesia, Nyasaland, Transvaal (See Tab. V).

Selected citation of specimens examined:

ANGOLA: See Consp. Fl. Angol. **1**: 252 (1951) for specimens.

NORTHERN RHODESIA: Barotse Distr., Sesheke, *Angus* 1001 (FHO; K); *Borle* in Nat. Herb. Pret. 28709; Batoka Plateau, *Allen* 444 (K; SRGH); Abercorn, *Merkel* (BM); Mapanza, *Robinson* 1346 (SRGH); Katomo, *Rogers* 8233 (K; SRGH).

SOUTHERN RHODESIA: Goromonzi, *Jack* 16235 (SRGH); Matobo, *Miller* 4363 (SRGH); *Eyles* 108 (BM); *Plowes* 1409 (SRGH); *Cheesman* 81 (BM); Bulawayo, *Rogers* 13095 (K); *Eyles* 96 (SRGH); *Saunders Davies* 29.i.1934 (BM); Near Salisbury, *Cecil* 145 (K); Salisbury, *Eyles* in Nat. Herb. Pret. 35942 (PRE); *Penny* 5726 (SRGH); *Godman* 188 (BM); *Brain* 8383 (SRGH); *Pardy*, 8.ii.1950 (SRGH); *Rand* 1405 (BM); *Stent* 5630 (SRGH); *Arnold* 9514 (SRGH); Marandellas, *Rattray* 809 (K; SRGH); *Stent & Rattray* 3653 (SRGH) & 3652 (PRE); *Newton* 69 (SRGH); *Corby* 301 (K; PRE; SRGH); Plumtree, *Flanagan* 3181 (PRE). Victoria, *Monro* 781 (BM); Nyamandlhovu, *West* 3180 (K; SRGH); Gwampa Vley, *Goldsmith* 33/54 (SRGH); Rusape, *Hopkins* 7043 (K; SRGH); Odzani River Valley, *Teague* 349 (K).

NYASALAND: Lilongwe, *Jackson* 2153 (SRGH).

TRANSVAAL: Pretoria, *Meeuse* 9241 (K; PRE; SRGH). South African Goldfields (Sand Spruit?), *Baines* 31.v.1871 (K).

Note: As to *S. pulcherrimus* ENGLER & GILG (l. c.) indicate, «die neue, sehr schoen bluehende Art ist verwandt mit *Sphedamnocarpus angolensis*», but they do not discuss the differences. After NIEDENZU (l.c.) *S. pulcherrimus* differs from «typical» *S. angolensis* by «Folia e basi rotunda vel subcordata oblonga vel ovali- s. lanceolato-oblonga, apice obtuso vel retuso, apiculata, usque 5 cm longa et 2 1/3 cm lata, supra demum subglabrata». All these characters are to be found within the range of variability of *S. angolensis*. The type-specimen of *S. pulcherrimus* (*Baum* 588) belongs to one of the few gatherings which have the leaves arranged pseudoalternately.

3. **Sphedamnocarpus pruriens** (A. Juss.) Szyszyl., Polypet. Discifl. Rehm.: 2 (1888). — Niedenzu in Arb. Bot. Inst. Akad. Braunsb. **6**: 49 (1915); in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 18 (1924); in Engl. Pflanzenr. IV, 141: 257 (1928). — Burtt Davy, Man. Fl. Pl. Ferns Transv. **2**: 284 (1932). — Arènes, Notul. Syst. **11**: 119 (1943). Type from Natal.

Banisteria pruriens E. Mey. ex Drège, Cat. Pl. Exsicc. Afr. Austr.: 19 (1838) nom. nud.

Acridocarpus (?) *pruriens* A. Juss., Malpigh. Synops.: 272 (1840); in Archiv. Mus. Par. **3**: 492 (1843). — Sond. in Harv. & Sond., Fl. Cap. **1**: 232 (1860). Type as above.

Sphedamnocarpus pruriens f. (I) *longipedunculatus* Niedenzu in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 18 (1924); in Engler, Pflanzenr. IV, 141: 257 (1928).

Sphedamnocarpus pruriens f. (III) *brevipedunculatus* Niedenzu in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 18 (1924).

Sphedamnocarpus pruriens var. *platypterus* Arènes in Notul. Syst. **11**: 120 (1943).

Syntypes: Mozambique, Delagoa Bay, *Junod* 497 (P?) and Lourenço Marques, *Borle* 350 (SRGH).

As is typical for climbing plants, for plants with a wide distribution and for savanna plants *S. pruriens* shows a very wide range of variation especially in the shape and size of the leaves (see Tab. III-IV), but there are more characters such as the length of internodes and the size and shape of the samara-wings. In the past when botanists based their taxa on a few or sometimes only on a single specimen, several species or infraspecific taxa were described which cannot be maintained after examining the great amount of material now available. The first difficulty arises in distinguishing between *S. angolensis* and *S. pruriens*. The first species is based on a specimen from Angola; *S. pruriens* on a gathering from Natal. *S. angolensis* has its centre of distribution in Southern Angola (see Tab. V) and extends to Northern and Southern Rhodesia and to the northern parts of Transvaal and Nyasaland, whilst *S. pruriens* occurs from Mozambique to the Transvaal, Bechuanaland, the northern parts of South West Africa and Southern Rhodesia and the extreme south of Nyasaland. At the centres of their distributions both the species are easily recognisable by their habit alone (see key) but in the regions where the areas overlap there are specimens that show characters of both species. These may represent hybrid swarms. My colleague B. DE WINTER suggested that both species should be regarded only as subspecies or varieties of one single species. I cannot follow his view, and I think we must regard both species as quite distinct when taking into consideration the combination of characters

(given in the key) which separate them. Further field studies may elucidate the possible hybrid nature of the transitional forms mentioned.

Within *S. pruriens* it is impossible to maintain the infraspecific taxa of NIEDENZU and ARÈNES. The characters on which they were based can often be seen on a single gathering. Studying the material available I came to the conclusion that only two varieties — formely regarded as species — can be maintained, and even these are very often only recognisable in their typical forms as shown in Tab. III and IV; 1 + 2.

1) Leaf-lamina glabrous or glabrescent on the upper surface, ovate, subcircular, or ovate-oblong, rarely elliptic, apex obtuse to acute, base cordate or rounded 2
   2) Leaf-lamina subcircular, ovate-elliptic, ovate-oblong or elliptic, apex obtuse sometimes slightly retuse, apiculate, coriaceous . . . . . var. *pruriens*
   2) Leaf-lamina ovate, rarely ovate-elliptic, apex acute or subacute, apiculate, subcoriaceous to stiffly herbaceous . . . . . var. *latifolius*

1) Leaf-lamina on the upper surface tomentellous or arachnoid, very rarely glabrescent (only older ones), lanceolate, rarely ovate-lanceolate, apex acute, base rounded to broadly cuneate . . . . . var. *lanceolatus*

var. **pruriens**

DISTR.: Natal, Mozambique, Transvaal, northern South West Africa, Bechuanaland, Southern Rhodesia, Nyasaland (see Tab. VI).

Selected citation of specimens studied:

NATAL: Port Natal, *Gueinzius* 391 & 139 (S); *Drège* s. n. (K; S); *Gueinzius* s. n. (BM; K); *Harvey* s. n. (1840) (K); without precise locality, *Sutherland* s. n. (K); *Plant* 70 (BM; K; S); Lower Tugela, *Edwards* 1898 (K). Magut, *Gerstner* 4592 (K) — this specimen is different from all the others by having a very dense velvety indument on the leaf-lamina which does not

seem to disappear on the upper surface; Durban, *M. Wood* 274 (BM); Inanda, *M. Wood* (BM); Zululand, *Gerrard* 66 (BM).

MOZAMBIQUE: Lourenço Marques, *Torre* 7355 (LISC); *Sousa* 83 (LISC; PRE); *Barbosa & Lemos* 8260 (LISC; SRGH); *Borle* 350 — Typus of var. *platypterus* Arènes — (SRGH) & 967 (SRGH). Manica e Sofala, *Torre* 4253 (LISC); *Pedro & Pedrógão* 5759 (SRGH); *Barbosa* 1132 (BM; LISC) & 1225 (BM; LISC); Chipinga, *Hack* 67/50 (SRGH); Mount Maruma, *Swynnerton* 1759 (BM); Morrumbala, *Barbosa & Carvalho* 3059 (LISC; LUA; SRGH); *Torre* 5229a (LISC).

SWAZILAND: Hlatikulu, *Stewart* 80 (K).

TRANSVAAL: Pretoria, *Rehmann* 4194 (BM); *von Wickerk & Wasserfall* 62 (PRE); *Mogg* 12315 (PRE); Rustenburg, *Rogers* 2344 (K); *Sutton* 825 (K; PRE; SRGH); *Pegler* 1110 (PRE); Barberton, *Williamson* 275 (PRE); *M. Wood* 4169 (K); *Buchanan* 27 (K); Nelspruit, *Rogers* 21020 (K); Naboomspruit, *Galpin* 47 (PRE); Waterberg, *Codd* 8458 (PRE); *Meeuse* 9082 (PRE); Krueger Nat. Park, *Schyff* 2141 (K); Lydenburg, *Galpin* 13282 (K); Pietersburg, *Bolus* 11022 (K; PRE); Belfast, *Smuts* 298 (K); Makapansberg, *Rehmann* 5493 (K); Without precise locality, *Brueckner* 476 (PRE; SRGH); *Sanderson* s. n. (K).

SOUTH WEST AFRICA: Caprivi strip, *Leistner & Killick* 3183 (K; M; PRE); Okavango Native Territ., *de Winter & Marais* 4713 (K; PRE); Otavi, *Dinter* 5550 (PRE); Grootfontein Nord, *Merxmüller* 1814 (BM; K; M); Grootfontein, *Schoenfelder* 564 (PRE); *Story* 6363 (PRE); *de Winter* 2854 (PRE); Kangongo, *de Winter & Wiss* 4450 (PRE); Damaraland, *Een* s. n. (BM).

BECHUANALAND PROTECTORATE: Mochudi, *Rogers* 6489 (K); Gaberones, *van Son* 28943 (BM; K; PRE; SRGH); Kgatla (?), *Reineke* 39A (PRE); Molepolole, *Story* 4874 (K; PRE). Kanye, *Miller* B 1282 (PRE).

SOUTHERN RHODESIA: Shamva, *Eyles* 2247 (SRGH); Matobo, *West* 2899 (SRGH); *Miller* 1421 (SRGH); Filabusi, *Davies* 133 (SRGH); Bubi, *Goldsmith* 30/54 (K; SRGH). Bulawayo, *Rand* 431 (BM); Plumtree, *Davies* 535 (SRGH); Premier Mine, *Martineau* 243a (SRGH); Bulalima-Mangwe, *Feiertag* 45558 (K; SRGH); Marandellas, *Stent* 5449 (PRE; SRGH); Mt. Silinda, *Hack* 40 (SRGH); Melsetter, *Swynnerton* 211 (BM; K); Umtali, *Chase* 2126 & 193 (BM; K; SRGH); Lundi Drift, *Smuts* in Nat. Herb. Pret. 28708 (K; PRE); Lundi River, *Hutchinson & Gillett* 3290 (BM; K).

NYASALAND: Isonge Hill, *Banda* 91 (K).

var. **latifolius** Engler in Bot. Jahrb. **36**: 249 (1905).

Syn.: *Sphedamnocarpus latifolius* (Engler) Niedenzu in Arb. Bot. Inst. Akad. Braunsb. **6**: 48 (1915); in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 17 (1924); in Engler, Pflanzenr. IV, 141: 256 (1928).— Burtt Davy, Man. Fl. Pl. & Ferns Transv. **2**: 284 (1932).— Arènes in Notul. Syst. **11**: 120 (1943).

Typus variet.: Transvaal, am grossen Wasserfall bei Lydenburg, *Wilms* 145 (B †; BM, lectotypus).

DISTR.: Natal, Mozambique, Transvaal (see Tab. V).

Selected citation:

NATAL: Without precise locality. *Gerstner* 4592 (PRE).

MOZAMBIQUE: Lourenço Marques, Goba, *Barbosa & Lemos* 8260 (BM; LISC; SRGH); *Sousa* 4219 (PRE).

TRANSVAAL: Barberton, *Holt* 43 & 50 (PRE); Pilgrims Rest, *Strey* 3331 (PRE); Pretoria, *Rensburg* s. n. (PRE); Lydenburg, *Wilms* 145 (BM; K); Pigg's Peak, *Compton* 27640 (PRE); Nelspruit, *Codd* 5195 (K; PRE); Rustenburg, *van Dam* 30252 (PRE); Houtboshberg, *Schlechter* 4413 (BM).

Note: ARÈNES regarded *S. latifolius* as a distinct species. From the other species (*S. angolensis* and *S. wilmsii*) he keyed it out as follows (see op. cit. pag. 106): «Feuilles adultes à la fin soyeuses-tomenteuses ou velues-cendrées sur les deux faces, plus faiblement en dessus». This applies very well to the two remaining species, but not to *S. latifolius;* it can be shown that the upper surface of the leaf-lamina is glabrescent, even in the type-specimen. *S. pruriens* var. *latifolius* differs from the typical variety in being much more slender and more delicate as well as in its leaf-shape. As to the leaf-shape the question arises whether our taxon might not be a natural hybrid between *S. pruriens* var. *pruriens* and *S. galphimiifolius*

subsp. *rehmannii*. This supposition would be strengthened by the fact that both taxa cover about the same area (compare maps of the Tab. VI and VII).

var. **lanceolatus** Launert, var. nov.

Syn.: *Sphedamnocarpus wilmsii* Engler in Bot. Jahrb. **36**: 249 (1905); Arènes in Notul. Syst. **11**: 120 (1943); Burtt Davy, Man. Fl. Pl. & Ferns Transv. **2**: 284 (1932).

Typus: Transvaal, Distr. Lydenburg, beim grossen Wasserfall, *Wilms* 142 (B †; BM; K).

Sphedamnocarpus pruriens forma (II) *wilmsii* (Engler) Niedenzu in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 18 (1924); in Engler, Pflanzenr. IV, 141: 257 (1928). Typus as above.

Typus variet.: Southern Rhodesia; Matopos, fl. 14.xii.1912, *Rogers* 5651 (BM, holotypus; K; PRE; SRGH).

DISTR.: Southern Rhodesia, Northern Transvaal (see Tab. VI).

TRANSVAAL: Lydenburg, *Galpin* 12175 (PRE); *Jenkins* 10324 (PRE); *Wilms* 142 (B; BM; K); Pietersburg, *Gerstner* 5351a (SRGH); Hekpoort, *Cohen* 1103 (PRE); Rustplaats, *Taylor* s. n. (PRE).

SOUTHERN RHODESIA: Darwendale, *Eyles* 702 (BM; PRE; SRGH); Shamva, *Mainwaring* 2247 (PRE); Melsetter, *Williams* 82 (SRGH); Matopos, *Rogers* 5263 (K) & 5651 (BM; K; PRE; SRGH); *Galpin* 6951 (PRE); *Gourley* 121 (K; SRGH); *Greatrex* 14774 (K; SRGH); *West* 2164 (K; PRE; SRGH); *Exell, Mendonça & Wild* 1494 (BM; SRGH); *Miller* 1693 (SRGH); Bubi, *Keay* 21201 (K; SRGH); Besna Kobila, *Miller* 3460 (PRE); Que Que, *Mc Leod* 49 (K; PRE); Marandellas, *Dehn* 85 (BM; SRGH); Bulawayo, *Keay* 133 (FHO).

Note: This variety is characterised essentially by the shape of the leaf-lamina as expressed in the key and demonstrated in Tab. IV, 2. ARÈNES' key characters (comp. op. cit. pag. 106) «Sépales aigus au sommet. Limbe des pétales fimbrié inférieurement, contracté en court onglet. Anthères ovales. Limbe foliaire oblong-lancéolé, aigu.» are within the range of variability of the whole species (it seems to me that he had not seen a single specimen). BURTT DAVY (l. c.) keyed out *S. wilmsii* by its fimbriate petals; this cannot be confirmed, but on the other hand the occurrence of fimbriate petals is not unusual in this genus. Generally the flowers do not provide any character on which a classification can be based. I have notchosentheepithet *wilmsii* for the variety as I wish to base the latter on better type material.

4. **Sphedamnocarpus galphimiifolius** (A. Juss.) Szyszyl., Polypet. Discifl. Rehm.: **2** (1888) — Niedenzu in Arb. Bot. Inst. Akad. Braunsb. **6**: 49 (1915); in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 18 (1924); in Engler, Pflanzenr. IV, 141: 256 (1928) — Burtt Davy, Man. Fl. Pl. & Ferns Transv. **2**: 284 (1932) — Arènes in Notul. Syst. **11**: 118 (1943).

Typus: Mossambique, Delagoa Bay, *Forbes* (K).

Syn.: *Acridocarpus galphimiifolius* A. Juss. in Archiv. Mus. Par. **3**: 491 (1843).— Sonder in Harv. & Sonder, Fl. Cap. **1**: 232 (1860). Typus as above.

Acridocarpus pruriens var. *laevigatus* Sonder in Linnaea **23**: 22 (1850).

Typus variet.: Natal, *Gueinzius* 396 (K).

Sphedamnocarpus woodianus Arènes in Notul. Syst. **11**: 118 (1943).

Typus: ARÈNES has not designated a type; he cites: Zululand, *Gerrard* et *M'Ken* 1788; Natal, Nanoti, *J. Medley Wood* 8921. I have seen only the specimen *Gerrard* 1788 (K).

DISTR.: Natal, Transvaal, Mozambique, Southern Rhodesia (see Tab. VII).

S. galphimiifolius is a species with the leaves varying greatly in shape and size but with transitional forms linking all the extremes in such a way that it is very difficult to make infra-specific units. The only two distinct taxa I can recognise are the subspecies keyed out below. In the past some species

now included here were based on the position of the leaf-lamina (see Arènes op. cit. pag. 106 & Burtt Davy l. c.). More material available proves this to be a very untrustworthy character, as the glands sometimes occur near the apex of the petiole, or sometimes at the lower margin of the lamina. Glands may even be found in the same gathering in both of these positions, the position even being dependent on the state of development of the leaf itself.

S. woodianus was characterised by Arènes as follows, «Plante affine aux *S. galphimiifolius* et *S. pruriens* dont elle se distingue surtout par sa tendance très marquée à noircir à la dessiccation, par la brièveté des entrenoeuds rameaux, par la morphologie foliaire (forme, nervation, bords fortement révolutés), par la répartition de l'indument sur les feuilles adultes».

It seems that he based his species on a very stunted specimen and did not see any more material. The leaf-margin is usually revolute in dried material of *S. galphimiifolius;* the length of the internodes is variable in a way that it cannot be used at all for a classification. Moreover, the indumentum disappears on older leaves of nearly all specimens which I have studied.

The characters which were used to separate *S. rehmannii* from *S. galphimiifolius* are not important enough to maintain it as a distinct species. Besides the leaf-shape I could not find any other separating character, and as mentioned above there are many transitional forms which make it very difficult to distinguish between these taxa.

The only two subspecies which can be recognised may be keyed out as follows:

1) Leaf-lamina lanceolate or ovate-lanceolate, base cuneate rarely rounded; glands usually on the insertion of the petiole or on the lower margin of the lamina, rarely in the upper half of the petiole..... subsp. *galphimiifolius*
1) Leaf-lamina ovate, base subcordate or rounded; glands usually on the lower margin (usually near the insertion of the petiole)..... subsp. *rehmannii*

subsp. **galphimiifolius**

DISTR.: Natal, Swaziland, Transvaal, Mozambique, Southern Rhodesia (see Tab. VII).

Selected citation:

NATAL: Estcourt, *Codd* 2462 (PRE); Weenen, *Acocks* 10138 (PRE); Hlabisia, *Ward* 1845 (PRE); Nanoti, *Gerrard* 1788 (K).
SWAZILAND: Stegi, *Compton* 2662a (PRE).
TRANSVAAL: Waterval Boven, *Mason* 97 (K); Wylies Poort, *Gerstner* 5869 (PRE); Springfield, *Wood* 13069 (PRE).
MOZAMBIQUE: Delagoa Bay, *Forbes* s. n. (K); Namaacha, *Pedro & Pedrógão* 760 & 777 (LISC); *Gomes & Sousa* 431 (K); Goba, *Myre & Balsinhas* 648 (LISC).
SOUTHERN RHODESIA: Matobo, *Miller* 2665 (SRGH) & 2202 (K; SRGH) & 3461 (PRE) & 1491 (K; SRGH); *Hopkins* 7933 (BM); *Exell, Mendonça & Wild* 1495 (BM; SRGH); *Gibbs* 281 (K; BM); Bulawayo, *Chubb* 46 (BM; SRGH); Umtali, *Chase* 3617 (BM; SRGH); Victoria *Monro* 875 (BM).

subspec. **rehmannii** (Szyszyl.) Launert, stat. nov.

Syn.: *Sphedamnocarpus rehmannii* Szyszyl., Polypet. Discifl. Rehm.: 3 (1888). — Niedenzu in Engler, Pflanzenr. IV, 141: 257 (1928). — Burtt Davy, Man. Fl. Pl. & Ferns Transv. **2**: 284 (1932). — Arènes in Notul. Syst. **11**: 117 (1943).
Sphedamnocarpus rogersii Burtt Davy, op. cit. **1**: 50 (1926); op. cit. **2**: 284 (1932). — Arènes tom. cit. **11**: 118 (1943). Typus: Transvaal; Pietersburg Distr., Modjajes, *Rogers* 18041 (K).

Typus subspeciei: Transvaal, Houtbosh, *Rehmann* 6390 (BM; K).

DISTR.: (see Tab. VII).

TRANSVAAL (Selected citation): Lydenburg, *Galpin* 13282 (PRE); *Atherstone* xii.1873 (?) (K); Pilgrims Rest, *Galpin* 14406 (SRGH); *Smuts & Gillett* 2339 (PRE); *Rodin* 4065 (K); Soutpans-

berg, *Hutchinson* 1988 (K); *Codd* 8335 (K; SRGH) & 6911 — 3 miles N. E. of Sibasa — (K; SRGH); *Meeuse* 9754a (SRGH); Nelspruit, *Liebenberg* 2385 (K); *Story* 1879 (PRE); Houtbosh, *Rehmann* 6390 (BM; K); Modjadjes, *Rogers* 18041 (K); Pietersburg, *Codd* 8409 (K; SRGH); *Mogg* 429 (SRGH); *Meeuse* 9916 (PRE; SRGH).

5. **Sphedamnocarpus transvalicus** (Kuntze) Burtt Davy, Man. Fl. Pl. & Ferns Transv. **1**: 50 (1926); op. cit. **2**: 284 (1932). — Arènes in Notul. Syst. **11**: 118 (1943) in syn.

Typus: Transvaal, Pretoria, fl. 17.ii.1894, *O. Kuntze* s. n. (K).

Syn.: *Triaspis transvalica* Kuntze, Rev. Gen. Pl. **3**: 29 (1893). — Niedenzu in Engler, Pflanzenr. IV, 141: 256 (1928) in syn.

DISTR.: Transvaal and Bechuanaland (see Tab. VII).

Selected citation of material studied:

TRANSVAAL: Pretoria, *Acocks* 11301 (SRGH); *Meeuse* 9133 (K); *Dyer* in Nat. Herb. Pret. no. 28915 (K; PRE); *Repton* 256 (PRE); *Kuntze* 17.ii.1894 (K); Boshveld, Pinaarsriver, *Rehmann* 4790 (BM; K); Rustenburg, *Hutchinson* 2942 (BM; K); *Acocks* 18739 (K); *Nation* 100 (K); Magaliesberg, *Rand* 1264 (BM); Palalariver, *Breyer* 18047 (PRE). Waterberg, *Rogers* 24997 (K); Erasmus, *Repton* 1216 (PRE); Meintjes Kop, *Pole Evans* 358 (PRE); Naboomspruit, *Galpin* s. n. (PRE); Potchefstroom, *Louw* 1483 (K); Without precise locality, *Conrath* 64 (K); *Mogg* 14797 (K; PRE); *Nelson* 365 (K); *Schlechter* 4079 (BM; K).

BECHUANALAND: Kanye, *Miller* B/455 (PRE) & B/978 (K; PRE).

Note: In spite of the treatment of *S. transvalicus* by NIEDENZU (l. c.) and ARÈNES (l. c.) there is no doubt that our taxon has to be regarded as a distinct species closely related to *S. galphimiifolius*. It always has a distinct shrubby habit as expressed out in the key. The main differences are as follows:

transvalicus	*galphimiifolius*
Leaf-lamina 1.2-3 × 0.5-1.5 cm, usually with the apex subobtuse or sometimes acute.	Leaf-lamina 2-6.5 × 0.7-3.5 cm, with the apex always acute.
Petioles 0.2-0.7 cm long.	Petioles 0.5-1.7 cm long.
Wing of the samara broadly ovate, extending to the base of the nut.	Wing of the samara oblong or oblong-obovate, not extending to the base of the nut (or only as a small rim).

IV. NOTES ON *CAUCANTHUS* FORSK. AND ITS DISTRIBUTION

1. **Caucanthus edulis** Forsk., Fl. Aegypt.-Arab.: CXI, 91 (1775).

Syn. nov.: *Tristellateia somalensis* Chiov., Result. Sc. Miss. Stephani Paoli Somal. Ital. **1**: 37 (1916). — Niedenzu in Engler, Pflanzenr. IV, 141: 66 (1928).

Typus: Somaliland, Bosaglia presso Mogadiscio, *Paoli & Stephanini* 82 (FI).

N. B.: *Chiovenda* based this species on a sterile specimen. The plant is without any doubt *C. edulis*.

Tristellateia africana var. *somaliensis* (Chiov.) Arènes in Mém. Mus. Nation. Hist. Nat. Par. n. sér. **21**: 312 (1947). — Cufod. in Bull. Jard. Bot. Bruxelles, **26**, Suppl.: 404 (1956).

Typus variet. as for the spec. above.

The complete synonymy is given by NIEDENZU (1928).

2. **Caucanthus albidus** (Niedenzu) Niedenzu in Engler, Pflanzenr. IV, 141: 36 (1928).

Syn. nov.: *Caucanthus argenteus* Chiovenda, Fl. Somala **2**: 41 (1932) non Niedenzu (1904).

Typus: Somaliland; Isna (?) di Osbsada, fl. 21. vii.1929, *Senni* 341 (FI).

Diaspis scandens Chiov. in schedul.

Note: In designating his types CHIOVENDA has caused some confusion.
In Herbarium FI there are two gatherings seen by him:

a) *Senni* 805, labelled as *Diaspis scandens* as well as *Caucanthus argenteus* and provided with a type-label.
b) *Senni* 341 with the original label *Diaspis scandens* Chiov. and an attached label *Caucanthus argenteus* Chiov., spec. nov.; this sheet is also provided with a type-label.

Caucanthus chiovendae Cufod. in Bull. Jard. Bot. Bruxelles, **26**, Suppl.: 403 (1956).
Typus as for *C. argenteus* Chiov.

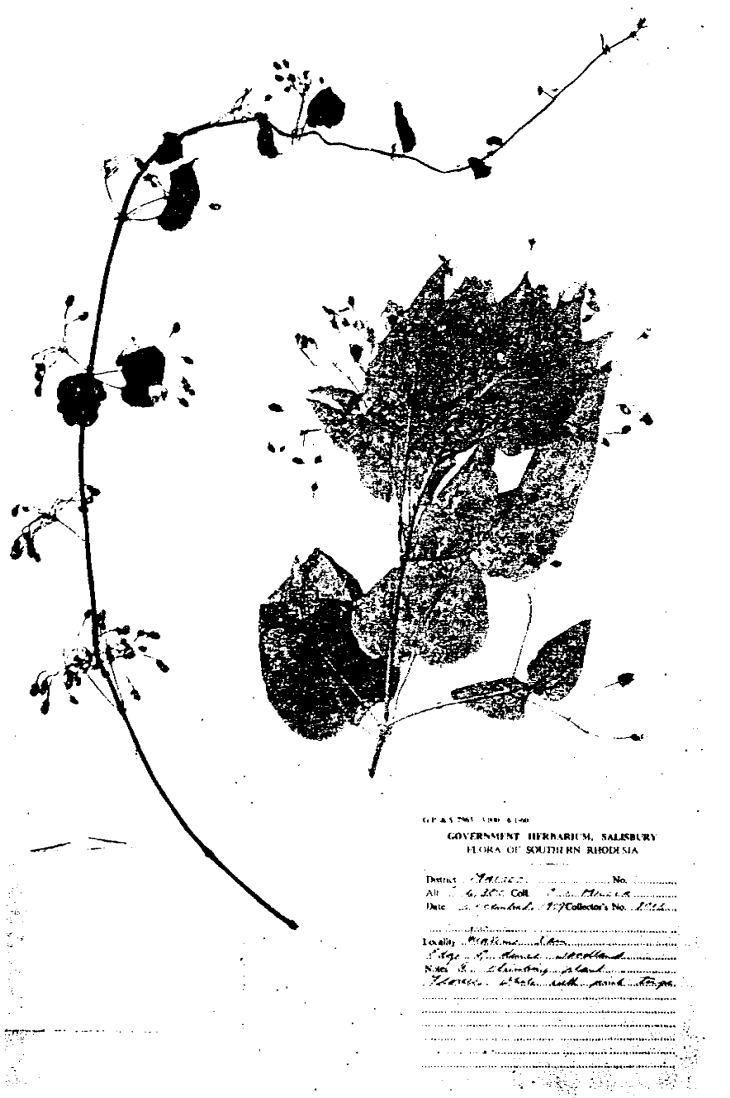
Full synonymy and descriptions will appear in my treatment of *Malphighiaceae* in Fl. Trop. East Afr. which is now in course of preparation.

3. **Caucanthus auriculatus** (Radlk.) Niedenzu in Arb. Bot. Inst. Akad. Braunsb. **6**: 18 (1915); in Verz. Vorl. Akad. Braunsb. S.-Sem. **1924**: 2 (1924).

Syn. nov. (?): *Caucanthus cinereus* Niedenzu in Bull. Herb. Boiss. sér. 2, **4**: 1011 (1904).
Typus: «British Ostafrika», *Alfred Kaiser* (B †).

Unfortunately the type specimen of *C. cinereus* was destroyed by war action in Berlin. The differentiating characters given by NIEDENZU (in Engler, Pflanzer. IV, 141: 34 (1928) can sometimes be found in a single specimen of *C. auriculatus*. Due to its wide distribution and its climbing habit *C. auriculatus* shows a great amount of variation, but in such a way that the morphological extremes occur simultaneously in specimens from the extreme North-South extensions of the great area covered by the species (see Tab. V).

The genus *Caucanthus* is thus represented by three well-defined species. The centre of its distribution lies in N.E. Tropical Africa (see Tab. V); only one species extends southwards. The area of distribution of *C. auriculatus* shows a remarkable gap which isolates the localities in Mozambique from the East African ones. It is interesting to note that this gap similarly occurs for two other species of African *Malphighiaceae: Tristellateia africana* S. Moore, as shown in Tab. VII, and *Triaspis mozambica* A. Juss., a species which will be discussed in a later paper.

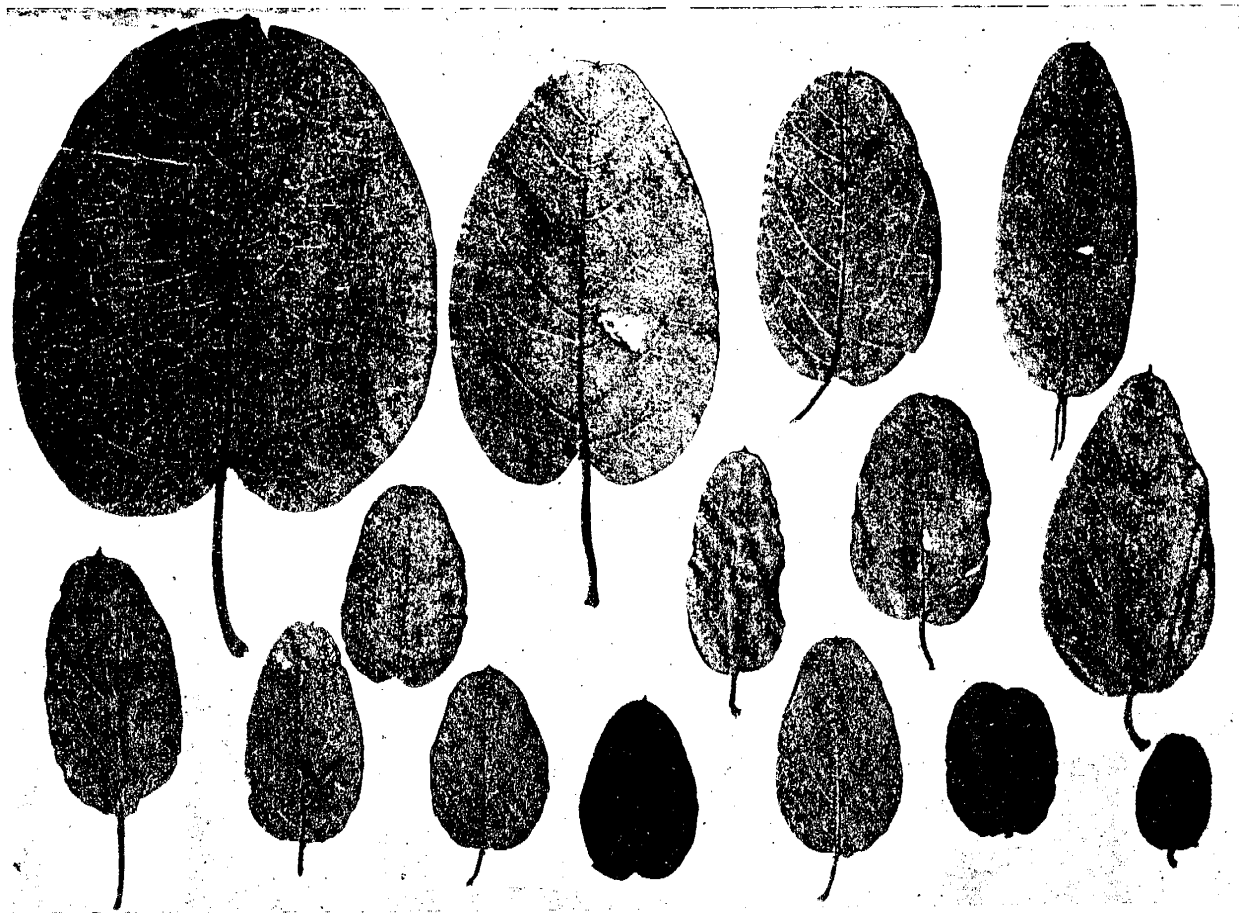


Photograph of *Triaspis dumeticola* Launert

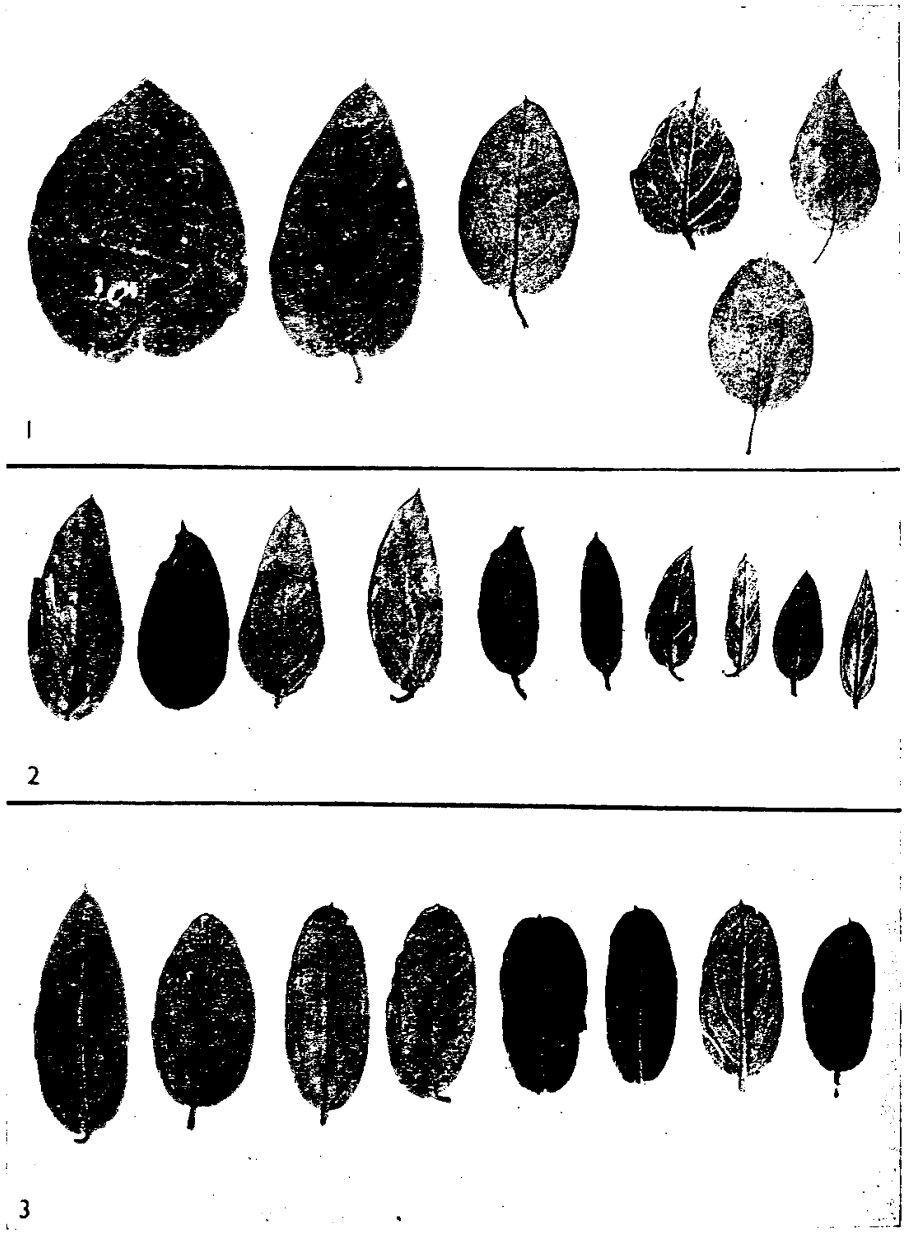
Photograph of *Acridocarpus natalitius* var. *linearifolius* Launert

TAB. II

TAB. III

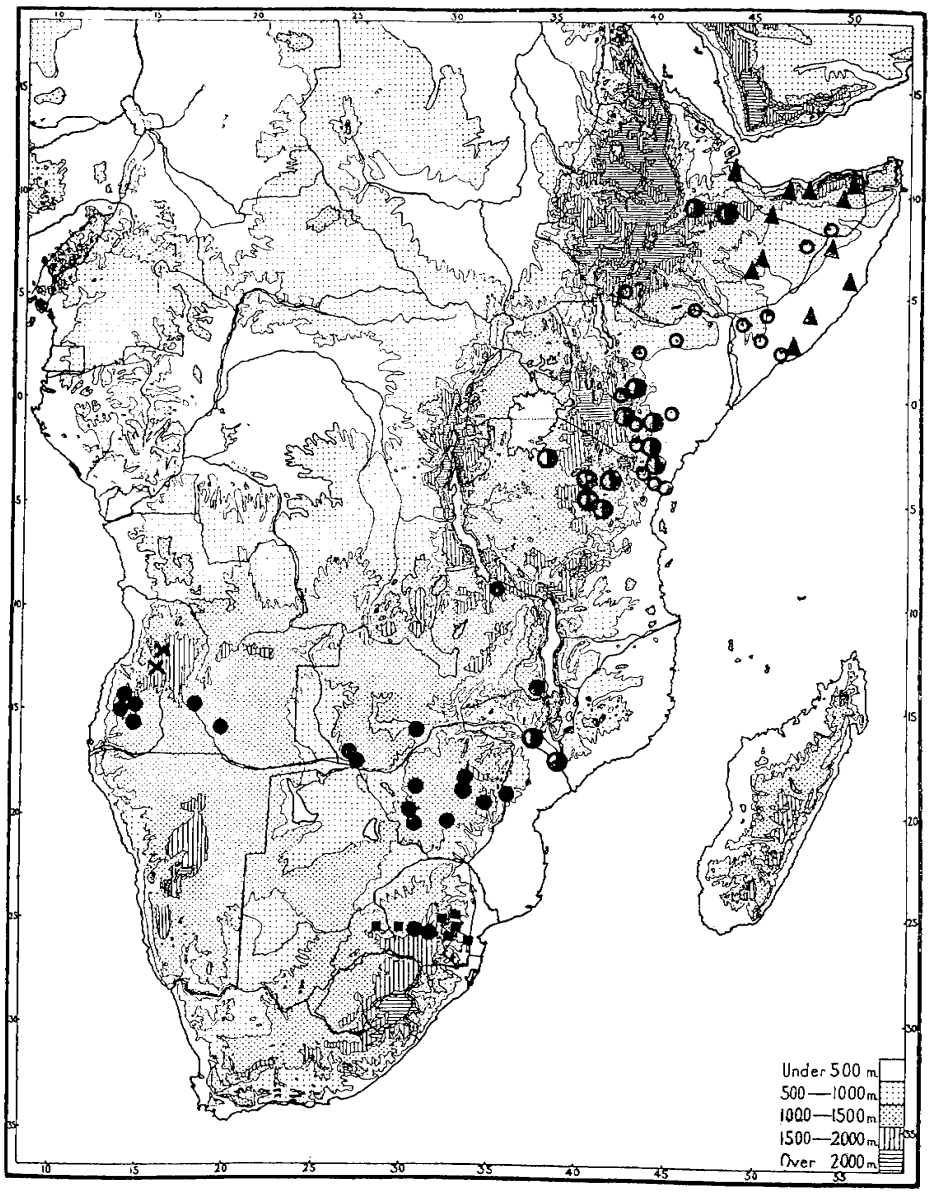


Photograph showing the leaf-variation in *Sphedamnocarpus pruriens* (A. Juss.) Szyszyl. var. *pruriens*



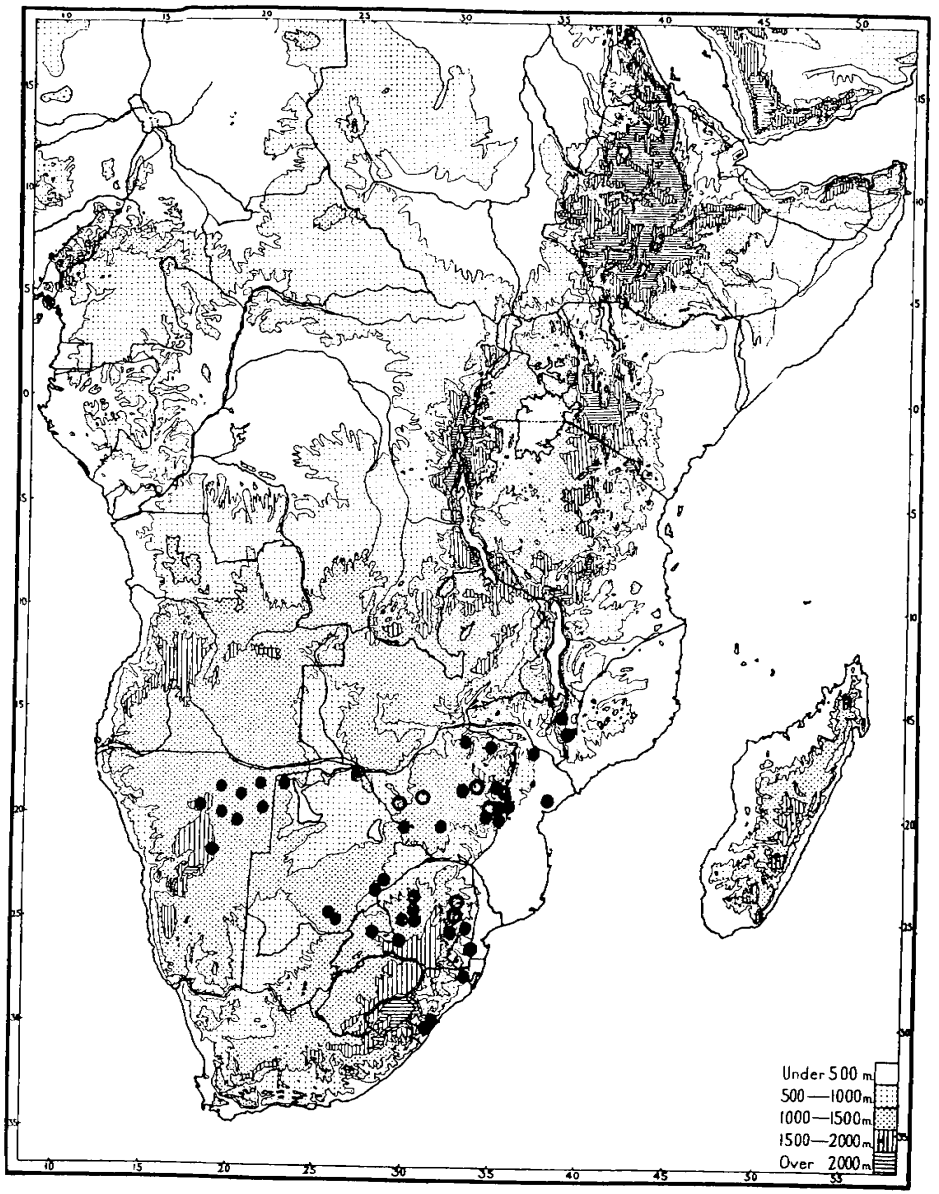
Photograph showing the leaf-variation in

1) *Sphedamnocarpus pruriens* var. *latifolius* Engler
2) *Sphedamnocarpus pruriens* var. *lanceolatus* Launert
3) *Sphedamnocarpus angolensis* (A. Juss.) Planch.



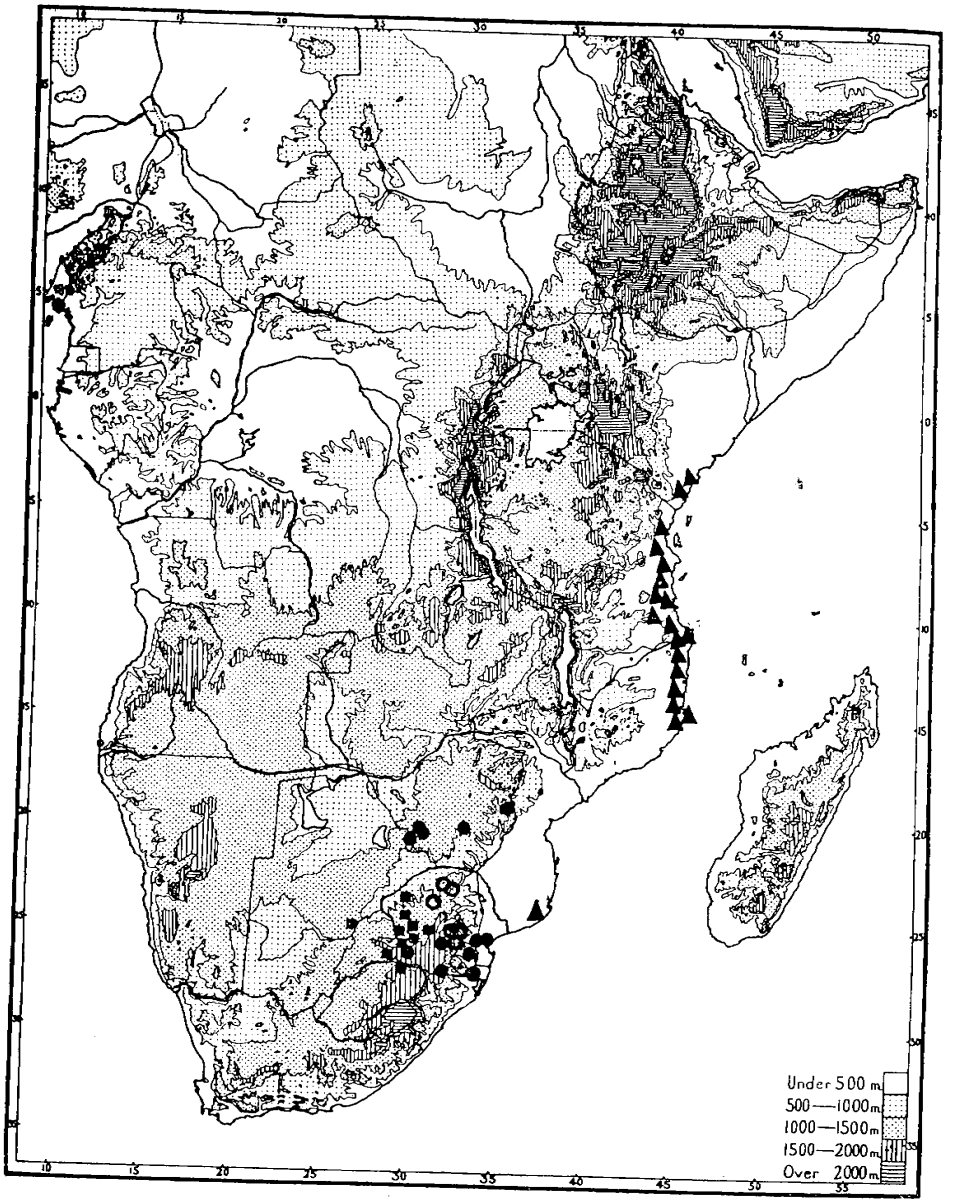
Map showing distribution of

- ■ *Sphedamnocarpus pruriens* var. *latifolius* Engler
- ● *Sphedamnocarpus angolensis* (A. Juss.) Planch.
- × *Sphedamnocarpus barbosae* Launert
- ○ *Caucanthus albidu* Niedenzu
- ▲ *Caucanthus edulis* Forsk.
- ◑ *Caucanthus auriculatus* (Raldk.) Niedenzu



Map showing distribution of

- ● *Sphedamnocarpus pruriens* (A. Juss.) Szyszyl. var. *pruriens*
- ○ *Sphedamnocarpus pruriens* (A. Juss.) Szyszyl. var. *lanceolatus* Launert



Map showing distribution of

- ■ *Sphedamnocarpus transvalicus* (Kuntze) Burtt Davy
- *Sphedamnocarpus galphimiifolius* (A. Juss.) Szyszyl.
- ● subsp. *galphimiifolius*
- ○ subsp. *rehmannii* (Szyszyl.) Launert
- ▲ *Tristellateia africana* S. Moore