TROPICAL AFRICAN FLOWERING PLANTS

Ecology and Distribution

Vol. 4 – Fabaceae (Desmodium-Zornia)

• J.-P. LEBRUN
• A. L. STORK

Conservatoire
et Jardin botaniques
de la Ville de Genève
2008

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JEAN-PIERRE LEBRUN – ADÉLAÏDE L. STORK

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The good working conditions at the Conservatoire botanique, Genève, are a basic necessity for following up our enterprise. We thank our new Director, Dr. P.-A. Loizeau, for continuing his predecessor's support. We are also much indebted to Mr. P. Perret, Head of the extraordinary library, and to the very helpful librarians who assist us in solving problems of different kinds. We express our special gratitude to Dr. C. Chatelain for his assistance in producing this volume. We also extend our sincere thanks to Mrs. P. Mérigout (Créteil, F) and to Mrs. V. Compagnon who have helped us in many practical ways. We also wish to thank Dr. A. Barfod (Aarhus, DK) for providing the front cover illustration of a legume. Dr. and Mrs. R. M. Polhill (Kew) have always given us their wholehearted support and have kindly checked the main English texts. We dedicate this volume to them with our thanks.

New combination

Eriosema rhodesicum var. **huambense** (Torre)
J.-P. Lebrun & Stork *(Leguminosae : Fabaceae)* 46

I. STATISTICAL SUMMARY

The present volume covers the *Leguminosae*, here treated as three separate families, viz. *Mimosaceae, Caesalpiniaceae* and *Fabaceae*.

Table 1 summarizes our lack of information relating to plant habit, flowers, fruit, ecology, and herbarium material.

With a total of 2848 species, Table 1 shows the following results (figures within brackets indicate uncertain data):

- 2 species (= < 0,1 %) without known habit;
- 13 (+4) species (= < 0,5 %) for which flowers are unknown;
- 221 (+32) species (= > 8,5 %) for which fruits have not been seen;
- 109 (+20) species (= 4,4 %) without records on their ecology;
- 247 (+22) species (= < 9 %) which are only known from the type.

We are aware of the fact that our figures do not reflect the absolute truth. They are certainly too high and should be considered as an indication only.

Table 1. – Families included in Volume 3 (alphabetical order, 6-letter acronyms). Statistical summary: number of genera (Nr. gen.) and species (Nr. spp.); number of species for which habit (hab.), reproductive organs (flowers, male flowers, female flowers, fruits) or ecology (eco.) are not recorded; and number of species only known from the type collection. Figures within brackets indicate uncertain data.

Family	*Nr. gen.*	*Nr. spp.*	*No hab.*	*No fl.*	*No ♂ fl.*	*No ♀ fl.*	*No fr.*	*No eco.*	*Only type*
Caesal	84	501	2	2 (+ 4)			53 (+ 4)	27 (+ 5)	40 (+ 1)
Fabace	138	2111		10			159 (+ 28)	76 (+ 15)	198 (+ 3 + 17?)
Mimosa	25	236		1			9	6	9 (+ 1)
Total									
3	247	2848	2	13 (+ 4)			221 (+ 32)	109 (+ 20)	247 (+ 22)
			= < 0,1 %	= < 0,5 %			= > 8,5 %	= 4,4 %	= < 9 %

Caesal: no ripe fruit 11; no seeds 9 (+1).
Mimosa: no seeds 4; no ripe seeds 5.
Fabac: no ripe fruit 79 (+3?); no seeds 142 (+23); no ripe seeds 67 (+3?); no underground tuber 1; no rootstock 1; no leaves 2; no stipules 1; no flower colour 4; no mature flower 1.

II. LIST OF FAMILIES INCLUDED IN VOLUME 4

Fabaceae (Desmodium-Zornia)

III. HOW TO USE THIS BOOK

For each species there is a description and a simplified map of distribution. In a few cases two species figure on the same map but with different symbols.

The **text** is conceived in the following manner, based upon our "Enumération", Vol. 1 (J.-P. Lebrun & A. L. Stork 1991).

- Bibliographical references are sometimes given at the beginning of families and genera, as appropriate. They mostly refer to monographs or articles published after the issuing in 1997 of Volume 4 of our "Enumération" (an updating of the bibliographies is found at the end of each volume in the chapter "Additions et corrections...").
- Basionym and synonym(s) are only cited if they do not figure in the "Enumération".
- A short description, mainly with regard to life form, is given, e.g. tree, shrub, subshrub, liane, (annual, perennial) herb, and to the height of the plant; for trees sometimes also other characters, such as diameter and/or girth of the bole or presence of buttresses, are mentioned. Presence of rhizomes, tubers or bulbs and of spectacular features, such as showy flowers, exceptionally small or large leaves, flattened or rounded shoots, etc., or particular uses, are often specified.
- Ecological data are recorded, sometimes in rather detailed form if known; range of altitude is generally given.
- If a species comprises two or more intraspecific taxa, this is mentioned, but their names are not always quoted, as most of them appear in our "Enumération". However, there may have been changes since the publication in 1991, and in this case the names figure in the text.
- Extraterritorial geographical distribution is given (i.e. not marked on the accompanying map of distribution which includes only the tropical part of Africa as defined in our "Enumération").

* * *

On the **maps** of distribution (Fig. 1) we indicate the northern and southern limits of our area, as well as the political frontiers of the countries within these borders. Arrows (at the margin of the continent, W Africa) indicate the situation of four particular countries, viz. Western Sahara, Guinea Bissau, Togo, and Benin.

The main phytochoria, based upon Frank White's classification and indicated on the maps that figure in Volume 1 of this Series (p. 19), have been slightly modified. In the following list Section B has been split into two areas. From North to South, and East to West the phytochoria are (Figs. 1 and 2):

- A. Southern Sahara-Sindian zone [corresponding to the southern part of White's phytochorion XVII (Sahara regional transition zone)].
- B. Sahelian-Sudano-Zambezian zone:
  - Ba. Sahel regional transition zone [corresponding to White's zone XVI];
  - Bb. Sudano-Zambezian zone [corresponding to the following phytochoria of White: III (Sudanian regional centre of endemism), XI (Guinea-Congolia/Sudania regional transition zone); X (Guinea-Congolia/ Zambezia regional transition zone); II (Zambezian regional centre of endemism); XIII (Zanzibar-Inhambane regional mosaic); and the north-eastern tip of XV, i.e. the southernmost part of Mozambique]; the enclosed parts of the "Afromontane archipelago-like regional centre of endemism" (VIII) and of the "Afroalpine archipelago-like region of extreme floristic impoverishment" (IX) have not been taken into account here (precluded by the small scale of our map).
- C. Guineo-Congolian rain-forest zone [corresponding to phytochorion I of White (Guineo-Congolian regional centre of endemism)].
- D. Ethiopian Afromontane zone [the northern part of White's phytochorion VIII (see above under Bb)].

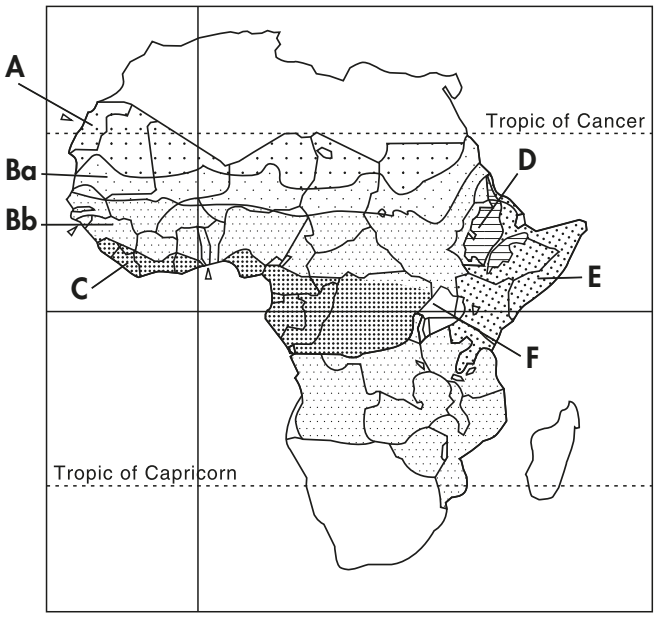


Fig. 1. – Main phytogeographical zones of tropical Africa used in the present work. For zones **A** through **F,** see explanations in the text.

- E. Somalia-Masai/Afroriental zone [phytochorion IV of White (Somalia-Masai regional centre of endemism) and the northernmost part of XIII (see above under Bb)]. The "Afromontane" (VIII) and "Afroalpine" (IX) archipelago-like regional centres are included (see above under Bb).
- F. Lake Victoria mosaic [White's phytochorion XII (Lake Victoria regional mosaic)]. As is the case in our zones Bb and E, the "Afromontane" (VIII) and "Afroalpine" (IX) archipelago-like regional centres are included here (see above under Bb).

Madagascar is not included in our compilation although present on the map (Fig. 1).

The maps are based on literature records at our disposal; thus they are indicate, but not exhaustive. In certain cases it has even been impossible to find the exact locality. Although it will always be possible to add dots on the maps, we believe that in most cases such additions will not change fundamentally the general pattern of distribution for a particular species.

The distribution of the species is shown on the maps in the following way:

- For small countries only one dot is used. For larger countries, and in particular if the distribution falls into different phytochoria, two (or more) dots are present.
- Dots are also placed in particular "subdivisions" of large countries, according to those given in the following floras: Adumbratio Florae Aethiopicae, Flora of Ethiopia and Eritrea, Flora of Somalia, Flora of Tropical East Africa, Flora Zambesiaca, Flore du Congo Belge et du Ruanda-Urundi (succeeded by Flore du Congo Belge, du Rwanda et du Burundu, and ultimately by Flore d'Afrique centrale), and Conspectus Florae Angolensis.

Readers will notice that plants seem to be more common (as dots are more numerous) in the eastern part of tropical Africa. This is often an illusion due to the subdivision of large countries mentioned above.

At more or less regular intervals, and at the end of a family, one or two maps are left blank, in order to allow for mapping of newly described species (or species overlooked by the compilers).

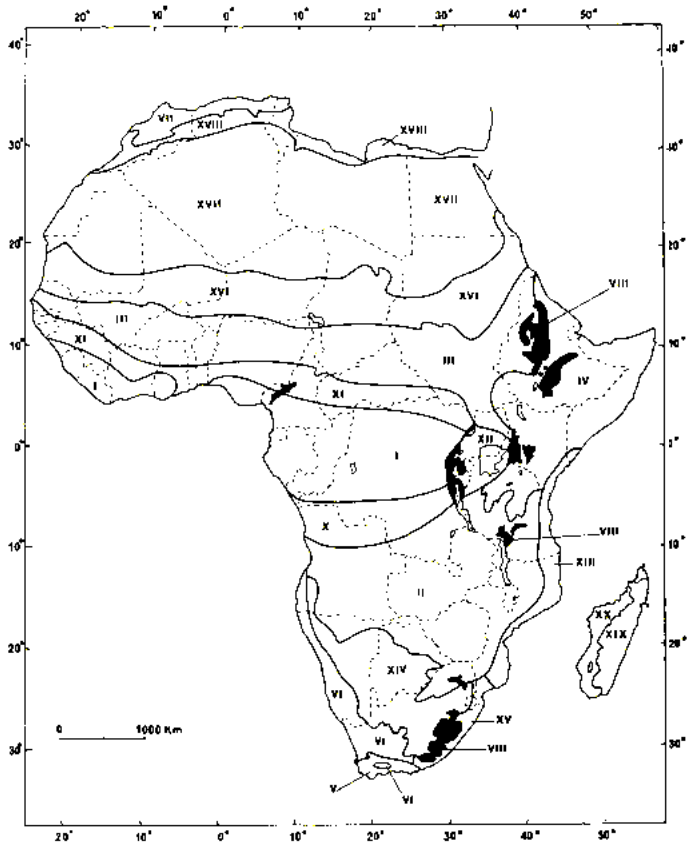
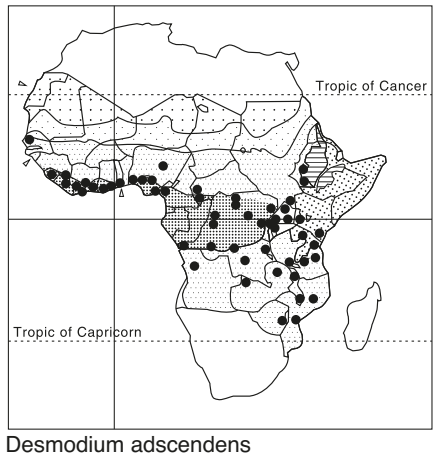


Fig. 2. – Main phytochoria of F. White (1983): p. 38 (cf. quotations in the text). See also "Enumération", vol. 1: pp. 24-25 (1991).

BASIC REFERENCE

WHITE, F. (1983). *The vegetation of Africa: A descriptive memoir to accompany the Unesco/AETFAT/UNSO vegetation map of Africa.* Unesco, Paris.

IV. THE CHECKLIST: Leguminosae : Fabaceae (Desmodium-Zornia)



Desmodium adscendens

DESMODIUM / *23*

incl. *Dendrolobium* (Wight & Arn.) Benth.

One species (*D. wittei)* only known from the type.

OHASHI, H. (2004). Taxonomy and distribution of Desmodium and related genera (Leguminosae) in Malesia (I). *J. Jap. Bot.* 79 : 101-139.

OHASHI, H. & al. (1999). Dendrobium arbuscula (Domin) H. Ohashi, D. umbellatum (L.) Benth. and a related new species (Leguminosae-Papilionoideae : Desmodieae). *J. Jap. Bot.* 74 : 14-24.

Desmodium adscendens (Sw.) DC.

bas.: *Hedysarum adscendens* Sw.

syn.: *Desmodium ovalifolium* Guill. & Perr.; *D. oxalidifolium* G. Don ; *D. simplex* G. Don ; *Hedysarum caespitosum* Poir.; *Desmodium trifoliastrum* Miq.; *D. thwaitesii* Bak.

Perennial herb or undershrub 0,2-1 m long ; stem creeping or forming tussocks, terete, striate with stiff, upwardly appressed to spreading pilosity ; branches ± erect.

Humid to swampy, shaded clearings in forest ; old cultivated fields ; grassland of stream banks ; humid places in niayes and gallery ; roadsides ; secondary- bush and forest ; rain-forest with *Chrysophyllum albidum, Cola gigantea, Erythrophleum suaveolens, Alstonia boonei, Parinari excelsa, Milicia excelsa ; Brachystegia* woodlands ; coastal forest ; 1-1800 m alt.

S. Africa ; Madagascar ; America ; tropics.

Comprises 2 vars. (not always strictly marked).: – var. **adscendens ;** – var. **robustum** B. G. Schubert

Without fruits can be confused with **D. hirtum.**

According to H. Ohashi (o.c., 2004 : 133), native of C America, West Indies ; introduced into Africa, Asia, the Pacific.

D. appressipilum B. G. Schubert

Semi-prostrate to suberect herb with slender stem 30-40 cm long and spreading branches densely appressed pilose with upwardly directed white hairs, and also uncinulate-puberulous.

Deciduous woodland ; grassland ; 900-2100 m alt.

D. barbatum (L.) Benth. – Icon.: Du Puy & al., Leguminosae Madag.: 613, 2002 (var. **dimorphum** and var. **procumbens)**.

bas.: *Hedysarum barbatum* L.

syn.: *Nicolsonia barbata* (L.) DC.

Variable procumbent to erect perennial ± woody herb 0,1-1m long with white to fulvous appressed to spreading pilosity on stems, branches and petioles.

Open and wooded grassland ; deciduous woodland ; grassland in sandy soil by lake and marsh edges ; *Brachystegia* woodland, etc.; rocky ground ; sometimes a weed ; old cultivations ; bushland ; sandy roadsides ; edge of forest gallery ; 15-2150 m alt.

Namibia, Botswana, S. Africa ; Madagascar.

Comprises 3 vars. in mainland Africa : – var. **argyreum** (Welw. ex Bak.) B. G. Schubert [syn.: *Desmodium dimorphum* Welw. ex Bak. var. *argyreum* Welw. ex Bak.; *Meibomia dimorpha* (Welw. ex Bak.) Kuntze var. *argyrea* (Welw. ex Bak.) Hiern ; *Nicolsonia barbata* (L.) DC. var. *argyrea* (Welw. ex Bak.) Schindler]; – var. **dimorphum** (Welw. ex Bak.) B. G. Schubert [syn.: *Meibomia dimorpha* (Welw. ex Bak.) Kuntze ; *Nicolsonia barbata* (L.) DC. var. *dimorpha* (Welw. ex Bak.) Schindl.; *Desmodium barbatum* (L.) Benth. subsp. *dimorphum* (Welw. ex Bak.) Laundon ;

D. barbatum (L.) Benth. var. *emirneensis* Bak.]; – var. **procumbens** B. G. Schubert [syn.: *Desmodium barbatum* (L.) Benth. var. *nummulariifolium* Bak.; *D. campenonii* Drake]. – Var. **barbatum** is an American taxon sometimes introduced in Africa.

D. cordifolium (Harms) Schindler

bas.: *Glycine cordifolia* Harms

syn.: *Desmodium homblei* De Wild.

Creeping to ± ascending perennial herb with tuberous roots and slender reddish-brown shoots 0,4-1 m long ; stems angular to cylindrical and appressed to spreading hirsute with stout stiff tapering hairs.

Brachystegia, Julbernardia woodland ; grassland ; roadsides ; open forests ; savannas ; scrubland, etc.; 930-1680 m alt.

[D. dichotomum (Willd.) DC.]

bas.: *Hedysarum dichotomum* Willd.

syn.: *H. diffusum* Willd.; *Desmodium diffusum* (Willd.) DC. October 1825, non DC. January 1825 ; *D. willdenowii* G. Don ; *D. sennaarense* Schweinf.; *Meibomia sennaarensis* (Schweinf.) Kuntze

Herb to suffrutex with a procumbent, diffuse and branched, angular, grooved and striate stem 0,1-1 m long, usually tawny to brownish, moderately to densely uncinulate-puberulent and sparsely to moderately pilose with long tapering hairs.

Grassland ; black cotton soil ; deciduous woodland ; *Echinochloa* grassland in mopane woodland on black cracking clay ; 600-1900 m alt.

India to China, Java, Celebes. – Undoubtedly introduced in Africa (and Madagascar) ; not mapped.

D. dregeanum Benth.

syn.: *Nicolsonia caffra* E. Mey.; *Meibomia caffra* (E. Mey.) Kuntze ; *Desmodium caffrum* (E. Mey.) Druce 1916, non Eckl. & Zeyh. 1836, incl. var. *schlechteri* Schindl.

Woody herb with prostrate to erect stems or decumbent to erect shrub 0,2-1m long or tall ; stem terete, grooved or striate, glabrescent below, softly pilose above with slender appressed upwardly directed silky white hairs and minute puberulence beneath the pilosity.

Grassland at forest edges ; sandy lake shores ; woodland edges ; dambo margins ; beaches ; marshes ; 0-1500 m alt.

S. Africa.

D. fulvescens B. G. Schubert

Suffrutex with strongly angular stem, densely appressed-villous.

Swamp ; moist dambos.

Collected twice : 1912 in Zaire, 1957 in Zambia.

D. gangeticum (L.) DC.

bas.: *Hedysarum gangeticum* L.

syn.: *H. maculatum* L.; *H. lanceolatum* Schumach. & Thonn.; *Desmodium lanceolatum* (Schumach. & Thonn.) Walp.; *D. polygonoides* Bak.; *Meibomia polygonoides* (Bak.) Kuntze ; *Hedysarum styracifolium* sensu Poir., non L.

Herbaceous, or ± woody perennial herb from a few cm to 1,5 (-2) m tall, arising from a somewhat branched root system ; stems prostrate to erect or arching, angular, striate, uncinulate-pubescent and abundantly strigose with upwardly directed tapering hairs.

DESMODIUM GANGETICUM

Wooded and open grassland ; riverine forest ; humid or swampy places ; forest gallery ; savanna ; rain-forest with *Chrysophyllum albidum, Cola gigantea, Erythrophleum suaveolens, Alstonia boonei, Parinari excelsa, Milicia excelsa ;* woodland with *Albizia zygia, Annona senegalensis, Combretum collinum, Lonchocarpus laxiflorus ;* old clearings ; *Brachystegia,* etc. woodland ; thickets of *Craibia, Mimusops,* etc. ; dunes near sea ; dry sandy ground near water ; kopjes ; 0-2000 m alt.

Old World tropics (cf. Kilian & al. in Willdenowia 34 : 175, 2004) ; cultivated in America ; naturalized in the West Indies.

D. helenae Buscal. & Muschl.

Herb or suffrutex, often ramose from the base, 0,45-1,2 m tall or more ; stems cylindrical, striate, brown to dark-red ; secondary branches angular.

Bush ; grassy savanna with shrubs ; edges of forest gallery on red clayey soil with black sand ; *Brachystegia* and other mixed deciduous woodlands ; somewhat swampy places ; 1200-1560 m alt.

D. heterocarpon (L.) DC. var **strigosum** van Meeuwen

bas. : *Hedysarum heterocarpon* L.

syn. : *H. polycarpon* Poir. ; *Desmodium polycarpon* (Poir.) DC.

Suffruticose plant with shrubby or procumbent habit ; stems terete, striate, strigose, to 1-2 m tall.

Swampy or damp soil, near the coast.

E and SE Asia, Malesia, Melanesia, New Caledonia, Polynesia (var. **heterocarpon** only known in cultivation in East Africa).

D. hirtum Guill. & Perr.

syn. : *D. boivinianum* Baill. ; *D. humblotianum* Baill.

Prostrate to erect annual or perennial herb or subshrub ; stem slender 0,5-2 m tall, distinctly and laxly spreading pilose ; sometimes mat-forming, with adventitious roots.

Grassland ; sandy soils ; pool on laterite or in clayey places ; bare mud ; crevices of basalt pavement rocks ; dambos ; mixed deciduous woodland ; 400-1520 m alt.

S. Africa ; Madagascar (var. **hirtum)**.

Comprises 2 vars. : – var. **delicatulum** (A. Rich.) Harms ex Bak. f. (bas. : *D. delicatulum* A. Rich.) with 2 forms.

Widespread but apparently not abundant throughout tropical Africa.

Very closely related to **D. heterophyllum** (Willd.) DC. from Asia and perhaps conspecific. Sometimes confused with *D. setigerum.*

[D. incanum (Sw.) DC.] – Icon. : Du Puy & al., Leguminosae Madag. : 617, 2002.

bas. : *Hedysarum incanum* Sw.

syn. : *H. madagascariense* Desv. ; *Desmodium canum* (J. F. Gmel.) Schinz & Thell. ; *D. supinum* (Sw.) DC. ; full synonymy in H. Ohashi (2004) : 134-136.

Subshrub 10-75 cm tall ; shoots erect or decumbent, puberulous.

Dry forest, thickets.

Introduced in Africa. Native of the warm-temperate New World. – Not mapped.

Sometimes confused with *D. ramosissimum.*

DESMODIUM

D. linearifolium G. Don

syn. : *D. schweinfurthii* Schindler, p.p. (specim. Afzelius s.n., Chevalier 15028) ; *D. djalonense* A. Chev., nom.

Annual branched herb, 10-35 cm tall, woody at the base, with erect or spreading lax branches.

Cracks in humid rocks ; to 600-700 m alt.

[D. ospriostreblum Chiov.]

syn. : *Anarthrosyne abyssinica* A. Rich. ; *Meibomia abyssinica* (A. Rich.) Schindler ; *Desmodium abyssinicum* (A. Rich.) Hutch. & Dalziel 1928, non (Willd. ex Hoffmgg.) DC. 1825. (= **D. repandum)**.

Delicate annual herb or plant with a stem woody at base, erect or scandent or semi-prostrate, to 0,6-1 m tall ; stem terete, striate, moderately uncinulate-puberulent ; branches becoming ± angular and somewhat more densely pubescent ; leaves very thin, flaccid.

Humid places ; forest gallery ; clayey soil, temporarily flooded ; thicket and dry bushland on granite soils ; often by rivers or seasonal streams ; mopane- and *Brachystegia* woodland, *Kirkia-Adansonia-Combretum-Sterculia* woodland ; 800 (? and less)-1600 m alt.

Cape Verde- and Annobon Isl. ; Yemen (Kilian & al. in Willdenowia 34 : 174-175, 2004).

Probably of tropical American origin and near *D. procumbens* (Mill.) Hitchc. and *D. tortuosum* (tropical America). Not mapped.

D. ramosissimum G. Don

syn. : *Hedysarum fruticulosum* Schumach. & Thonn., and *Desmodium fruticulosum* (Schumach. & Thonn.) Walp. according to J. M. Lock, Legumes Africa : 247, 1989. Or ? *Hedysarum fruticulosum* Desv. 1826, non *D. fruticulosum* (Schumach. & Thonn.) Walp. (1842), according to Du Puy & al., Legumes Madag. : 618, 2002.

Perennial erect semi-woody herb to branching shrub 0,1-2 m tall ; stem terete to angular, light brown to reddish, striate to grooved, moderately to abundantly strigose with upwardly directed appressed hairs (rarely spreading).

Grassland ; dry sandy open areas ; open forest ; cliffs ; wooded savanna on hardpan ; woodland ; also ruderal ; path sides ; clearings ; *Brachystegia* and mixed deciduous woodland ; 500-2000 m alt.

Bioko/Fernando Poo ; Madagascar, Mascarenes.

D. repandum (Vahl) DC.

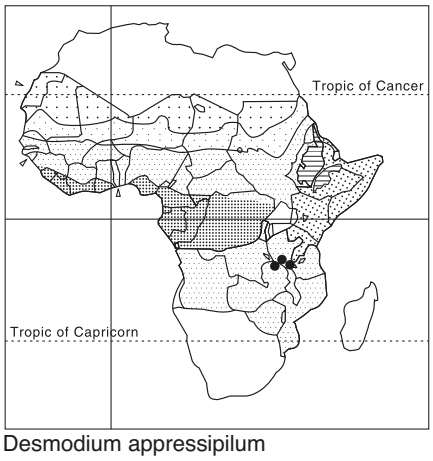
bas. : *Hedysarum repandum* Vahl

syn. : *Aeschynomene remota* Poir. ; *Desmodium scalpe* DC. ; *D. strangulatum* Wight & Arn. ; *D. schimperi* A. Rich. ; *D. aparine* Chiov. 1935, non *D. aparine* (Link) DC. 1825 ; ? *Hedysarum abyssinicum* Willd. ex Hoffmgg. ; *Desmodium abyssinicum* (Willd. ex Hoffmgg.) DC. non (A. Rich.) Hutch. & Dalziel ; *D. remotum* (Poir.) Drake

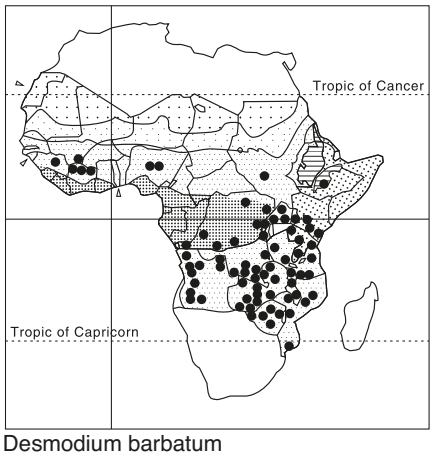
Perennial herb or slender shrub woody at the base, climbing, scrambling, or forming dense undergrowth 0,3-4 m tall ; stem brown to reddish, simple to much branched, terete to angular, minutely uncinulate-puberulent (or glabrescent) and usually moderately to sparsely spreading pilose.

Occasional in shady grassland and marginal areas of cultivated land ; more often one of the dominant components of shaded places in dry evergreen forest or rain-forest or at the forest margin ; riverine vegetation ; *Podocarpus latifolius* forest ; 400-3050 m alt.

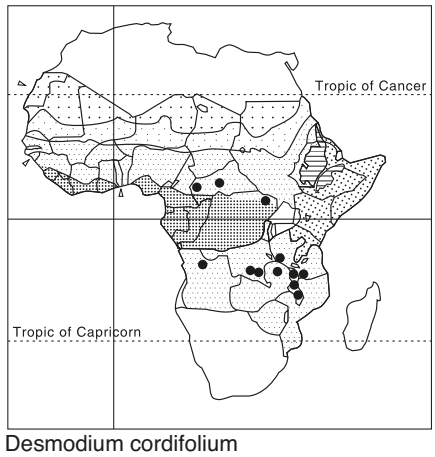
Tropics and subtropics of the Old World.



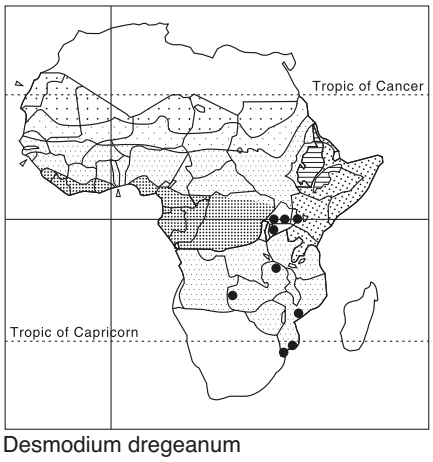
Desmodium appressipilum



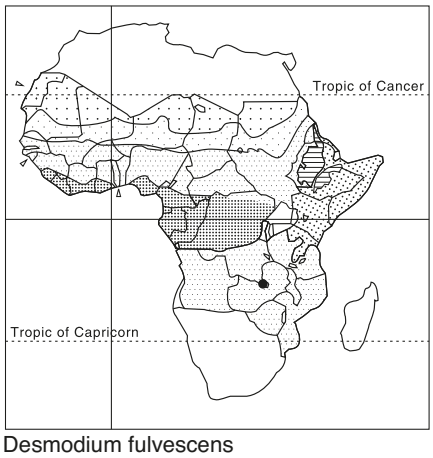
Desmodium barbatum



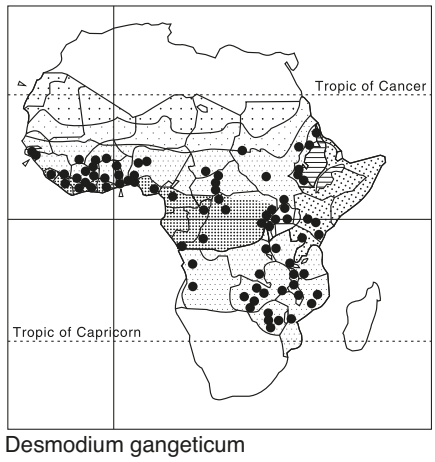
Desmodium cordifolium



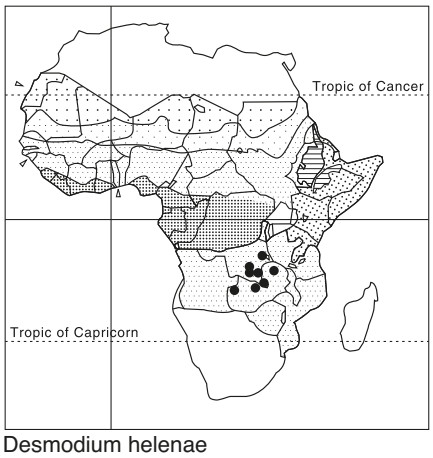
Desmodium dregeanum



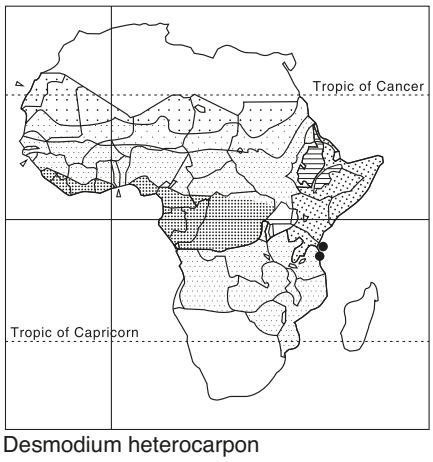
Desmodium fulvescens



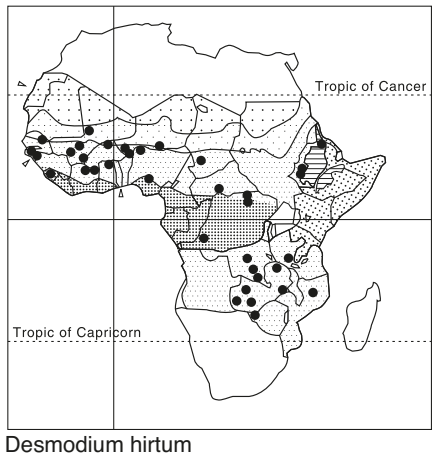
Desmodium gangeticum



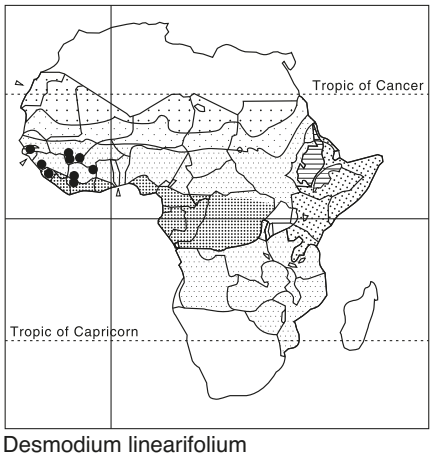
Desmodium helenae



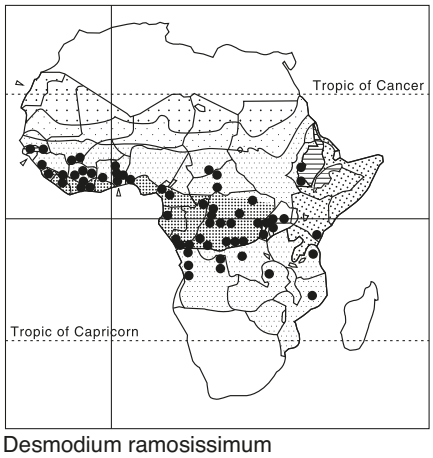
Desmodium heterocarpon



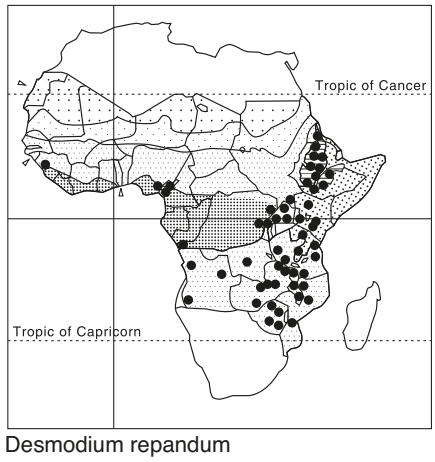
Desmodium hirtum



Desmodium linearifolium



Desmodium ramosissimum



Desmodium repandum

DESMODIUM

D. salicifolium (Poir.) DC. – Icon.: Du Puy & al., Leguminosae Madag.: 612, 2002.

bas.: *Hedysarum salicifolium* Poir.

syn.: *Desmodium oxybracteum* DC.; *D. paleaceum* Guill. & Perr.; *D. grande* E. Mey.; *Meibomia grandis* (E. Mey.) Kuntze; *M. oxybractea* (DC.) Kuntze; *M. paleacea* (Guill. & Perr.) Kuntze; *Desmodium diversifolium* (Poir.) DC.; *Hedysarum diversifolium* Poir.; *H. madagascariense* Desv. var. *lanceolatum* Desv.

Woody perennial herb or subshrub or shrub with single erect flexuous stem to 3 m long, pithy within, or creeping with ascending to erect inflorescences; stem reddish to pale brown, terete (below) to angular, striate, glabrous near base, minutely uncinulate-puberulent and soft spreading pilose with slender tapering hairs above.

Wet places at the edge of rain-forest; gallery forest river margins; swamps; wet grassland; rain-forest with *Chrysophyllum albidum, Cola gigantea, Erythrophleum suaveolens, Alstonia bonnei, Parinari excelsa, Milicia excelsa,* at edge of forest clearing; roadsides; *Brachystegia* woodland; sometimes on mud by open water; swamp forest; mixed deciduous woodland and thicket; 480-2100 m alt.

S. Africa, Namibia, Botswana; Madagascar, Mascarenes.

Comprises 2 vars.: – var. **densiflorum** B. G. Schubert; – var. **salicifolium.**

Often confused with *Pseudarthria hookeri.*

D. schweinfurthii Schindler, *excl.* specim. Afzelius s.n. and Chevalier 15028 (= **D. linearifolium)**.

Annual herb often prostrate, with numerous stems, 15-50 cm long, from the base, slender, ramose with long, spreading hairs.

Lateritic pans; stream valley; dry hardpan with shallow colluvium.

Not in Ethiopia (= *D. hirtum).*

D. setigerum (E. Mey.) Harvey

bas.: *Nicolsonia setigera* E. Mey.

Perennial herb with scandent to procumbent stems rooting at the lower nodes and forming shoots 0,5-1 m or more long; stems subangular to cylindrical, usually densely spreading pilose and somewhat puberulent.

Grassland at the edges of forests; along roadsides; humid grounds; also ruderal; grassland; sand at the edge of pool; sandstone; banded "tiger" vegetation; hardpan; rocky outcrops with wet flushes and thin soil with *Selaginella njamnjamensis, Aeollanthus* spp., *Aloe* sp. and many annuals, along small brook between rocks; dambo grassland; swamp forest; riverine grassland; shallow soil on granite outcrops; 680(? and less)-2330 m alt.

S. Africa.

Has often been confused with *D. hirtum.*

D. stolzii Schindler

Perennial herb, often with several stems 30-75 cm tall, arising from the long slender branching root; stems angular, lineate, uncinulate-pubescent and sometimes spreading pilose.

Sandy soils; wooded savanna; *Brachystegia* woodland; evergreen thickets; boggy grassland on *Cryptosepalum* wooded edges; 700-1470 m alt.

DESMODIUM

D. tanganyikense Bak.

Erect or arching perennial herb 1,2-1,5 m tall with reddish angular stem and branches abundantly spreading pilose with slender white tapering hairs, and somewhat uncinulate-pubescent.

Grassland on sandy soil; *Brachystegia* woodland (including mixed *Uapaca, Parinari, Julbernardia,* etc.); marshy grassland at rivulet; sometimes common in open forest; 930-2100 m alt.

Confused with *Pseudarthria hookeri.*

[D. tortuosum (Sw.) DC.]

bas.: *Hedysarum tortuosum* Sw.

syn.: *H. purpureum* Mill.; *Desmodium purpureum* (Mill.) Fawcett & Rendle; *D. stipulaceum* DC., incl. var. *aparine* Miq.; *Meibomia purpurea* (Sw.) Kuntze; *M. tortuosa* (Sw.) Kuntze

Erect perennial or arching herb or subshrub 0,5-1,5 m tall; stems often several from the base, hollow or pithy within, puberulous and with tubercular-based glandular hairs, and with shorter hairs hooked at the tip.

A weed on railways, in storm drains, forest clearings, waste and cultivated ground; also *Brachystegia* woodland, wooded grassland; 30-1230 m alt.

Native of Central America. Now widespread in tropical Africa and Asia, Madagascar.

Sometimes cultivated ("Florida beggar weed").

D. triflorum (L.) DC. – Icon.: Du Puy & al., Leguminosae Madag.: 621, 2002.

bas.: *Hedysarum triflorum* L.

syn.: *H. granulatum* Schumach. & Thonn.; *Desmodium granulatum* (Schumach. & Thonn.) Walp.; *Meibomia triflora* (L.) Kuntze; *Sagotia triflora* (L.) Duch. & Walp.

Prostrate creeping annual or perennial herb, often branched from the base or rooting at the nodes (suggesting a *Trifolium);* often mat-forming; stem terete and striate or angular, moderately to densely long white pilose.

Grassland; weed of cultivated ground, by roadsides, in sandy places, lawns, forming small to large mats; sand near beach; dambos; near sea-level-1800 m alt.

Pantropical; extending into southern U.S.A.

D. umbellatum (L.) DC. – Icon.: Fl. Mascareignes 80 : 97, 1990.

bas.: *Hedysarum umbellatum* L.

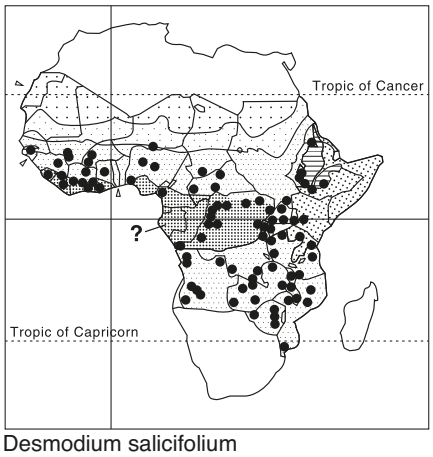
syn.: *Dendrolobium umbellatum* (L.) Benth.; *Hedysarum australe* Willd.; *Desmodium australe* (Willd.) DC.

Spreading shrub to 3-4 m tall, with ± pendulous branches; stems reddish, striate, with upwardly directed soft white pilosity and stipular scars.

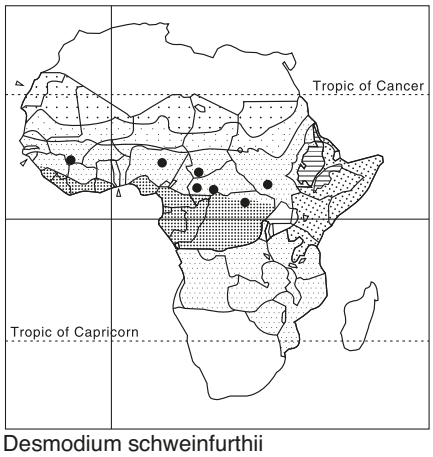
Sandy beaches, usually just above the high-water mark.

Madagascar, Réunion, Mauritius; Asia: Sri Lanka, S India, Burma, Indo-China, Malaysia, S China, S Taiwan, Okinawa-Australia-Pacific islands.

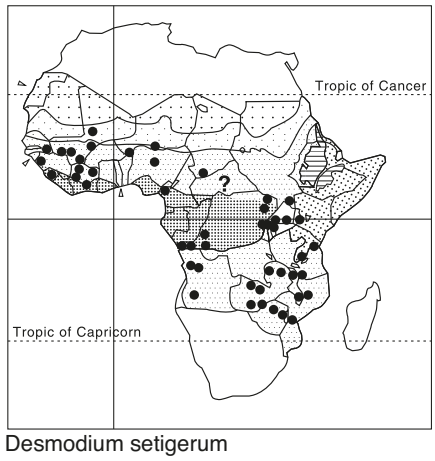
Fruit segments dispersed by sea.



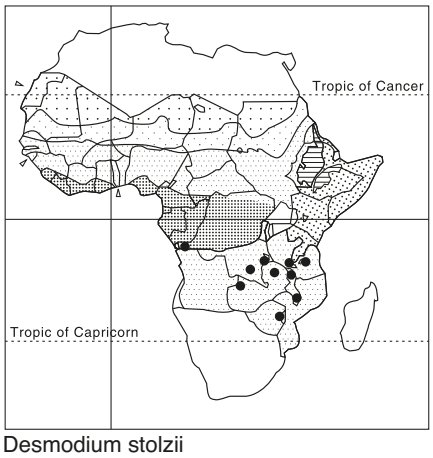
Desmodium salicifolium



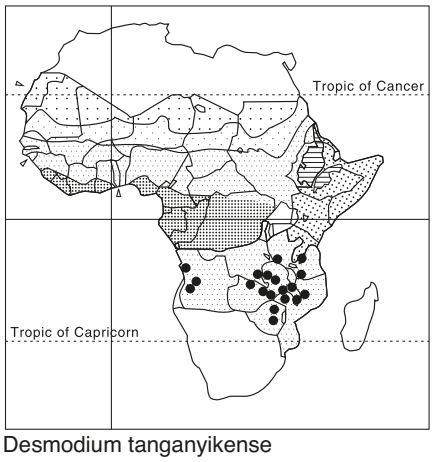
Desmodium schweinfurthii



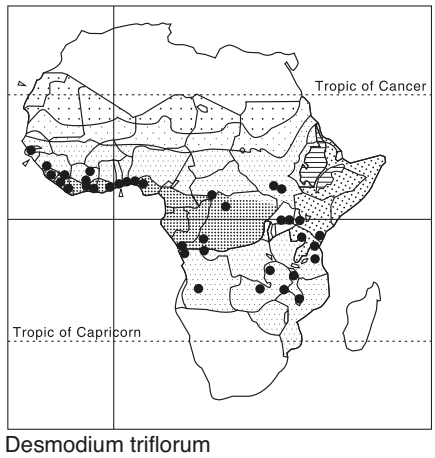
Desmodium setigerum



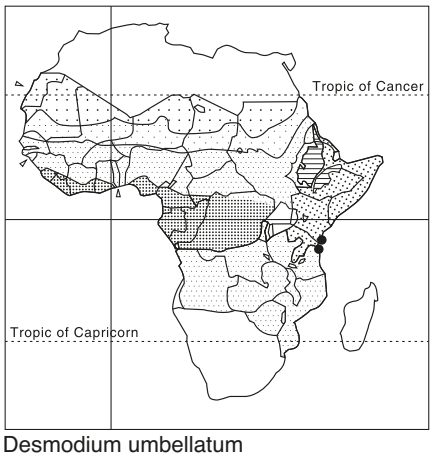
Desmodium stolzii



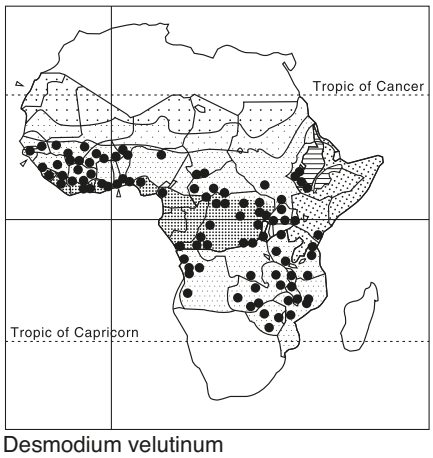
Desmodium tanganyikense



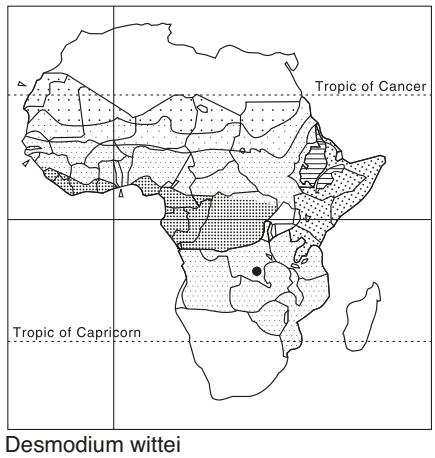
Desmodium triflorum



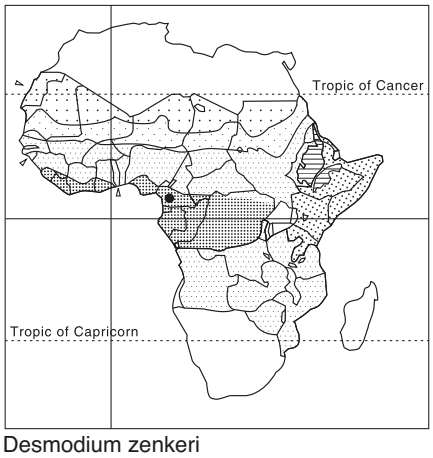
Desmodium umbellatum



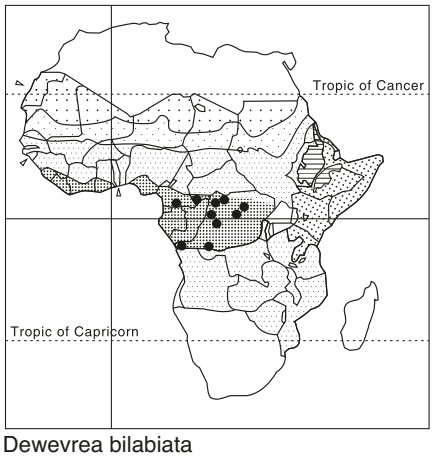
Desmodium velutinum



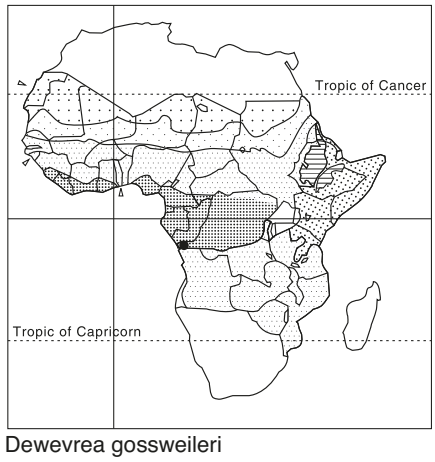
Desmodium wittei



Desmodium zenkeri



Dewevrea bilabiata



Dewevrea gossweileri

D. velutinum (Willd.) DC. subsp. **velutinum –** Icon.: Du Puy & al., Leguminosae Madag.: 617, 2002.

bas.: *Hedysarum velutinum* Willd.

syn.: *H. lasiocarpum* P. Beauv.; *H. deltoides* Poir.; *H. latifolium* Roxb. ex Ker-Gawler ; *Desmodium lasiocarpum* (P. Beauv.) DC.; *Hedysarum deltoideum* Schumach. & Thonn.; *Anarthrosyne cordata* Klotzsch ; *Pseudarthria cordata* (Klotzsch) Walp. Additional synonyms in Schindler, Feddes Repert. 21: 6, 1925 ; Feddes Repert. Beih. 49 : 28 [entries (499) and (692)], 1928 ; Knaap von Meeuwen, Reinwardtia 6(3) : 264, 1962.

Upright woody perennial herb, subshrub or shrub 0,5-3 m tall ; stem simple or somewhat branched, reddish, lineate, densely covered with short spreading pale ferruginous hairs when young.

Forest edges ; deciduous woodland ; wooded and open grassland ; humid places in forest gallery ; marigot edges ; often under shade in savanna ; hollow on laterite ; clayey soil ; sand ; soil with fine gravel ; riverine bushland ; abandoned clearing ; roadsides ; from humid to dry soil ; also ruderal ; neglected *Cedrela* plantation with regenerating mixed woodland of *Combretum collinum, Stereospermum kunthianum, Acacia hockii, Albizia grandibracteata* on ground with rocky outcrops ; sea-level to ±1300 m alt.

Tropics of the Old World ; widespread. Introduced into Madagascar, tropical America.

Subsp. **longibracteatum** (Schindler) H. Ohashi in India-Thailand-Indo-China-Malesia, S China.

D. wittei B. G. Schubert

Perennial herb, to 50 cm tall or more, with slender, simple, subangular, uncinulate-pubescent stems.

Open forests ; 700 m alt.

Only known from the type collected in 1947.

D. zenkeri Schindler

Shrub to 1 m tall ; young branches obtuse-angular, very sparsely appressed pilose to subglabrous.

On rocks in rapid ; waterfall.

Near *D. adscendens* and *D. ramosissimum.*

SYNONYMS :

Desmodium abyssinicum (A. Rich.) Hutch. & Dalziel = **Desmodium ospriostreblum**

abyssinicum (Willd. ex Hoffmgg.) DC. = **D. repandum**

aparine Chiov. = **D. repandum**

australe (Willd.) DC. = **D. umbellatum**

barbatum (L.) Benth. var. *emirnense* Bak. = **D. barbatum** var. **dimorphum**

var. *nummularifolium* Bak. = **D. barbatum** var. **procumbens**

subsp. *dimorphum* (Welw. ex Baker) Laundon = **D. barbatum** var. **dimorphum**

boiviniana Baill. = **D. hirtum**

caffrum (E. Mey.) Druce = **D. dregeanum**

var. *schlechteri* Schindl. = **D. dregeanum**

campenonii Drake = **D. barbatum** var. **procumbens**

canum (J. F. Gmel.) Schinz & Thell. = **D. incanum**

delicatulum A. Rich. = **D. hirtum** var. **delicatulum**

diffusum (Willd.) DC. = **D. dichotomum**

dimorphum Welw. ex Baker = **D. barbatum** var. **dimorphum**

var. *argyreum* Welw. ex Baker = **D. barbatum** var. **argyreum**

subsp. *dimorphum* (Bak.) Laundon = **D. barbatum** var. **dimorphum**

diversifolium (Poir.) DC. = **D. salicifolium**

djalonense A. Chev., nom. = **D. linearifolium**

fruticulosum (Schumach. & Thonn.) Walp. = ? **D. ramosissimum**

grande E. Mey. = **D. salicifolium**

granulatum (Schumach. & Thonn.) Walp. = **D. triflorum**

homblei De Wild. = **D. cordifolium**

humblotianum Baill. = **D. hirtum**

kerstenii O. Hoffm. = **Pseudarthria hookeri** var. **hookeri**

lanceolatum (Schumach. & Thonn.) Walp. = **Desmodium gangeticum**

lasiocarpum (P. Beauv.) DC. = **D. velutinum** subsp. **velutinum**

madagascariense Desv. var. *lanceolatum* Desv. = **D. salicifolium**

megalanthum Taub. and var. *pilosum* Taub. = **Droogmansia megalantha** and its var. **pilosa**

ovalifolium Guill. & Perr. = **Desmodium adscendens** var. **adscendens**

oxalidifolium G. Don = **D. adscendens** var. **adscendens**

oxybracteum DC. = **D. salicifolium**

paleaceum Guill. & Perr. = **D. salicifolium**

polycarpon (Poir.) DC. = **D. heterocarpon** var. **strigosum**

polygonoides Bak. = **D. gangeticum**

purpureum (Mill.) Fawc. & Rendle = **D. tortuosum**

remotum (Poir.) Drake = **D. repandum**

scalpe DC. = **D. repandum**

schimperi A. Rich. = **D. repandum**

schweinfurthii Schindl. p.p. = **D. linearifolium, D. schweinfurthii**

sennaarense Schweinf. = **D. dichotomum**

simplex G. Don = **D. adscendens** var. **adscendens**

stipulaceum DC., incl. var. *aparine* Miq. = **D. tortuosum**

strangulatum Wight & Arn. = **D. repandum**

stuhlmannii Taub. = **Droogmansia pteropus** var. **pteropus**

supinum (Sw.) DC. = **Desmodium incanum**

tenuiflorum Micheli = **Macrotyloma**

thwaitesii Bak. = **Desmodium adscendens** var. **adscendens**

tortuosum sensu auct., non (Sw.) DC. = **D. ospriostreblum**

trifoliastrum Miq. = **Desmodium adscendens** var. **adscendens**

willdenowii G. Don = **D. dichotomum**

DEWEVREA / *2*

Fruit unknown in one species?

Dewevrea bilabiata Micheli

Liane like a cable; stem to 7 cm Ø; branches 5-8 mm Ø with fine longitudinal ridges; flowers very fragrant.

Rain-forest, flooded forest or in forest on firm ground; forest gallery; swamps; river sides; sometimes in clearings; also in humid places in savanna; very common.

Very rarely in fruit, but in bloom around the year. Heliophilous.

D. gossweileri Bak. f.

Very near the above species but leaves generally bijugate (not 2-3-foliolate) and with a short style; 12 m tall; fruit unknown?

Heliophilous formation in moist situation along river bank.

DICHILUS / *2*

Dichilus lebeckioides DC.

Erect much-branched herb or shrublet, to ± 60 cm tall; branches arising at ± 30°, slender, openly leafy, minutely appressed-hairy throughout; racemes strictly leaf-opposed, 1-2(-4)-flowered; leaflets narrowly oblanceolate; fruit linear, 3-4 mm wide, (3-)7(-9)-seeded; seed round to oblong in lateral view, brown, often mottled black.

Ecology unknown in Zimbabwe (probably grassland).

S. Africa, Namibia (305-2100 m alt.).

D. reflexus (N. E. Br.) A. L. Schutte – Icon.: S. African J. Bot. 54: 183, 1988.; Fl. Zambes. 3/7: 249, 2003.

Inflorescences, leaflets, fruits and seeds quite different from those of previous species: terminal raceme, rarely leaf-opposed, 2-3(-11)-flowered; leaflets oblanceolate to broadly oblanceolate; fruit broadly linear, 4,5-5,5 mm wide, (2-)5(-7)-seeded; seed round to transversely oblong in lateral view, uniform dark green to almost black.

Disturbed places along streams, on hillsides, by roads; 800-1500 m alt.

S. Africa, Swaziland.

Has been confused with *D. lebeckioides.*

SYNONYM:

Dichilus dalonianus Maire = **Argyrolobium arabicum**

DICRAEOPETALUM / *1*

ASRES, K. & al. (1997). Quinolizidine Alkaloids from the East-Arican Legume Dicraeopetalum stipulare Harms. *Biochem. Syst. Ecol.* 25: 305-308.

MAESEN, L. J. G. van der (1970). Cited under **Cadia,** Enum. 2: 68, 1992.

Dicraeopetalum stipulare Harms (neotype: Paoli 870; type: Ellenbeck 1108, destroyed).

syn.: *Acosmium stipulare* (Harms) Yakovlev

Tree 4-12 m; branches stout, dark-brown coloured, bark fissured; branchlets short, thickened, few-leaved, crowded with stipule bases at the ends.

DICRAEOPETALUM STIPULARE

Single trees in open scrub vegetation, near arable land; *Acacia, Commiphora* open deciduous bushland on red sandy loam; 300-1000 m alt.

The destroyed holotype is the only record from Ethiopia; has only been collected three times; very rare, possibly on account of the use of its bark for tanning.

DIOCLEA / *1*

Dioclea reflexa Hook. f.

Half-woody liane with twining stem to 15-20 m long, 6-8 cm Ø at the base; bark striate, hairy-hispid, becoming glabrescent; with conspicuous erect racemes of scented red flowers.

Heliophilous; in periodically flooded rain-forests, gallery and fallows in forest; edges of savanna-forest; coastal sandy strand above mangrove swamp; 0-550 m alt. (Liberia).

Pantropical; has been cultivated at Amani (Tanzania).

DOLICHOS / *46*

Many species poorly known, in particular those described from Zaire: pod unknown for 12 (+ 2?) species and mature pod for further 7 species [= together 19 (?21) species = c. 41 (45) %]; for 18 (+ 4?) species [= 39 (48) %] no seeds seen and for further 2 no ripe seeds [= together 20 (?24) = c. 43 (52) %]; no ecology is recorded for 2 species (= 4 %); 13 (+1?) species (= c. 28 %) are known only from the type.

Dolichos aciphyllus R. Wilczek

Plant with simple floriferous erect stems 10-25 cm long, ± furrowed, appressed-pubescent with reflexed hairs, arising from a woody rootstock ± 5 cm Ø; leaves appearing at the end of flowering; fruit and seed unknown.

Grassy savanna around swamp; 1797 m alt.

Only known from the type collected in 1949.

D. antunesii Harms

Stem erect, suffruticose, angular, subglabrous, puberulous at the apex, 10 cm tall; flowers appearing before the complete development of the leaves; ripe fruit and seeds unknown.

Grassland; 1700-1800 m alt.

D. argyros R. Wilczek

Plant with floriferous stems ramose at base, erect, 8-20 cm tall, ± compressed, ± grooved, tomentose with spreading silvery hairs, arising from a woody rootstock ± 2 cm Ø; leaves appearing at the end of flowering; fruit and seeds unknown.

Near swamp, grassy savanna; 1815 m alt.

Only known from the type collected in 1949.

D. axilliflorus Verdc.

Climber, slightly woody, to 6 m long with angular, dense pubescent branches; fruit unknown.

Relict of gallery forest bordering a seepage area; open marshy grassy place; ± 1200 m alt.

DOLICHOS

D. bianoensis R. Wilczek

Perennial prostrate herb 13-50 cm long arising from a large tuber; stems annual, somewhat zigzag, compressed, densely pilose with silky white hairs, sometimes flowering when the leaves are scarcely developed; mature pod and seeds unknown.

Seasonally wet grassland and bogs; 1500-1800 m alt.

Comprises 2 vars.

D. brevidentatus Mackinder

syn.: *D. pseudocajanus* Welw. ex Bak. var. *paniculatus* R. Wilczek

Erect herb to 1,3 m tall arising from a perennial tuberous or woody rootstock; stems annual, angled, sometimes ribbed, sparsely to densely white- or golden-pilose, young stems pale green becoming dark grey.

Open fire-damaged woodland on Kalahari sands (miombo or *Cryptosepalum* woodland); 800-1400 m alt.

D. cardiophyllus Harms

Perennial prostrate herb to 1 m long from a tuber; stems many, sparsely pilose; fruit unknown.

? Grassland; 1300 m alt.

Comprises 2 vars. but var. *subsessilis* Bak. f. may belong to another species (in this case the species is only known from the type collected in 1899).

Closely allied to *D. glabrescens.*

D. complanatus De Wild. – Icon.: Fl. Congo belge Ruanda-Urundi 6: 313, 1954.

Plant with erect stems to 40 cm tall, striate, sparsely pubescent to glabrous, arising from a woody rootstock.

?Grassy (or wooded) savanna.

Only known from type collected in 1911.

D. compressus R. Wilczek

Erect or ascending perennial herb 30-90 cm tall; rootstock woody, to 12 cm long and 6 cm Ø, containing a dark red resinous substance; stems 1-6, unbranched or branched, ribbed, often stout, glabrous or sparsely pubescent; leaves developing after flowering has commenced; seeds unknown?

Bushland, grassland with scattered trees; wooded savanna with *Loudetia* on rocky soil; 900-2290 m alt.

Perhaps not distinct from *D. schweinfurthii.*

Sudan?

D. corymbosus R. Wilczek

Plant with erect stems, ribbed, 12-28 cm long, tomentose to pubescent with silky-whitish hairs, arising from a woody or ± fleshy rootstock to 20 cm long and 10 cm Ø; flowers and leaves ± simultaneous; pods and seeds unknown.

Grassy savanna; swamp edges; burned savanna; clearing; 1700-1845 m alt.

D. dinklagei Harms

syn.: *Tephrosia subalpina* A. Chev. p.p., *excl.* specim. Chevalier 19474, 21486, 21724 (= **D. tonkouiensis)**.

Half-shrubby perennial herb 1-1,5 m tall; stems slightly angular, finely striate; branches pubescent.

DOLICHOS DINKLAGEI

Granitic cracked hardpan with *Cissus doeringii, Triumfetta* sp.; edge of granitic hardpan; rocky outcrops; on doleritic ground with *Kotschya lutea, Lophira lanceolata, Psorospermum alternifolium, Hymenocardia acida;* wooded savanna in plain with *Eupatorium africanum, Vernonia klingii, Marsdenia latifolia, Landolphia* sp.; 400-860 m alt.

D. dongaluta Welw. ex Bak.

Plant with stems 30-60 cm long, several, from a perennial fleshy-fibrous rootstock with cracked bark and exuding purple resin; stems erect, angular, glabrous, simple or forked; leaflets developing later than the flowers; fruit unknown?

Neglected fields; along forest edges; bushy places on dry sandy soil; abandoned plantations of *Manihot utilissima;* 1250 m alt.

D. elatus Bak.

Undershrub or shrub 0,9-2 m tall; stems erect, branched, as thick as a finger at the base; branches erect-spreading, sulcate stiff persistently grey-downy; fruit unknown?

Amongst rocks in shady situations; rocky wooded places, at river banks.

D. filifoliolus Verdc.

Prostrate herb 15-50 cm long, radiating from a perennial tuberous rootstock to 15 × 10 cm; stems annual, narrow, branching, slightly angled, sparsely pubescent, internodes 1,5-11 cm long; seeds unknown.

Grey sandy soil with red grit, at egde of open grassland with *Uapaca;* sandy rocky ground in grassland; dambo; sandy grass plain; shallow soil overlying "laterite"; sandy open space with scattered rocks; 1200-1380 m alt.

Collected near River Mujilezhi, a mile or so from the Angola border.

D. glabratus R. Wilczek

Erect glabrous subshrub; flowers and leaves simultaneous; pods and seeds unknown.

Ecology unknown.

Only known from the type collected in 1939.

D. glabrescens R. Wilczek

Prostrate creeping herb to 1,3 m long, arising from a perennial, woody or fleshy, napiform (12 cm long, 8 cm Ø) rootstock; stems annual, ramose, sulcate, flattened when dry, slender, sparsely pubescent or glabrous; flowers and leaves simultaneous; mature seeds unknown.

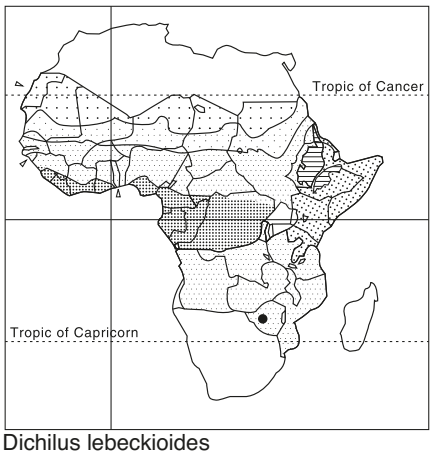
Very dry soil, in the dry season becoming swampy during heavy rains; miombo woodland; forest clearings; 1100-1300 m alt.

D. grandistipulatus Harms

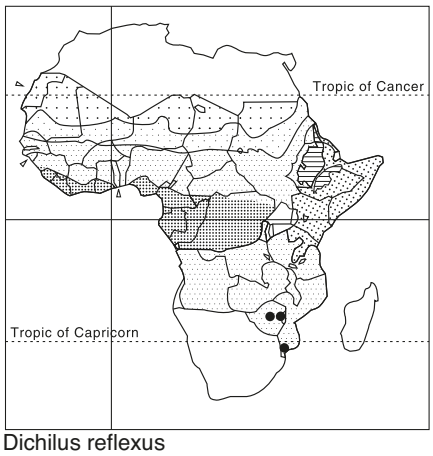
Herbaceous (? or woody) plant 1-1,2 m tall; stems erect, angular or becoming subcylindrical; hirsute-villous when young, pilose and becoming glabrescent; mature fruit and seeds unknown.

Wooded savanna; 480 m alt.

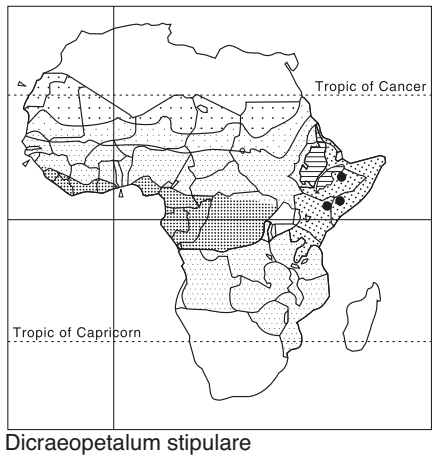
Only known from the type collected in 1909.



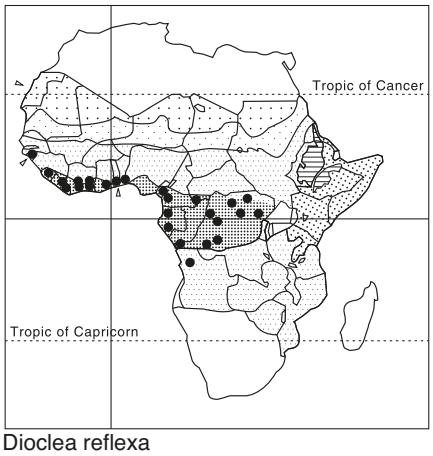
Dichilus lebeckioides



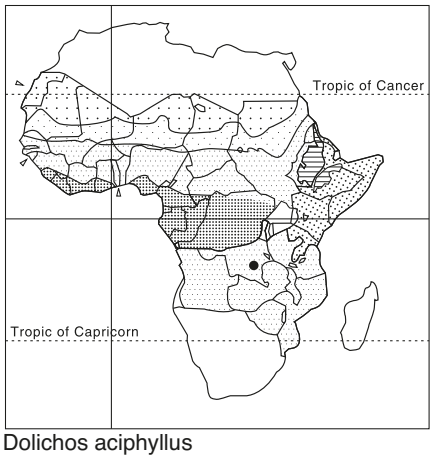
Dichilus reflexus



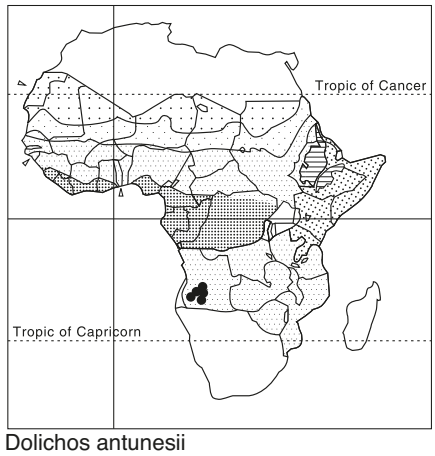
Dicraeopetalum stipulare



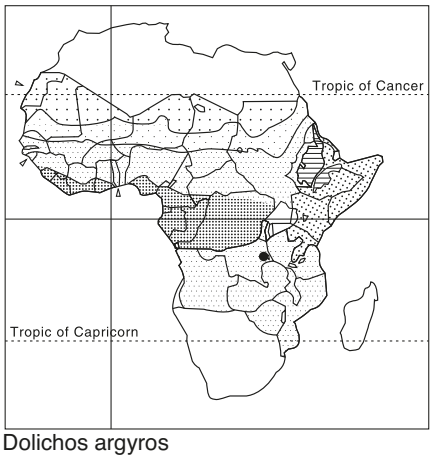
Dioclea reflexa



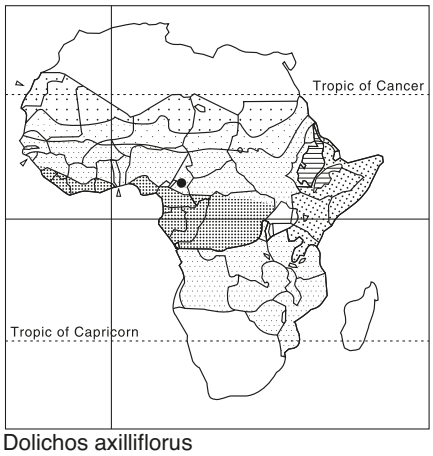
Dolichos aciphyllus



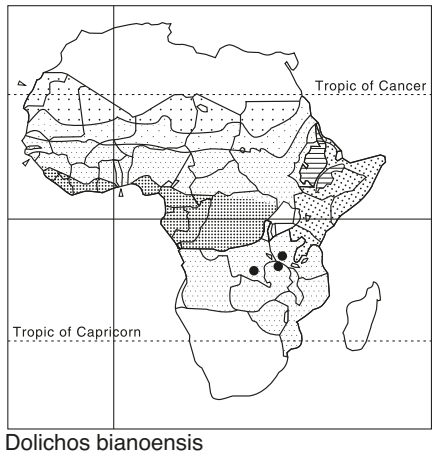
Dolichos antunesii



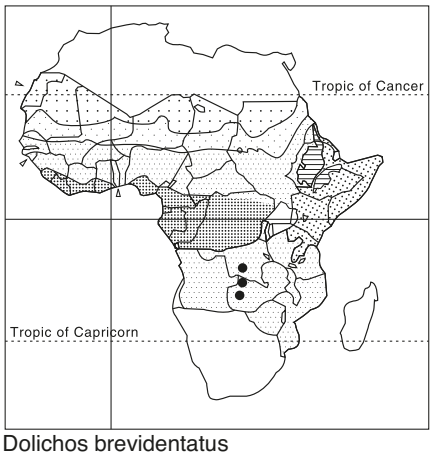
Dolichos argyros



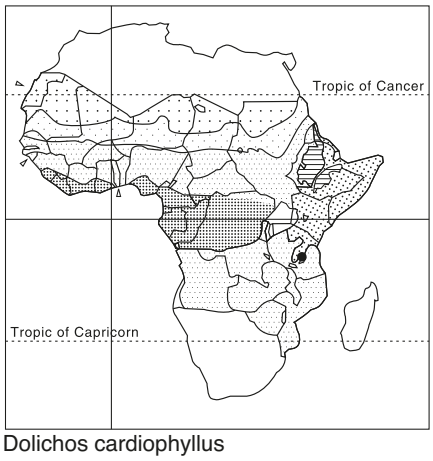
Dolichos axilliflorus



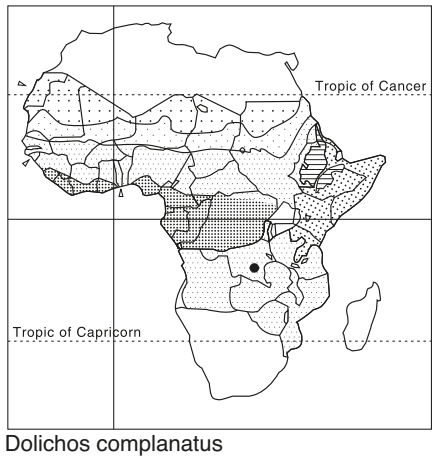
Dolichos bianoensis



Dolichos brevidentatus



Dolichos cardiophyllus



Dolichos complanatus

DOLICHOS

D. gululu De Wild.

syn.: *D. praecox* R. E. Fries

Perennial herb 8-30 cm tall from a very large woody rootstock to 30 cm long and 20 cm Ø; flowering stems nearly always appearing before the leaves, erect or rarely procumbent, simple or sparsely branched at the base, glabrescent to densely spreading hairy; stems angular with 1-6 leaves.

Grassland; *Brachystegia* woodland subject to burning; open forests; miombo woodland; on sandy soils; humid grassy spot near water-course; 1150-2100 m alt.

D. homblei De Wild.

Erect plant ± 0,5 m tall, tomentose to pubescent with spreading hairs; arising from a woody rootstock to 10 cm long and 5 cm Ø; stems striate to cylindrical; flowering with the leaves; fruit and seeds unknown.

Wooded valley.

Only known from the type collected in 1912.

D. ichtyophone Verdc. – Icon.: Kew Bull. 54: 417, 1999 (var. **sunzuensis)**.

Erect perennial subshrubby herb to 30-60 cm tall from a tough woody rootstock ± 20 cm long, 10 cm Ø; stems very densely velvety with mostly spreading white hairs; usually flowering when the leaves are not completely expanded or even quite absent.

Among boulders on hill; grassland on sandy soil; 1500-2400 m alt.

Comprises 2 vars.: – var. **ichtyophone;** – var. **sunzuensis** Mackinder

D. karaviaensis R. Wilczek

Erect plant to 1 m tall; stems ribbed, appressed-tomentose to puberulent with whitish-silky hairs; flowering with the leaves; pods and seeds unknown.

Thickets; cultivations.

D. katali De Wild.

Climber with pubescent-hirsute stems; lateral leaflets profoundly bilobate at the apex; pods and seeds unknown.

Savanna.

Only known from the type collected in 1900.

D. kilimandscharicus Taub.

Erect or rarely decumbent perennial herb 0,25-1,2 m tall, from a massive woody rootstock 14-45 cm long and 7-30 cm Ø; usually but not always flowering when leaves are very undeveloped or absent; stems few, simple or sparsely branched, smooth or slightly ribbed, usually densely pubescent with ± appressed silvery, greyish or ferruginous hairs; some stems develop twining tips.

Grassland, woodland and intermediate types; bushland; forest edges; miombo woodland; dambo; open thickets; wooded grassland; often pyrophytic; 700-2700 m alt.

Widespread and variable (forms described under *D. splendens* Bak. var. *splendens* with prominent close reticulation on the lower surface of the mature leaflets).

Comprises 2 subspp. and 2 vars.: – subsp. **kilimandscharicus** (syn.: *Tephrosia sericea* Bak.; *Dolichos lupinoides* Bak.; *D. malosanus* Bak.; *D. oliveri* Schweinf. var. *vondensis* Fiori; *D. bellus* Harms;

DOLICHOS KILIMANDSCHARICUS

D. splendens Bak. var. *acutifolius* Welw. ex Bak. f.; *D. buchananii* Harms; *D. goetzei* Harms; *D. stolzii* Harms; *D. lupiniflorus* N. E. Br.; *D. swynnertonii* Bak. f. – All of var. **kilimandscharicus)**; – var. **argyrophyllus** (Harms) Verdc. known from one collection in SE Tanzania; – subsp. **parviflorus** Verdc.; Pasquet & Verdcourt, Kew Bull. 51: 332, 1996 (syn.: *D. ufiomensis* Heering).

D. linearifolius I. M. Johnston – Icon.: Contrib. Gray Herb. 73: pl. 2, 1924.

Erect herb 30-60 cm tall, arising from a perennial woody rootstock; flowering before the leaves appear; stems annual, slender, glabrous. Fruit and seeds known!

Miombo; Kalahari sand woodland, on sandy soils; 900-1150 m alt.

D. lualabensis R. Wilczek

Prostrate perennial herb ± 40 cm long from a large tuberous root 20 cm long × 6 cm Ø; beginning to flower just before the leaves appear or whilst they are very young; stems mostly simple, zigzag, covered with spreading white hairs, compressed, ridged. Pod and seeds known!

Grassland, grassland with scattered bushes, subject to burning; miombo; 800-2400 m alt.

Comprises 2 subspp.

D. luticola Verdc.

Suberect or decumbent perennial herb 10-25 cm tall from a rather slender woody rootstock; stems with very sparse long white fine hairs.

Grassland on black cotton soils and reddish-chocolate loam; grassland with scattered *Acacia;* grassland with *Cyphia, Bulbine, Chlorophytum,* etc.; rocky grass slope; thorn-bushy country; locally dominant in *Heliotropium, Erlangea calycina* association with *Pennisetum stramineum, Themeda triandra, Senecio goetzei, Crambe kilimandscharica, Crotalaria spinosa;* wheat field on red loam; limestone; 1500-2100 m alt.

Closest to a small group of S. African species (**D. falciformis** E. Mey. etc.).

D. magnificus Verdc.

Erect herb 60-90 cm tall from an unknown rootstock; stems annual, angled, densely white, silvery or golden pilose; mature seeds unknown.

Yellow or orange clays and laterite in open *Brachystegia* woodland; woodland clearings; on Kalahari sand; weed of old cultivated land; miombo; moist grassland; 1000-1300 m alt.

Perhaps the most striking of all the species in the genus; all parts with cottony tomentum, flowers purple with darker striations on the standard.

D. mendoncae Torre

Procumbent herb ± 20 cm long from a rhizome; branches slightly pubescent; mature fruit unknown.

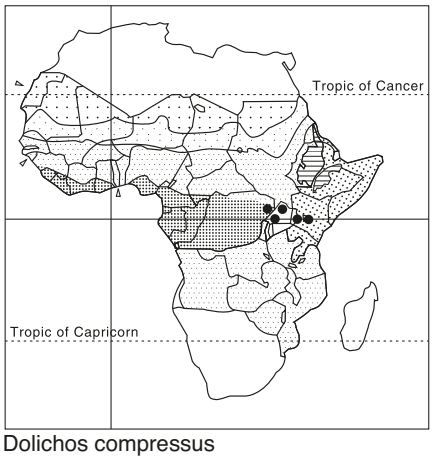
Ecology unknown (?stream sides).

Only known from the type collected in 1937 (described in 1965).

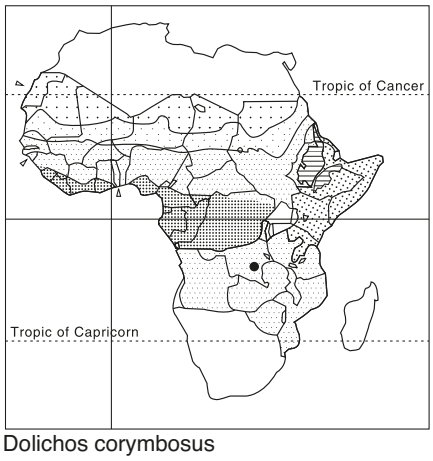
D. nimbaensis Schnell

Erect or ascending herb 0,2-1,5 m tall with slender stems, angular, striate, or subcylindrical, softly pubescent.

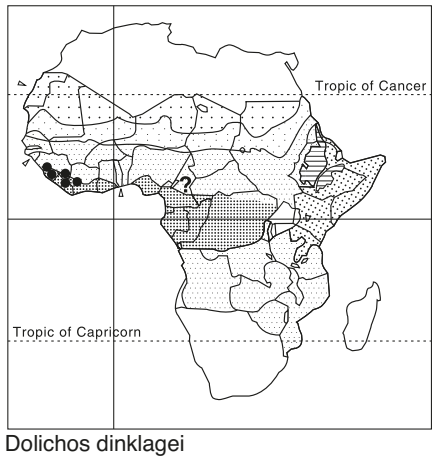
Meadow (sometimes on ferruginous hardpan); 630-1600 m alt.



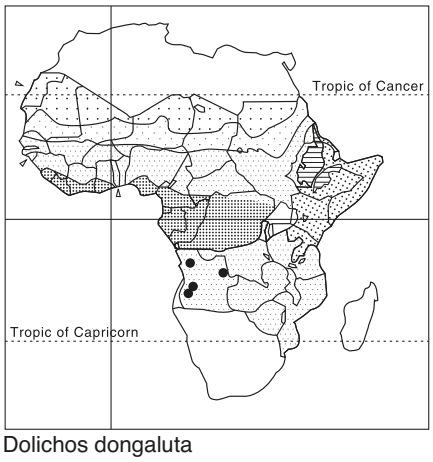
Dolichos compressus



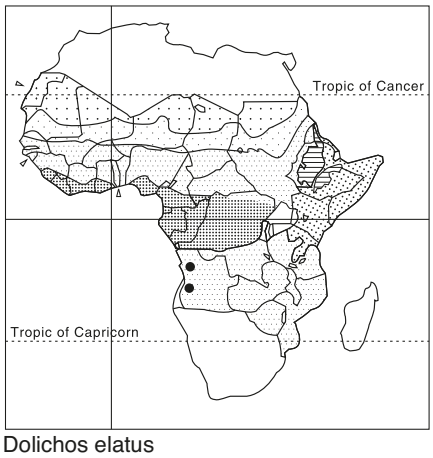
Dolichos corymbosus



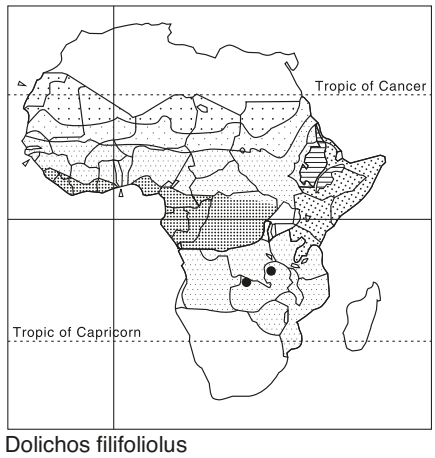
Dolichos dinklagei



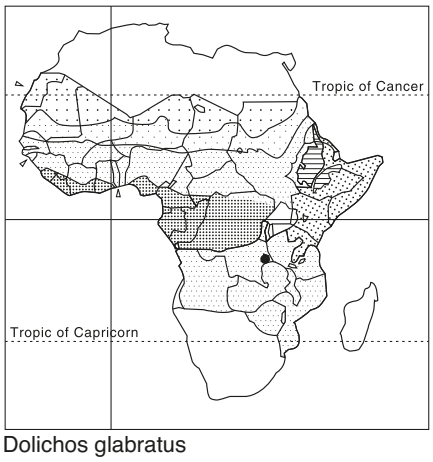
Dolichos dongaluta



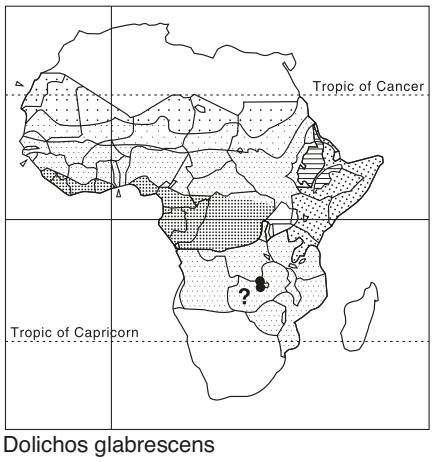
Dolichos elatus



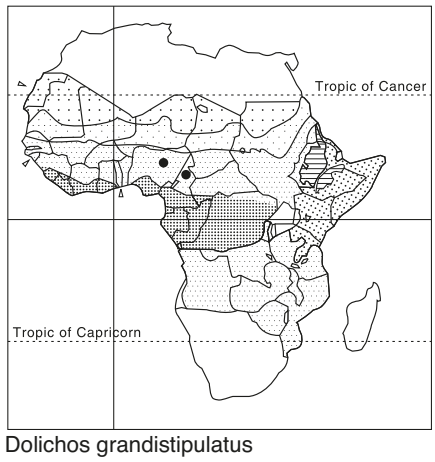
Dolichos filifoliolus



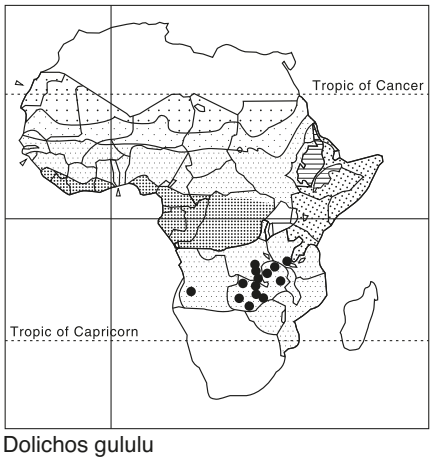
Dolichos glabratus



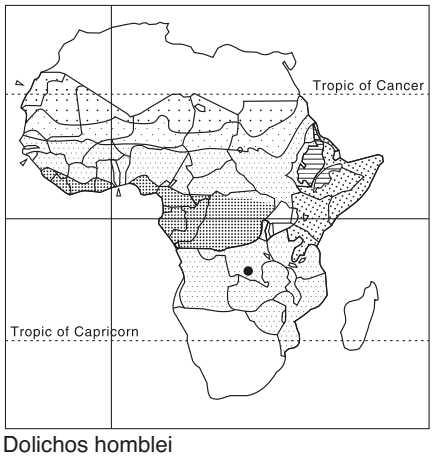
Dolichos glabrescens



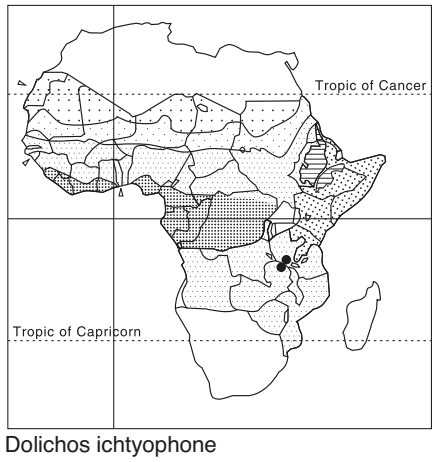
Dolichos grandistipulatus



Dolichos gululu



Dolichos homblei



Dolichos ichtyophone

D. oliveri Schweinf., incl. var. *kilimandscharicus* Taub. ex Bak. f.; excl. var. *vondensis* Fiori (= **D. kilimandscharicus)**.

syn.: *D. volkensii* Taub.; *D. maitlandii* Bak. f.

Perennial plant of varying habit, mostly an erect or rambling shrub, the shoots becoming scandent at their tips, or a woody climber, less often an erect woody herb, 0,3-2,4 m tall; often flowering when quite leafless; rootstock thick and woody, probably usually a large tuber but sometimes a collection of oblong-ellipsoid tubers; stems rather angular, sparsely pubescent to velvety with silvery to ferruginous hairs.

Grassland; thicket; scrub-bushland; woodland; often on rocky ground and near river; open *Terminalia-Combretum* woodland; 900-2400 m alt.

D. petiolatus R. Wilczek

Erect perennial herb 10-40 cm tall; rootstock woody, spherical, ± 5 cm Ø, containing a dark red resinous substance; stems probably single or few from each stock, sparsely branched above, usually zigzag, flattened, ± sulcate, almost glabrous or shortly hairy; flowers and leaves simultaneous.

Grassland with scattered trees; *Brachystegia* woodland; savanna; miombo woodland; dambo edges; on stony soil and laterite; 1200-1600 m alt.

D. pseudocajanus Bak., excl. var. *paniculatus* R. Wilczek (= **D. brevidentatus)**.

syn.: *D. saponarius* De Wild.

Subshrubby erect herb 0,6-2 m tall from a woody rootstock; stems annual, ridged, hairy or with lines of appressed hairs along the ridges and pubescent in between; flowers and leaves simultaneous.

Deciduous woodland; rocky places or outcrops; grassy savannas or wooded; termite mounds; miombo woodland; wooded tall-grassy meadows; 1350-1600 m alt.

A variant occurs in Ghana.

In Central Africa there is a good deal of variation.

D. pseudocomplanatus R. Wilczek

Subshrub, erect, to 65 cm tall, densely pubescent with spreading, whitish hairs; stems cylindrical, sometimes slightly ramose; leaves appearing after flowers; mature fruit and seeds unknown.

Savannas on plateau; very abundant; 1600 m alt.

Only known from the type collected in 1939.

D. quarrei R. Wilczek

Erect plant with ramose stems, sparsely pubescent to glabrous; flowers and leaves simultaneous; mature fruit and seeds unknown.

Grassy savannas; very abundant; 2000 m alt.

Only known from the type collected in 1945.

D. reptans Verdc.

Perennial, procumbent, ? ± 0,5-1 m long from a woody rootstock; stem coarse tough; branches 4-5-angled, pubescent; mature fruit and seeds unknown.

Grassy top of broad ridge with many rocks and few scattered shrubs of *Psorospermum, Protea;* amongst leaf-mould and in crevices of gneiss rocks; savanna with *Daniellia, Lophira;* 1440-1650 m alt.

Near *D. nimbaensis.*

D. schweinfurthii Harms

syn.: *D. bongensis* Harms

Erect or ascending perennial herb 0,3-1,3 m tall from a stout woody rootstock; sometimes flowering before the leaves appear; stems annual, fleshy, simple or sparsely branched, somewhat zigzag, ribbed, glabrous to densely pilose with spreading white hairs; flowers showy, blue-purple or pink-mauve.

Grassland subject to burning; recently cleared bushland; *Loudetia arundinacea* grassland with scattered trees; 1200-2300 m alt.

Very variable. Cf. under **D. compressus.**

D. sericeus E. Mey.

Perennial climbing or prostrate herb 0,6-2,1 m long; stems slender, covered with spreading appressed hairs.

Forest and derived grassland and thicket; bushland; dry evergreen forest; in elephant grass at forest edges; grassland or grassland with scattered *Acacia;* scrub; rocky savannas; granite pan; wooded stream sides; rain-forest with *Albizia, Macaranga, Croton, Ocotea; Acacia abyssinica* woodland; 1150-2780 m alt.

S. Africa, Swaziland.

Comprises 4 subspp.: – subsp. **sericeus** (syn.: *D. shuterioides* Bak.; *Rhynchosia sphaerocephala* Bak.); – subsp. **formosus** (A. Rich.) Verdc.: – subsp. **glabrescens** Verdc.: – subsp. **pseudofalcatus** Verdc. (confused with **D. trilobus)**.

D. sericophyllus R. Wilczek

Erect herb; stems ramose at base, cylindrical, to 40 cm long, tomentose with silky-whitish hairs, from a slender, woody, rootstock; flowers and leaves simultaneous; pod and seeds unknown.

Pasture on plateau; 1600 m alt.

Only known from the type collected in 1939.

D. serpens De Wild. – Icon.: Ann. Mus. Congo Belge, Bot., Sér. 4, 1: tab. 21, 1902.

Prostrate plant; stems zigzag, flattened, ± slender, furrowed, sparsely pubescent; flowers and leaves simultaneous; pod and seeds unknown.

Ecology unknown.

Only known from the type collected in 1899.

D. simplicifolius Hook. f.

Erect, prostrate or ascending perennial herb from a massive ellipsoidal tuberous rootstock 13 × 9 cm; stems branched, undulate or zigzag, glabrous or with sparse spreading hairs on the ribs.

Mixed *Brachystegia* woodland; dambos; shallow pans on rock outcrops in miombo woodland; 700-1600 m alt.

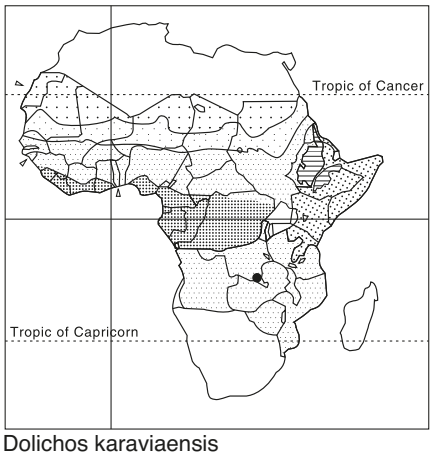
Not in Angola (= **D. antunesii)**.

D. subcapitatus R. Wilczek – Icon.: Kew Bull. 54: 420, 1999 (var. **angustifolius)**.

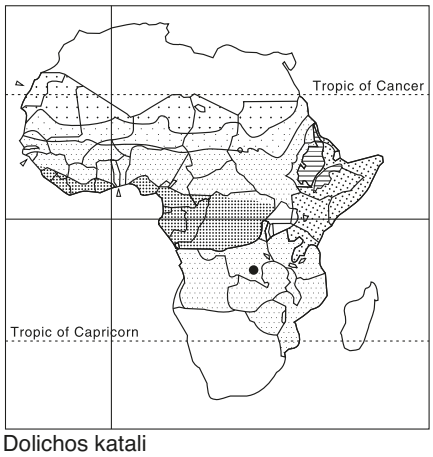
Prostrate, creeping to 40 cm long or erect herb to 30 cm, from a perennial woody rootstock 10-50 cm long, ± 2 cm Ø and probably more; stems annual, slightly angled, sparsely spreading pubescent or glabrous.

Dry sandy dambos; sandy places between rocks; grassy savanna with *Protea;* savanna with *Loudetia* on Kalahari sand; 1200-1500 m alt.

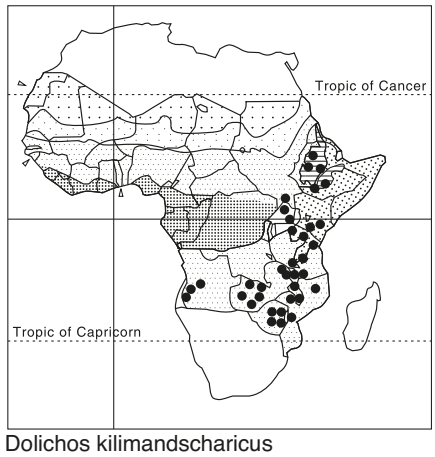
Comprises 2 vars.: – var. **subcapitatus** (prostrate herb); – var. **angustifolius** Mackinder (erect herb, only known from the type collected in 1975).



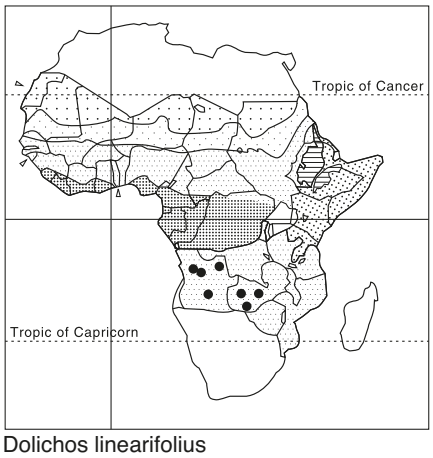
Dolichos karaviaensis



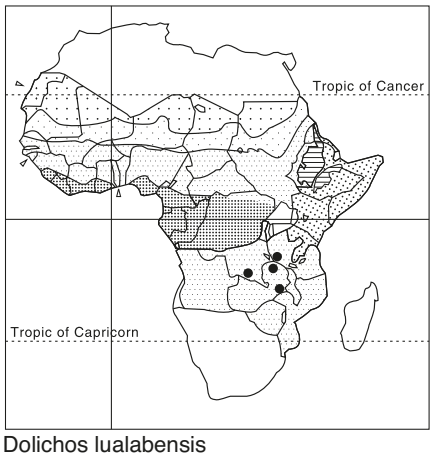
Dolichos katali



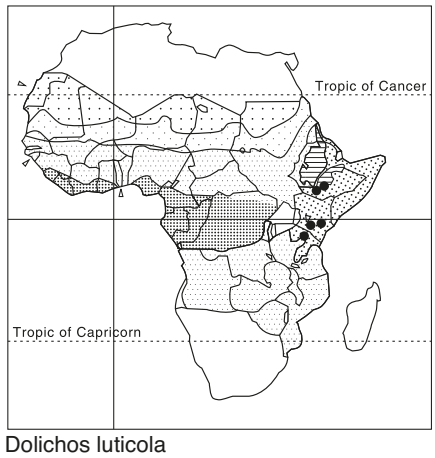
Dolichos kilimandscharicus



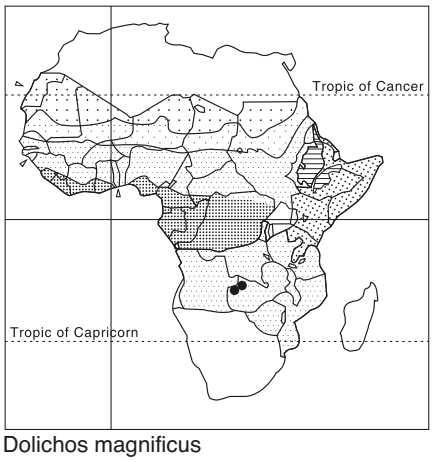
Dolichos linearifolius



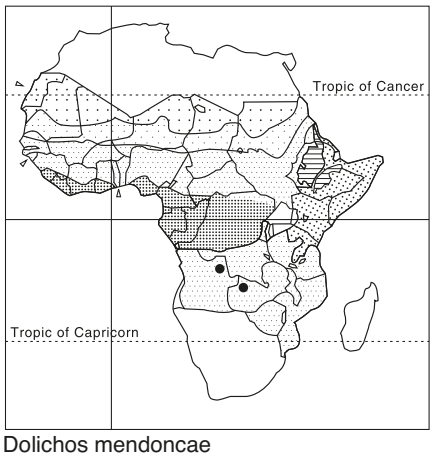
Dolichos lualabensis



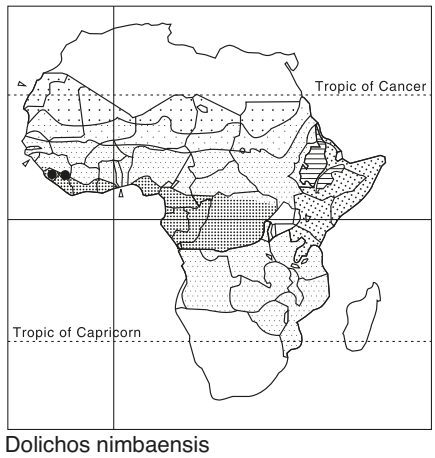
Dolichos luticola



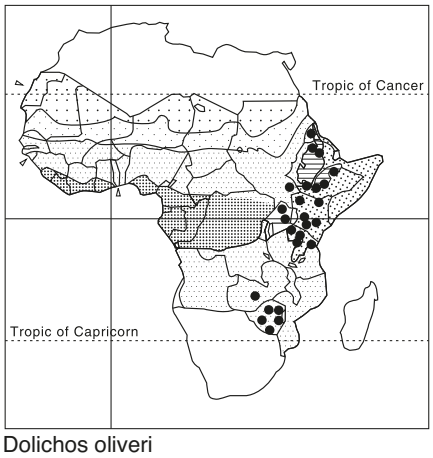
Dolichos magnificus



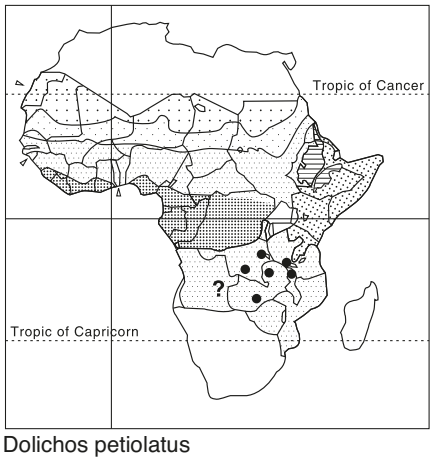
Dolichos mendoncae



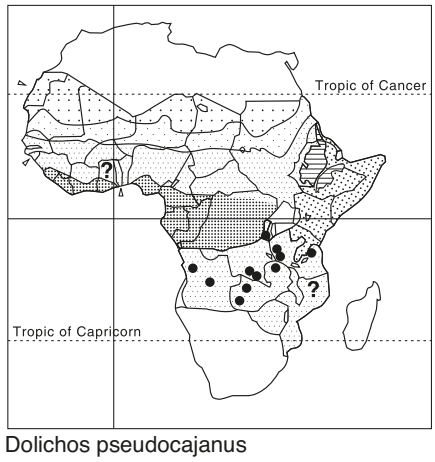
Dolichos nimbaensis



Dolichos oliveri



Dolichos petiolatus



Dolichos pseudocajanus

D. tonkouiensis Portères

syn.: *Tephrosia subalpina* A. Chev. p.p. quoad specim. Chevalier 19474, 21486, 21724.

Erect undershrub 0,4-1,5 m tall ; stems sharply angular, blackish, densely pubescent, slightly branched.

Wooded grassland ; common on the granitic outcrops of Macenta region in Guinea ; 870-1200 m alt.

D. trilobus L. p.p. ; Taxon 17 : 171, 1968.

Perennial climbing herb, sometimes prostrate, creeping and rooting at the nodes, 0,5-1 m long from a woody rootstock ; stems ± appressed puberulous or pubescent or with spreading hairs or glabrescent.

Grassland ; bushland ; forest and forest edges ; woodland ; sometimes in rocky places ; evergreen forest ; stream sides ; margins of pans ; secondary forests ; stony and sandy soils ; along brook ; rain-forest with *Chrysophyllum albidum, Cola gigantea, Erythrophleum suaveolens, Alstonia boonei, Parinari excelsa, Milicia excelsa ;* 0-1500 m alt.

Subsp. **transvaalicus** Verdc.in S. Africa, Namibia, Swaziland. Subsp. **trilobus** var. **trilobus** also in S. Africa.

Comprises 2 subspp. and 3 vars. (of subsp. **trilobus)** in our area : – subsp. **trilobus** (syn.: *D. debilis* Hochst. ex A. Rich.; *D. andongensis* Welw. ex Bak.; ? *D. formosoides* Harms) with var. **trilobus** and var. **stenophyllus** Verdc. (syn.: *D. schliebenii* Harms) and var. **richardsiae** Mackinder ; – subsp. **occidentalis** Verdc.

D. trinervatus Bak.

syn.: *D. tricostatus* Bak. f.; *D. pratorum* Harms ; *D. trinervis* De Wild.

Erect perennial plant, 0,3-0,8(-1,3) m tall, from a stout woody rootstock 10-20 × 2 cm ; stems several, cylindrical, not or sparsely branched near the apex, ± appressed-tomentose to pubescent with yellowish hairs. Seeds known !

Brachystegia woodland ; savanna ; miombo- or *Uapaca* -woodland ; *Hyparrhenia* open woodland ; granite and limestone outcrops ; dambo margins, near rivers and waterfalls ; 450-2100 m alt.

D. xiphophyllus Bak.

syn.: ? *D. monophyllus* Taub.

Erect perennial herb 0,3-0,5 m tall from a tuber ; stems unbranched or sparingly branched, sometimes zigzag, sparsely pilose or later glabrescent ; seeds unknown.

Moist or swampy grassland ; near river and in dambos ; 780-1750 m alt.

D. zovuanyi R. Wilczek

Erect herb ± pubescent from a napiform and half-woody rootstock ± 30 × 6 cm ; stems 6-7 cm long ; flowers and leaves simultaneous ; pods and seeds unknown.

Cleared ground ; 700 m alt.

Only known from the type collected in 1947.

SYNONYMS :

Dolichos adenophorus Harms = **Adenodolichos punctatus** subsp. **bussei**

africanus R. Wilczek = **Macrotyloma**

anchietae Hiern = **Adenodolichos rhomboideus**

andongensis Welw. ex Baker = **Dolichos trilobus** subsp. **trilobus**

angustifolius Vahl ex Guill. & Perr. = **Vigna vexillata** var. **angustifolia**

argenteus Willd. = **Pseudovigna**

argyrophyllus Harms = **Dolichos kilimandscharicus** subsp. **kilimandscharicus** var. **argyrophyllus**

axillaris E. Mey. = **Macrotyloma axillare**

var. *glaber* E. Mey. = **M. axillare** var. **glabrum**

var. *macranthus* Brenan = **M. axillare** var. **macranthum**

var. *pubescens* E. Mey. = **M. axillare** var. **axillare**

baueriana Endl. = **Canavalia rosea**

baumannii Harms = **Macrotyloma tenuiflorum**

bellus Harms = **Dolichos kilimandscharicus** subsp. **kilimandscharicus**

benadirianus Chiov. = **Macrotyloma uniflorum** var.

bengalensis Jacq. = **Lablab purpureus**

bieense Torre = **Macrotyloma**

biflorus Schumach. & Thonn. var. *occidentalis* Harms = **Macrotyloma biflorum** var. **biflorum**

biflorus sensu auct. = **M. axillare, M. uniflorum**

bongensis Harms = **Dolichos schweinfurthii**

brachypus Harms = **Neorautanenia**

brevicaulis Bak. = **Macrotyloma**

buchananii Harms = **Dolichos kilimandscharicus** subsp. **kilimandscharicus**

catjang Burm. f. = **Vigna unguiculata** subsp. **unguiculata** var. **unguiculata**

chevalieri Harms = **Droogmansia**

chrysanthus A. Chev. = **Macrotyloma biflorum** var. **biflorum**

var. *occidentalis* (Harms) R. Wilczek = **M. biflorum** var. **biflorum**

cylindricus Desv. ex Ham. = **Vigna vexillata** var. **vexillata**

daltonii Webb = **Macrotyloma**

debilis Hochst. ex A. Rich. = **Dolichos trilobus** subsp. **trilobus**

densiflorus Welw. ex Baker, incl. var. *angustus* Bak. f. = **Macrotyloma densiflorum** var. **densiflorum**

dewildemanianus R. Wilczek = **Macrotyloma**

dillonii Delile = **Vigna oblongifolia** var. **oblongifolia**

ellenbeckii Harms = **Neorautanenia mitis**

ellipticus R. E. Fr. = **Macrotyloma**

emarginata P. Beauv. = **Vigna luteola**

emarginatus Jacq. = **Canavalia rosea**

ensiformis L. = **Canavalia**

erectus Bak. f. = **Sphenostylis**

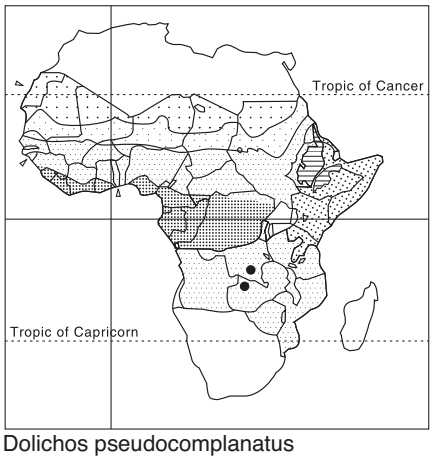
erectus De Wild. incl. var. *brevifolius* De Wild. = **Macrotyloma dewildemanianum**

eriocaulus Harms = **M. ellipticum**

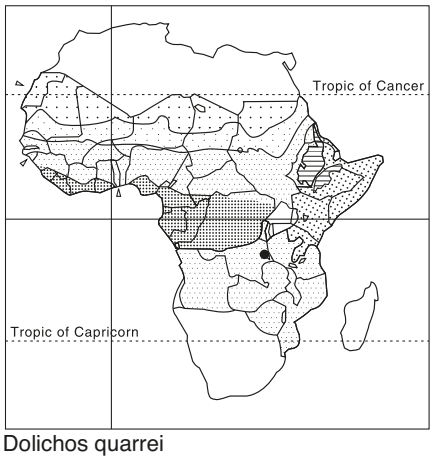
esculentus De Wild. = **M. fimbriatum**

falcatus Klein ex Willd. = **Dolichos trilobus** subsp. **trilobus** var. **trilobus**

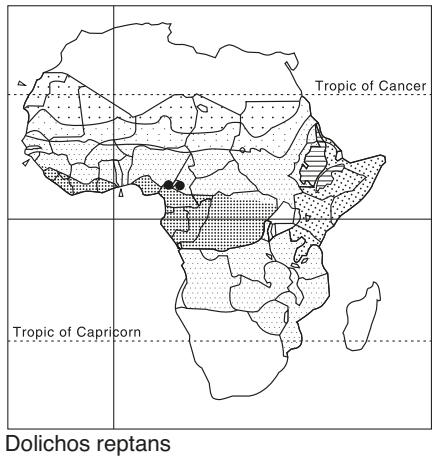
ficifolia (Benth. ex Harv.) Harms = **Neorautanenia**



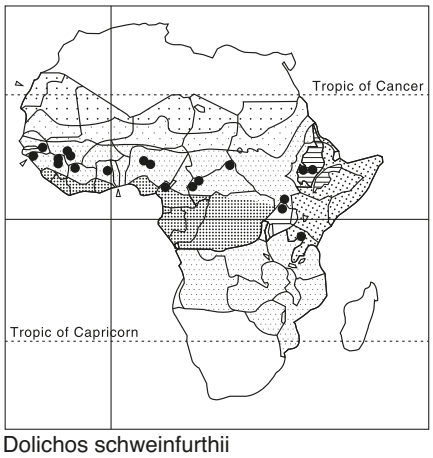
Dolichos pseudocomplanatus



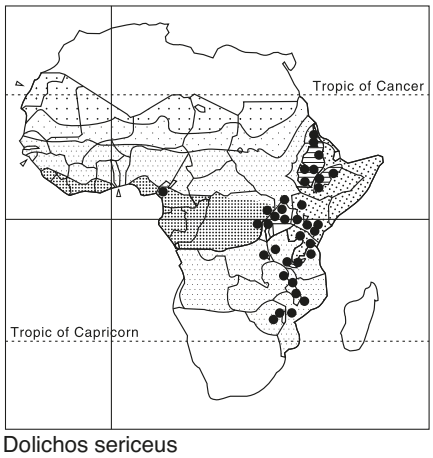
Dolichos quarrei



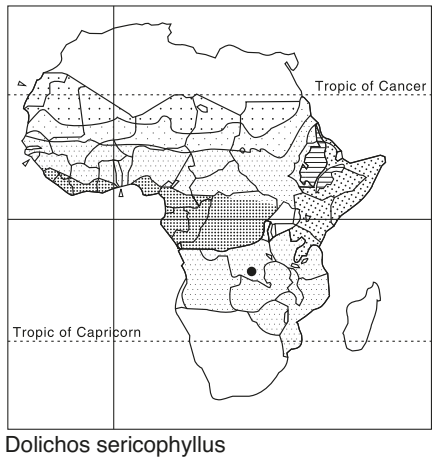
Dolichos reptans



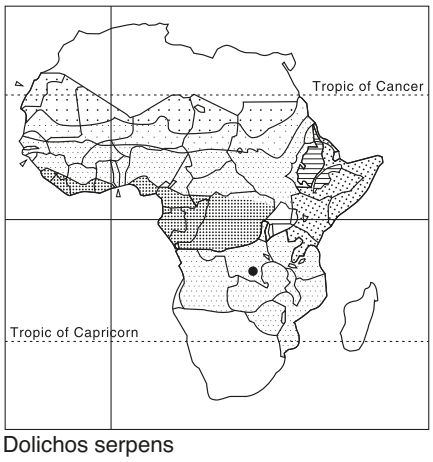
Dolichos schweinfurthii



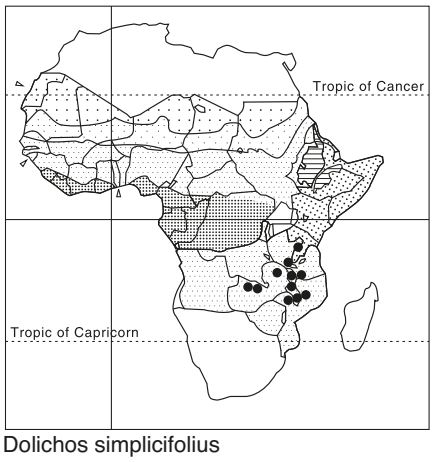
Dolichos sericeus



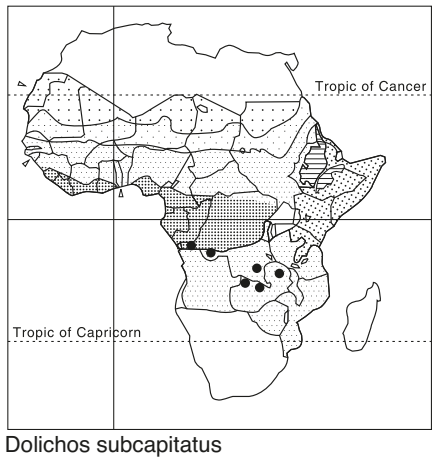
Dolichos sericophyllus



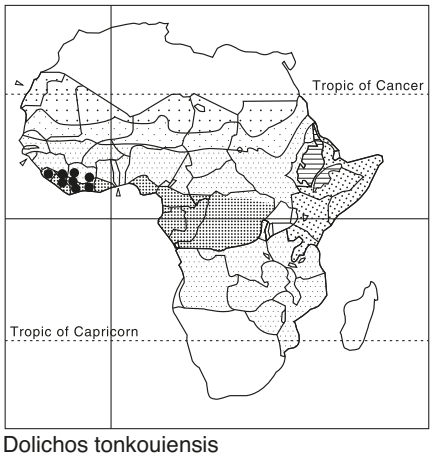
Dolichos serpens



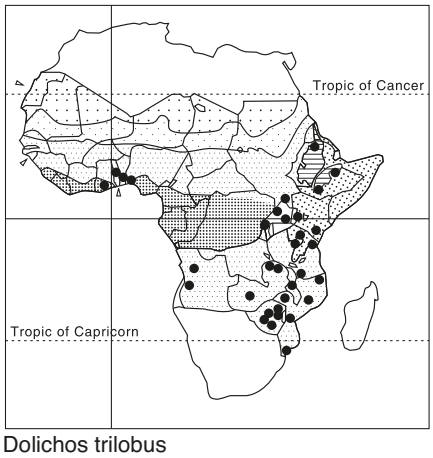
Dolichos simplicifolius



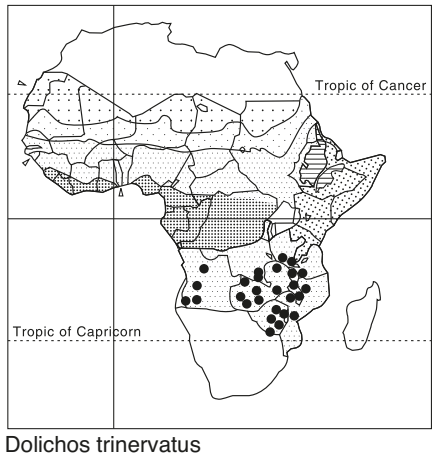
Dolichos subcapitatus



Dolichos tonkouiensis



Dolichos trilobus



Dolichos trinervatus

fimbriatus Harms = **Macrotyloma**

fischeri Harms = **M. stipulosum**

formosus A. Rich. = **Dolichos sericeus** subsp. **formosus**

formosus sensu auctt. = **D. sericeus** subsp. **sericeus**

gangeticus Roxb. = **Vigna luteola**

gardneri Bak. f. = **Haydonia monophylla**

genistiformis Chiov. = **Tephrosia interrupta**

giganteus Willd. = **Mucuna**

glycinoides Kunth = **Vigna luteola**

gladiatus Jacq. = **Canavalia**

goetzei Harms = **Dolichos kilimandscharicus** subsp. **kilimandscharicus**

gracilis Guill. & Perr. = **Vigna**

grahamianus (Wight & Arn.) Niyomdham = **Wajira**

hastifolius Schnizl. = **Vigna unguiculata** subsp. **unguiculata** var. **spontanea**

helicopus (E. Mey.) Steud. = **Vigna luteola**

hendrickxii De Wild. = **Macrotyloma densiflorum** var. **densiflorum**

hirtus Andrews = **Rhynchosia**

hockii De Wild. = **Macrotyloma**

hosei Craib = **Vigna**

junodii (Harms) Verdc. = **Nesphostylis**

kasaiensis R. Wilczek = **Macrotyloma rupestre**

katangensis De Wild. = **M. stipulosum**

lablab L. = **Lablab purpureus**

fa. *uncinatus* Penz. = **L. purpureus** subsp. **uncinatus** var. **uncinatus**

var. *rhomboideus* Schinz = **L. purpureus** subsp. **uncinatus** var. **rhomboideus**

var. *uncinatus* Chiov. = **L. purpureus** subsp. **uncinatus** var. **uncinatus**

subsp. *lablab* var. *crenatifructus* Rivals, nom., and var. *uncinatus* = **L. purpureus** subsp. **uncinatus** var. **uncinatus**

littoralis Vell. = **Canavalia rosea**

lobatus Willd. = **Pueraria montana** var.

longipes Buchwald = **Dolichos** ?

longistipellatus Harms incl. var. *gossweileri* Bak. f. = **Macrotyloma rupestre**

fa. *angustifolia* Bak. f. = **M. bieense**

lupiniflorus N. E. Br. = **Dolichos kilimandscharicus** subsp. **kilimandscharicus**

lupinoides Baker = **D. kilimandscharicus** subsp. **kilimandscharicus**

luteolus Jacq. = **Vigna luteola**

luteus Sw. = **V. luteola**

macrothyrsus Harms = **Adenodolichos paniculatus**

maitlandii Bak. f. = **Dolichos oliveri**

malosanus Baker = **D. kilimandscharicus** subsp. **kilimandscharicus** var. **argyrophyllus**

malosanus Taub. = **D. kilimandscharicus** subsp. **kilimandscharicus**

maranguensis Taub. = **Vigna parkeri** subsp.

maritimus Aubl. = **Canavalia rosea**

memnonia Del. = **Rhynchosia minima** var.

var. *candida* Welw. ex Hiern = **R. candida**

miniatus Kunth = **Canavalia rosea**

minimus L. = **Rhynchosia**

mitis A. Rich. = **Neorautanenia**

monophyllus Taub. = **Dolichos** ? **xiphophyllus**

montanus Lour. = **Pueraria**

nanus Harms = **Macrotyloma stipulosum**

niloticus Delile = **Vigna luteola**

obcordatus Roxb. = **Canavalia rosea**

obliquifolius Schnizl. = **Vigna unguiculata** subsp. **unguiculata** var. **spontanea**

obovatus Schumach. & Thonn. = **Canavalia rosea**

obtusifolius Lam. = **Canavalia rosea**

oleraceus Schumach. & Thonn. = **Vigna adenantha**

oliganthus Brenan = **Macrotyloma**

oliveri Schweinf. var. *vondensis* Fiori = **Dolichos kilimandscharicus** subsp. **kilimandscharicus**

orbicularis (Welw. ex Baker) Bak. f. = **Neorautanenia mitis**

ovatus Grah. = **Psophocarpus tetragonolobus**

paniculatus Hua = **Adenodolichos**

pearsonii Hutch. = **Lablab purpureus** subsp. **uncinatus** var. **rhomboideus**

phaseoloides Roxb. = **Pueraria**

platypus Bak. = **Droogmansia pteropus** var.

polystachios Forssk., non. L. = **Canavalia virosa**

praecox R. E. Fr. = **Dolichos gululu**

pratorum Harms = **Dolichos trinervatus**

procurrens Hiern = **Rhynchosia**

pruriens L. = **Mucuna**

pseudocajanus Welw. ex Baker var. *paniculatus* R. Wilczek = **Dolichos brevidentatus**

pseudopachyrhizus Harms incl. var. *kilimandschari* Harms and var. *subintegrifolius* Harms = **Neorautanenia mitis**

pteropus Bak. = **Droogmansia**

pubescens L. = **Macrotyloma uniflorum**

purpureus L. = **Lablab purpureus**

repens L. = **Vigna luteola**

reticulata Schltr. = **V. schlechteri**

reticulatus A. Rich. = **Rhynchosia elegans** var. **elegans**

rhomboideus O. Hoffm. = **Adenodolichos**

ringoetii De Wild. = **Macrotyloma densiflorum** var. **densiflorum**

roseus Sw. = **Canavalia rosea**

rotundifolius Vahl = **C. rosea**

rupestris Welw. ex Baker incl. var. *gossweileri* (Bak. f.) Torre = **Macrotyloma rupestre**

saponarius De Wild. = **Dolichos pseudocajanus**

scarabaeoides L. = **Cajanus**

schlechteri Harms ex Burtt Davy = **Decorsea**

schliebenii Harms = **Dolichos trilobus** subsp. **trilobus** var. **stenophyllus**

seineri Harms = **Neorautanenia brachypus**

DOLICHOS

shuterioides Baker = **Dolichos sericeus** subsp. **sericeus**

sinensis L. = **Vigna unguiculata**

splendens Bak. = **Dolichos** ? **kilimandscharicus**

var. *acutifolius* Welw. ex Bak. f. = **D. kilimandscharicus** subsp. **kilimandscharicus**

stenocarpus Hochst. ex A. Rich. = **Sphenostylis**

stenophyllus Harms = **Macrotyloma**

stipulosus Welw. ex Baker = **Macrotyloma**

fa. *angustifoliolatus* Bak. f. = **M. stipulosum**

var. *randii* Bak. f. = **M. stipulosum**

stolzii Harms = **Dolichos kilimandscharicus** subsp. **kilimandscharicus**

subcarnosus Wight & Arn. = **Wajira grahamiana**

suffultus Grah., nom. = **Psophocarpus scandens**

swynnertonii Bak. f. = **Dolichos kilimandscharicus** subsp. **kilimandscharicus**

taubertii Bak. f. = **Macrotyloma maranguense**

tenuiflorus (Micheli) R. Wilczek = **Macrotyloma**

tetragonolobus L. = **Psophocarpus**

tricostatus Baker = **Dolichos trinervatus**

trilobus sensu Thunb., non L. = **Vigna unguiculata** subsp. **stenophylla**

trinervis De Wild. = **Dolichos trinervatus**

ufiomensis Heering = **D. kilimandscharicus** subsp. **parviflorus**

umbellatus Thunb. = **Vigna**

uncinatus L. = **Teramnus**

uncinatus Schweinf. = **Lablab purpureus** subsp. **uncinatus**

unguiculatus L. = **Vigna**

uniflorus Lam. = **Macrotyloma**

var. *stenocarpus* Brenan = **M. uniflorum** var.

urens Jacq., non L. = **Mucuna sloanei**

venulosus Hiern = **Rhynchosia totta** var. **fenchelii**

virosus Roxb. = **Canavalia cathartica**

volkensii Taub. = **Dolichos oliveri**

zanzibarensis Bak. f. = **Macrotyloma maranguense**

DORYCNOPSIS **= VERMIFRUX**

DROOGMANSIA / *20*

The genus is not disjunct as considered earlier because *D. godefroyana* is now included in *Tadehagi* Ohashi, 1973 (from Indochina; with a non-stipitate fruit and much less dilated filaments; however, *D. gossweileri* has a sessile fruit).

Species poorly defined and based on sparse and/or incomplete material: for 5(+1) species (= 25 %) no fruit is known, and for further 2 (+1?) species (= 10 %) the mature fruit is lacking (together = 35-45 %); for 1(+5?) species (=5 % + 25 %) no seeds are seen; for 3 species (= 15 %) the ecology is not recorded; no corolla is known for one species (= 5 %); 4 (+2?) species (= 20+10? %) are known only from the type.

Droogmansia angolensis Torre

Subshrub, erect, with a rhizome; stem simple, tomentose to 2 m tall; bark longitudinally striate.

Savanna?; 1670-1700 m alt.

Near *D. reducta.*

Zaire (Katanga)?

D. chevalieri (Harms) Hutch. & Dalziel; Bull. Soc. Bot. France 92: 245, 1945.

bas.: *Dolichos chevalieri* Harms

Erect woody herb with strongly ribbed stem, pilose on the ribs; leaves 2,5-2,8 cm broad; bracts caducous, inflorescence dense; mature pod and seeds unknown?

On hardened soil; ? ± 500-1800 m alt.

D. dorae Torre

Erect shrub with glabrescent stems; bark longitudinally striate.

Stream sides.

Comprises 2 vars. (fruit unknown in var. **dorae)**.

D. elongata B. G. Schubert

Subshrub with a single sterile leafy stem from a woody rhizome, subangular, ribbed, to 30 cm tall, densely and finely pubescent with also long, scattered hairs; flowering stems to 50 cm tall, without leaves; pod and seeds unknown.

Grassy savanna near spring; 1830 m alt.

Only known from the type collected in 1949.

D. gossweileri Torre

Shrub ± 1,5 m tall, with stems from a woody rhizome, pubescent; fruit *sessile.*

Ecology unknown; 1800 m alt.

D. grandiflora B. G. Schubert

Subshrub with cylindrical, densely hairy stems at least at the base and a woody rhizome; ripe fruit unknown.

Grassy savanna; 1700-1815 m alt.

Comprises 2 vars.: – var **grandiflora;** – var. **angusta** B. G. Schubert.

DROOGMANSIA

D. lancifolia Schindler

Subshrub with several simple stems, slightly pilose and hooklike-puberulous ; corolla and seeds unknown.

Ecology unknown.

Only known from the type collected in 1912.

D. longirhachis B. G. Schubert

Subshrub with sterile stems from the year 25 cm tall, subangular, striate, finely puberulous and slightly appressed-pilose ; rests of the stems from the former year 40-60 cm tall ; flowering stems to 90 cm tall.

Burned grassy savanna with rocky outcrop (caves).

Only known from the type collected in 1947.

Very similar to certain stages of **D. pteropus** var. **pteropus.**

D. megalantha (Taub.) De Wild., *excl.* var. *longipedicellata* De Wild. (poorly known).

bas.: *Desmodium megalanthum* Taub.

syn.: *Meibomia megalantha* (Taub.) Hiern

Rhizomatous subshrub with several stems 0,15-1,2 m tall from a woody rootstock, or a shrub with fewer stems 1,2-2 m tall ; stems pubescent to densely appressed-silvery-pilose or almost glabrous.

On rather dry sparingly bushy hills (very abundant) ; thickets alongside forests in somewhat sandy places (not scarce but local) ; open, grassy mixed woods (common) ; hot sunny situation in red gravelly soil (common) ; with *Ochna, Parinarium capense* (abundant) ; grassland ; 1700 (? and less)-2000 m alt.

Comprises 2 vars.: – var. **megalantha ;** – var. **pilosa** (Taub.) De Wild. [bas.: *Desmodium megalanthum* Taub. var. *pilosum* Taub. ; syn.: *Meibomia huillensis* Welw. ex Hiern].

Until better understood the Zambian specimen Milne-Redhead 1107 is placed under *D. megalantha* var. *megalantha.*

D. montana Jacq.-Fél.

Shrub 1,5 m tall, very ramose ; young branches pubescent becoming glabrous.

Plateau.

D. munamensis De Wild.

Subshrub to 50 cm tall or more ; stem subangular to cylindrical, slightly pilose with erect hairs at least at the base ; pod unknown.

Burned meadows ; plantations.

Specimens from W Zambia (Fanshawe 1530, and perhaps Fanshawe 1406) cited in the remarks under *D. pteropus* var. *pteropus* by Verdcourt in Fl. Zambes. 3/6 : 29, 2000) seem to belong to *D. munamensis.*

D. pteropus (Bak.) De Wild. – Icon.: Ann. Mus. Congo Belge, Bot., Sér. 4, 1: tab. 23, 1904.

bas.: *Dolichos pteropus* Bak.

syn.: *Desmodium stuhlmannii* Taub. ; *Droogmansia stuhlmannii* (Taub.) De Wild.

Perennial herb, subshrub or shrub (0,1-)0,6-2,5(-3) m tall, with several shoots from a woody rootstock [very rarely a tree to 3 (-? 4,5) m] ; stems glaucous, glabrous or appressed pubescent or velvety.

Brachystegia, Combretum, Diplorhynchus, Pericopsis and similar deciduous woodlands ; *Brachystegia, Julbernardia* woodland (incl. dry) ; dry grassland ; *Brachystegia, Uapaca, Protea, Combretum* woodland ; poor *Parinari, Dodonaea* secondary bushland ; forest gallery ; dambo edges ; playing fields ; floodplain grassland, etc. ; 710-2250 m alt.

DROOGMANSIA PTEROPUS

Comprises 7 vars.: – var. **pteropus,** incl. fa. *velutina* B. G. Schubert [syn.: *D. hockii* De Wild. ; *D. platypus* (Bak.) Schindler var. *hockii* (De Wild.) B. G. Schubert] ; – var. **angustipetiolata** Verdc. : – var. **axillaris** Verdc. : – var. **giorgii** (De Wild.) Verdc. [bas. : *D. giorgii* De Wild.] ; – var. **platypus** (Bak.) Verdc. [bas. : *Dolichos platypus* Bak. ; syn. : *Droogmansia platypus* (Bak.) Schindler *excl.* var. *hockii* (De Wild.) B. G. Schubert ; *D. longipes* R. E. Fries] ; – var. **quarrei** (De Wild.) Verdc. (cf. note under *D. longistipitata* De Wild. at the end of the species list) ; – var. **whytei** (Schindler) Verdc. [syn. : *D. friesii* Schindler] (intermediates with var. **pteropus** frequent).

This arrangement is not very satisfactory. Field studies are needed to determine if certain “species” always have separate flowering and leafy shoots ; some species are very variable in areas subject to almost annual burning. Variations under different climatic conditions must be studied.

D. reducta De Wild.

syn.: *D. homblei* De Wild.

Subshrub to 25 cm tall with furrowed to cylindrical stems, spreading hairy at the base, becoming glabrescent and hooklike-pubescent ; pod unknown.

Forest ; sandy pasture ; near brook ; plain.

D. scaettaiana A. Chev. & Sillans

Similar to *D. chevalieri* but with flowers denser at the apex of the inflorescence, persistant bracts and narrower leaves (1-2 cm broad) ; stems angled ± 3 mm thick, 1,5-2 m tall ; ripe fruit unknown.

Grassy slopes ; bush on granite with *Dissotis leonensis, Allophylus africanus, Psorospermum febrifugum, Syzygium macrocarpum ;* savanna with *Kotschya lutea ;* rocky savanna with *Solenostemon latifolium, Cissus doeringii, Dissotis leonensis, Afrotrilepis pilosa, Ophioglossum gomezianum ;* meadow with *Dissotis leonensis, Psorospermum febrifugum, Pavetta lasioclada ;* gallery ; also savanna in plain ; ± 1000-1600 m alt.

Intermediates **D. chevalieri – D. scaettaiana** exist.

D. sillansiana A. Chev.

Erect subshrub ± 70 cm tall ; branches subangular, finely furrowed, glabrous, 3-4 mm thick ; fruit unknown ?

Savanna with *Uapaca somon ;* rocky hills ; among small granite blocks ; hardened soil ; ± 1200 m alt.

? Only known from the type collected in 1951.

D. tenuis B. G. Schubert

Subshrub with sterile stems, those of the previous year to 25 cm tall, subangular and puberulous ; annual stems slender, subangular hooklike-puberulous and very sparsely hairy.

Swampy ground ; Katanga-forest ; grassy savanna.

Comprises 2 vars.: – var. **tenuis ;** – var. **laxa** B. G. Schubert

D. tisserantii Sillans

Subshrub with rhizomatous base and erect stem, subangular, glabrous or slightly hairy, finely striate, ± 2-3 mm thick ; fruit unknown.

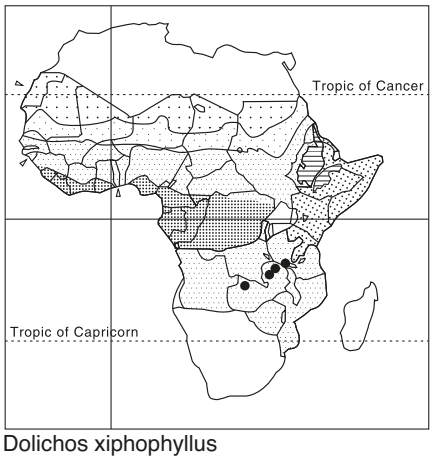
Plantation ; hardened soil.

? Only known from the type collected in 1937.

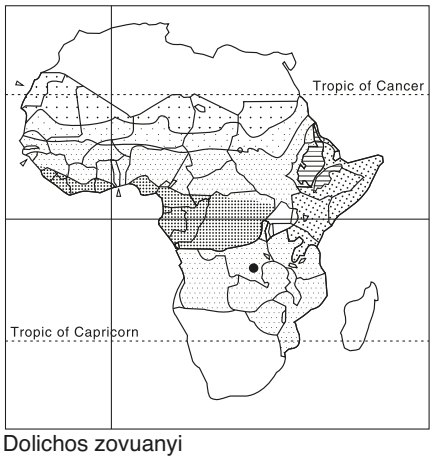
D. vanderystii De Wild.

Subshrub or shrub 1,5-2 m tall, rhizomatous ; leaves rufous-tomentose and wrinkled below ; stems with prominent ribs.

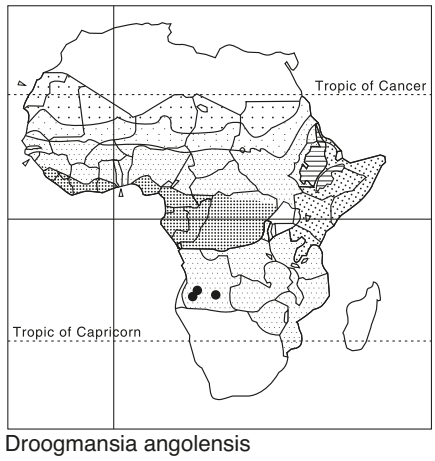
Savannas.



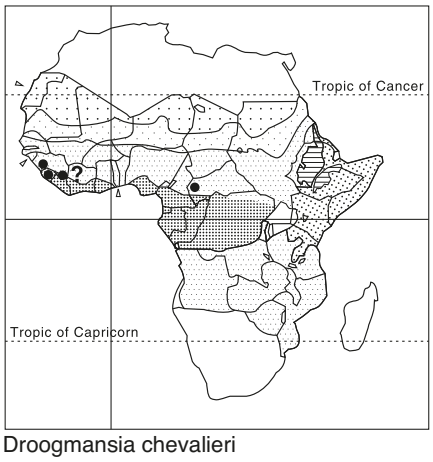
Dolichos xiphophyllus



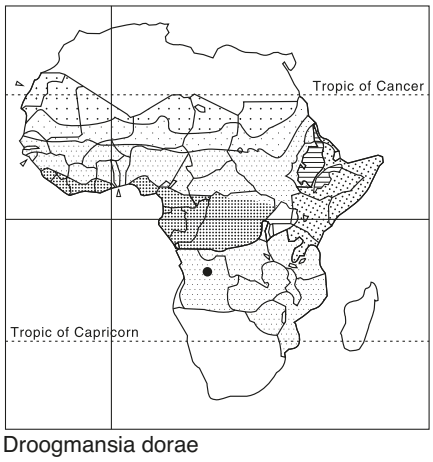
Dolichos zovuanyi



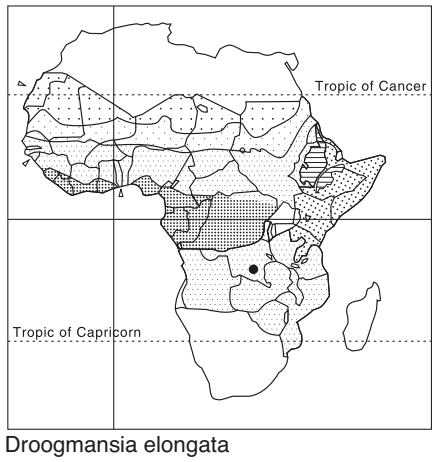
Droogmansia angolensis



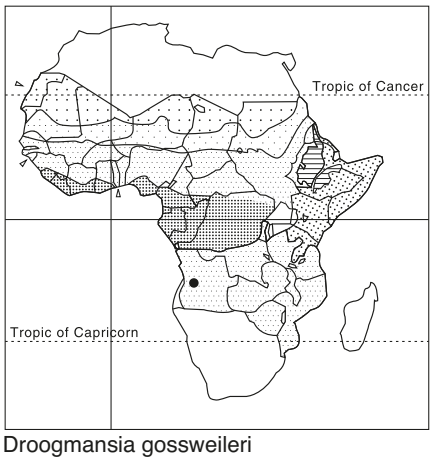
Droogmansia chevalieri



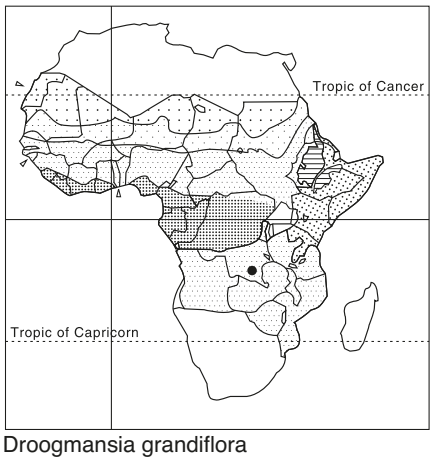
Droogmansia dorae



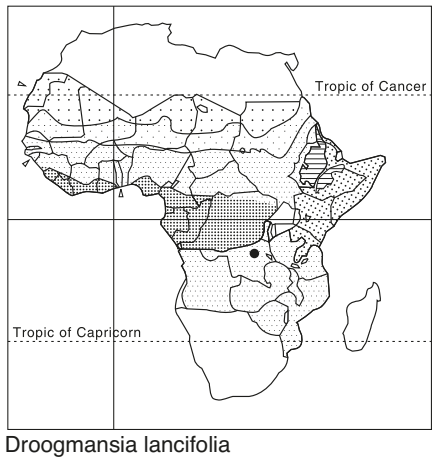
Droogmansia elongata



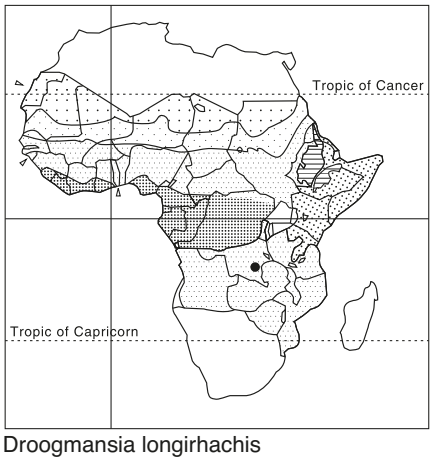
Droogmansia gossweileri



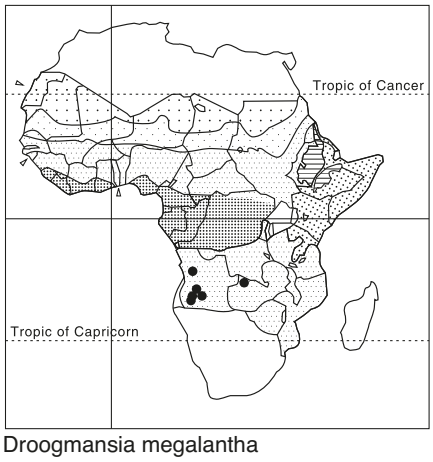
Droogmansia grandiflora



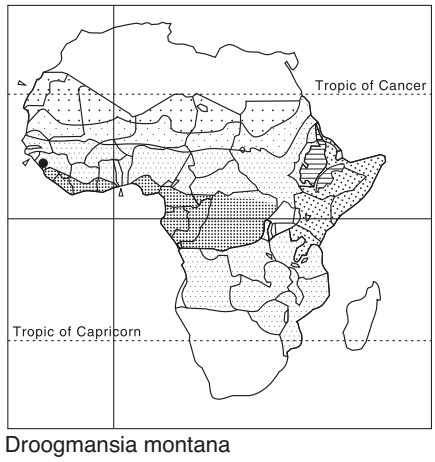
Droogmansia lancifolia



Droogmansia longirhachis



Droogmansia megalantha



Droogmansia montana

DROOGMANSIA

D. van-meelii B. G. Schubert

Subshrub from a woody rhizome ; stems cylindrical, striate, hook-like-puberulous and with rare spreading hairs ; pod unknown.

Rocky slopes ; grassy savanna.

D. velutina B. G. Schubert

Shrub 1,75-2 m tall with angular, velvety stem.

Ecology unknown ; 1740 m alt.

Only known from the type collected in 1945.

Droogmansia longistipitata De Wild. from Cameroon, is a variant linking var. **quarrei** and var. **angustipetiolata** of **D. pteropus** (fide Verdcourt).

SYNONYMS :

Droogmansia friesii Schindler = **Droogmansia pteropus** var. **whytei**

giorgii De Wild. = **D. pteropus** var. **giorgii**

hockii De Wild. = **D. pteropus** var. **pteropus**

longipes R. E. Fr. = **D. pteropus** var. **platypus**

longistipitata De Wild. = **D. pteropus,** intermediate var. **angustipetiolata –** var. **quarrei**

megalantha (Taub.) De Wild. var. *longipedicellata* De Wild. = ?

platypus (Baker) Schindler = **D. pteropus** var. **platypus**

var. *hockii* (De Wild.) B. G. Schubert = **D. pteropus** var. **pteropus**

quarrei De Wild. = **D. pteropus** var. **quarrei**

stuhlmannii (Taub.) De Wild. = **D. pteropus**

whytei Schindler = **D. pteropus** var. **whytei**

DUMASIA / *1*

Dumasia villosa DC. var. **villosa**

Trailing or climbing perennial herb 1,5-3 m long ; stems slender, 1-2 mm Ø, covered with spreading ferruginous to pale yellow hairs.

Evergreen forest ; secondary *Artemisia* thicket ; riverine forest ; mushitu ; at edges and in clearings of forest ; *Acanthus* formations, etc. ; 1000-2550 m alt.

S. Africa, Swaziland ; Madagascar. – Var. **leiocarpa** (Benth.) Bak. : India, China, Malaysia.

EMINIA / *4*

Eminia antennulifera (Bak.) Taub. – Icon. : Belg. J. Bot. 125 : 47, 1992 ; Ber. Deutsch. Bot. Ges. 9 : pl. 2, 1891.

bas. : *Rhynchosia* ? *antennulifera* Bak.

syn. : *Eminia eminens* Taub. ; *E. major* Harms

Erect or climbing herb or subshrub 0,75-1,8 m tall, often woody at the base, often flowering when quite short after burns ; branches slender to stout, hirsute at first, later glabrescent ; leaves appearing after the flowers, more rarely together with them ; roots woody, rosary-like.

Deciduous bushland ; *Brachystegia* woodland ; miombo ; mixed deciduous woodland ; 150-1500 m alt.

EMINIA

E. benguellensis Torre, incl. var. *huillensis* Torre

Shrub with erect, striate, pubescent stems ± 1 m tall, from a large woody rootstock.

Savanna ; 1750-1900 m alt.

E. harmsiana De Wild. – Icon. : Belg. J. Bot. 125 : 47, 1992 ; Ann. Mus. Congo Belge, Bot., Sér. 4, 1 : tab. 44, 1903.

Erect herb or subshrub 1-1,5 m tall ; branches hirsute ; 4-5 woody roots from the collar.

Miombo woodland ; ± 1200 m alt.

Rare species restricted to the Zambian Copperbelt area and to two areas in Zaire : Kundelungu and Lubumbashi ; endangered ; lost on Mount Muken.

E. holubii (Hemsl.) Taub. – Type from Zimbabwe not from Lesotho. – Icon. : Belg. J. Bot. 125 : 49, 1892.

bas. : *Rhynchosia holubii* Hemsl.

Shrub with woody roots 4-5 from the collar, 10 cm Ø at the top, 60 cm long ; with herbaceous stems trailing or climbing or erect, becoming ± woody, furrowed, greyish, to 1,6 m tall.

Miombo, *Baikiaea* and mixed woodland on Kalahari sand ; often in grassy or disturbed places ; wooded ± swampy savanna ; c. 900-1050 m alt.

Botswana.

SYNONYMS :

Eminia eminens Taub. = **Eminia antennulifera**

major Harms = **E. antennulifera**

noldeana Harms = **E. holubii**

polyadenia Hauman, incl. var. *intermedia* Hauman = **E. holubii**

ERIOSEMA / *85*

[Eriosema (DC.) Desv. recommended over conserved (DC.) G. Don ; R. Fortunato & al., Taxon 54 : 528, 2005.]

Several species are poorly known and material is scanty : for 7 species (= 8 %) the pod is unknown, for another one only the immature pod is known, for further 2 species the presence of a pod is uncertain (together = 9 species = over 10 %) ; for 3 species (= c. 3,5 %) no ecology is recorded ; for 1 species the flower colour is unknown ; 8 species (over 9 %) are known only from the type.

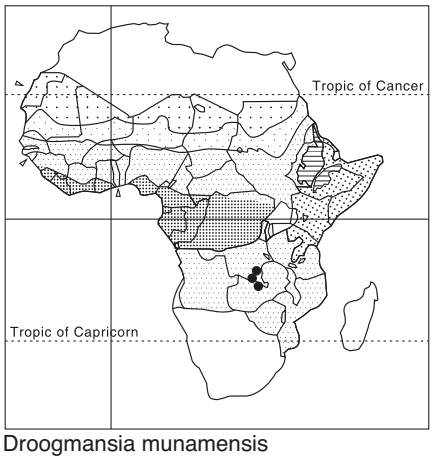
BAKER, E. G. (1895). Revision of the African species of Eriosema. *J. Bot.* 33 : 97-100 ; 141-148 ; 227-237.

STANER, P. & A. DE CRAENE (1934). Note sur quelques Eriosema de l'Oubangui français. *Ann. Soc. Sci. Bruxelles, Sér. B.* 54 partie 1 : *Compt.-Rend. Séances :* 59-72.

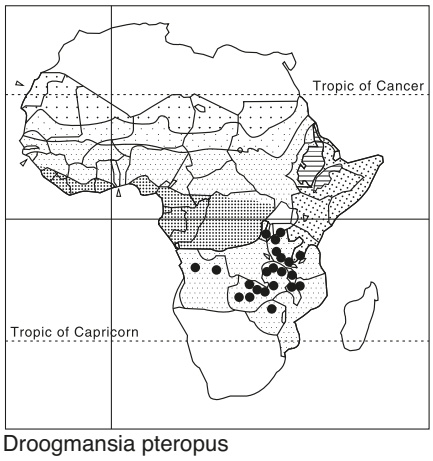
STANER, P. & A. DE CRAENE (1934). Les Eriosema de la Flore Congolaise. *Ann. Mus. Congo Belge, Bot., Sér. 6,* 1 : 37-92.

STANER, P. & A. DE CRAENE (1934). Contribution à l'étude des espèces africaines du genre Eriosema Desv. *Rev. Zool. Bot. Africaines* 24(3) : 284-291.

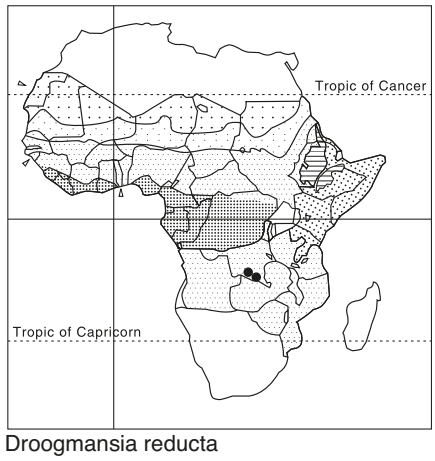
TISSERANT, C. (1930). Eriosema de l'Oubangui. *Bull. Mus. Natl. Hist. Nat., Sér. 2,* 2 : 313-323.



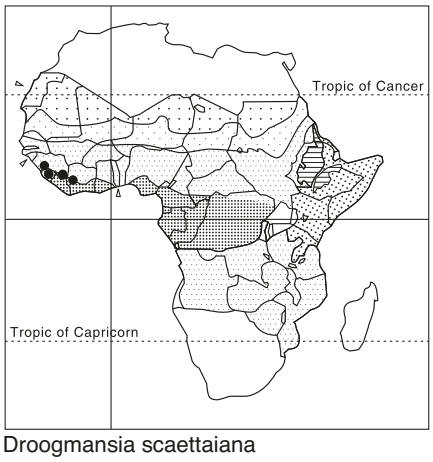
Droogmansia munamensis



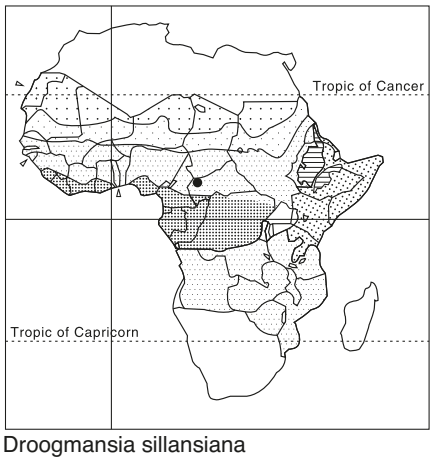
Droogmansia pteropus



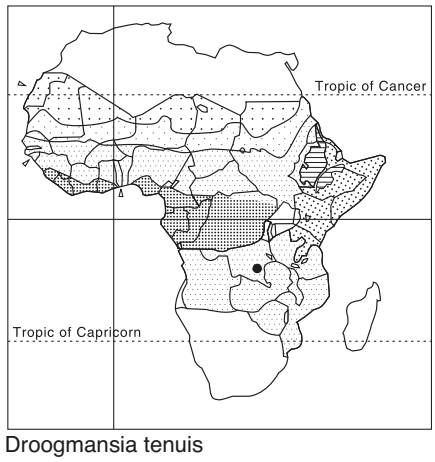
Droogmansia reducta



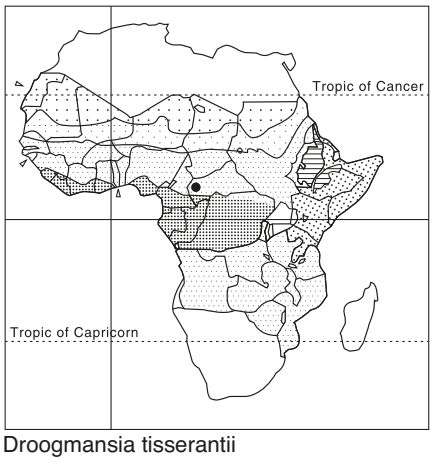
Droogmansia scaettaiana



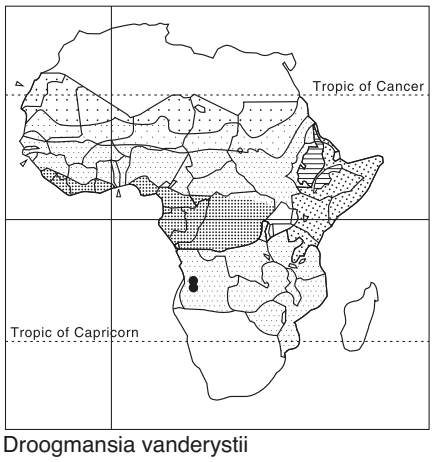
Droogmansia sillansiana



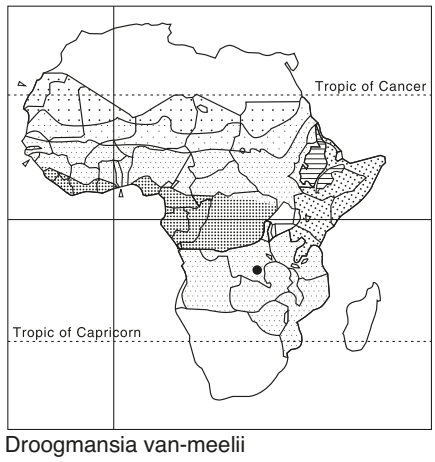
Droogmansia tenuis



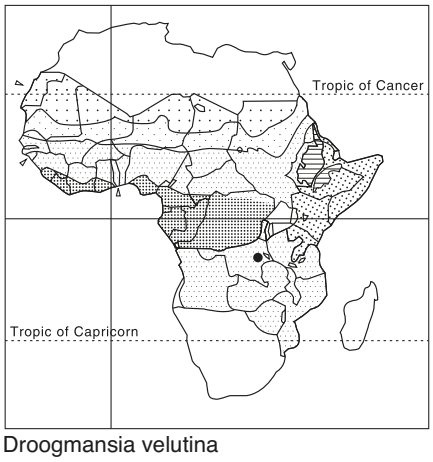
Droogmansia tisserantii



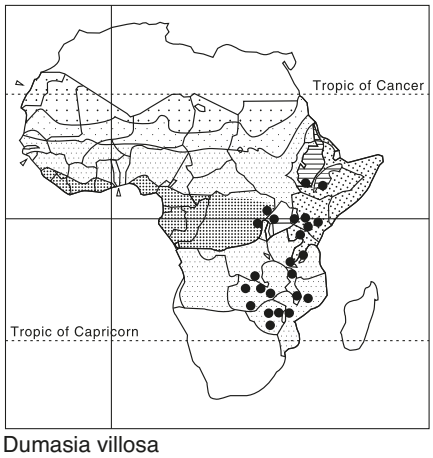
Droogmansia vanderystii



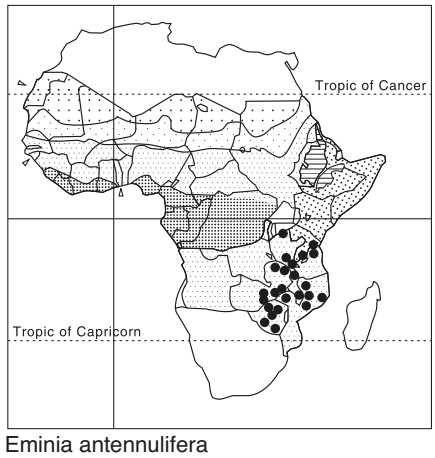
Droogmansia van-meelii



Droogmansia velutina



Dumasia villosa



Eminia antennulifera

ERIOSEMA

Eriosema adamaouense Jacq.-Fél.

Shrub 1,5-2 m tall with furrowed stems and whitish indumentum specially on the ribs, appressed ascendant on older parts, ± spreading on the young ones ; pod unknown.

Meadow ; ± 1600 m alt.

Only known from the type.

E. adamii Jacq.-Fél.

Shrublet with a tuberous taproot ; stems 1 to several, pubescent, 3-4 cm tall, slender.

Sandstone soil.

Only known from the type collected in 1958.

E. affine De Wild., incl. fa. *major* Bak. f.

Erect branched subshrub 0,8-1,8 m tall ; stem 3 mm Ø ; branches blackish, ridged, younger parts greyish pubescent, older parts glabrous. Sometimes flowering on leafless stems.

Brachystegia woodland ; *Julbernardia-Uapaca* woodland and scrub ; grassland ; savanna ; open thickets (common) ; river banks (open mixed woods among grasses) ; 700-1700 m alt.

E. afzelii Bak. ; Adansonia, Sér. 2, 11 : 192, 1971.

Stiff erect annual herb, stout, 0,4-1 m tall, densely clothed with silky hairs.

Wooded savanna ; lateritic plateaux amongst grasses.

E. albo-griseum Bak. f.

Stems numerous, erect, 0,9 m tall from a perennial many-headed rootstock.

Rocky pasturage ; 1300 m alt.

Comprises 2 subspp.

E. andohii Milne-Redh. ; Adansonia, Sér. 2, 11 : 161, 1971.

Subshrub, erect, rather ramose 1-1,5 m tall ; near *E. psoraleoides* but leaves more sessile (2-3 mm not 2-6), without rachis (not rachis 2-6 mm), rather silky, glabrescent above ; leaflets 3, with pennate nervation different from those of *E. molle ;* racemes axillary with 15-25 flowers (not many-flowered).

River banks with *Themeda, Hyparrhenia* spp. ; forest gallery edges with *Anogeissus ;* gregarious ; frequent at edge of swampy patches in savanna ; in open, savanna forest ; 180-270 m alt.

Flowers ornamental.

E. angolense Bak. f. ; Adansonia, Sér. 2, 11 : 177, 1971.

Herb or shrub 0,6-3 m tall ; stem erect, 5 mm Ø, very angular, ferruginous-pubescent.

Wooded savanna ; roadside ; swamps, dambos, waste grassy places ; 1070-1680 m alt.

E. stanerianum Hauman and its var. *flavescens* Hauman are perhaps synonyms.

E. arachnoideum Verdc.

Perennial herb with 1-several erect sparingly branched stems ± 25 cm tall from a woody rootstock ; stems pubescent and also pilose with ± spreading white hairs.

On ant hills in marshy ground around lake ; grassy clearings in forest ; 1800-1900 m alt.

ERIOSEMA

E. bauchiense Hutch. & Dalziel ; Adansonia, Sér. 2, 11 : 182, 1971.

Erect pyrophytic herb with several to many ± unbranched stems 7-42 cm tall, 3 mm Ø, from a large woody rootstock ; stems of 3-6 internodes, dark purplish-brown, glabrescent or sparsely pilose and with sparse glands ; flowers sweetly scented.

Grassland, seasonally burnt with numerous other pyrophytes and often some forest remnants ; open *Brachystegia, Uapaca, Parinari,* woodland ; poor soil ; 1000-2100 m alt.

E. benguellense Rossberg

Erect stems brown or silvery-villose, to 1 m tall ; ? pod and seeds unknown.

Grassland ; open bush ; *Acacia* forest ; 1400-1700 m alt.

E. bieense Torre

Herb with ramose stems, pilose, ± prostrate, 5-13 cm tall from a napiform root.

Bush on ash-grey sand ; ± 1280 m alt.

Only known from the type collected in 1960.

E. bogdanii Verdc.

Sparsely branched erect perennial herb 0,3-0,6 m tall, from a woody rootstock ; branches densely covered with spreading pale ferruginous hairs.

Seasonally waterlogged *Loudetia* grassland with scattered *Combretum ;* fireswept *Combretum, Piliostigma* grassland slopes on red soil ; locally frequent ; 900-1110 m alt.

E. brachybotrys Harms

Subshrub with erect, very ramose stems to ?0,5 m tall ; branches slender with long white hairs ; pod and seeds unknown.

Open places (?savanna). Rare.

Only known from the type collected in 1908.

E. buchananii Bak. f., excl. var. *richardii* (Bak. f. & Haydon) Staner and fa. *ellipticum* (Staner & De Craene) Staner (= **E. nutans)** ; Adansonia, Sér. 2, 11 : 167, 1971.

syn. : *E. richardii* Benth. ex Bak. f. & Haydon var. *ovatum* Staner & De Craene

Perennial subshrubby herb 0,1-1,5 m tall, from a woody rootstock ; branches erect or decumbent, densely covered with spreading ferruginous hairs.

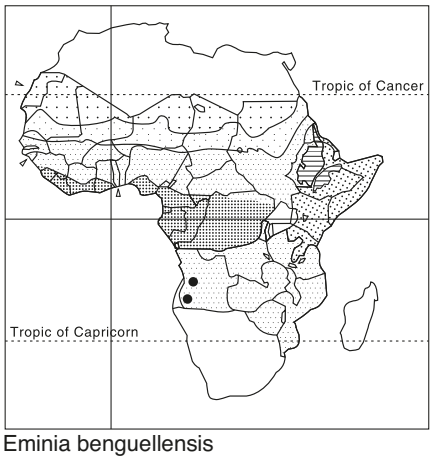
Grassland ; grassland with scattered trees ; burnt-out forest patches with *Pteridium ;* cultivated land ; grassland with *Protea* or other shrubs ; swampy grassland ; streamsides ; 1300-2565 m alt.

S. Africa (var. **buchananii)**.

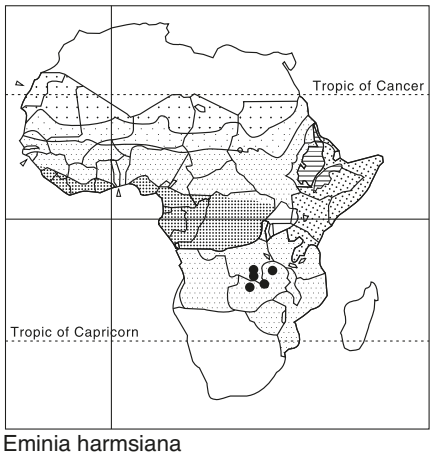
Comprises 2 vars. (worth retaining ?).

E. burkei Harv. – Icon. : Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1 : pl. 30 fig. 2, 1934.

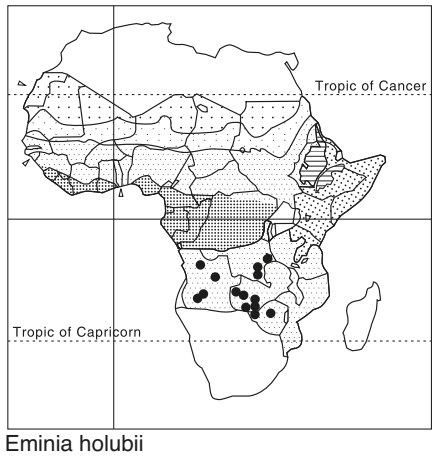
Erect pyrophytic perennial herb, with several to many sparsely branched or unbranched stems from a large napiform woody rootstock 10-20x1,7-3 cm containing red dye ; stems of 3-6 internodes, somewhat flattened, 7-75 cm tall, densely ferruginous pubescent.



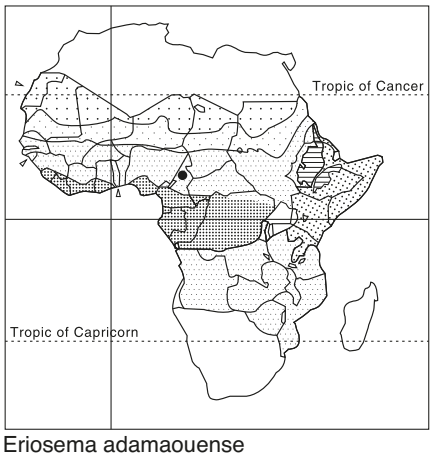
Eminia benguellensis



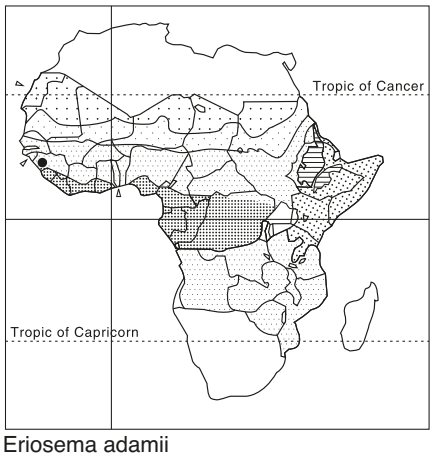
Eminia harmsiana



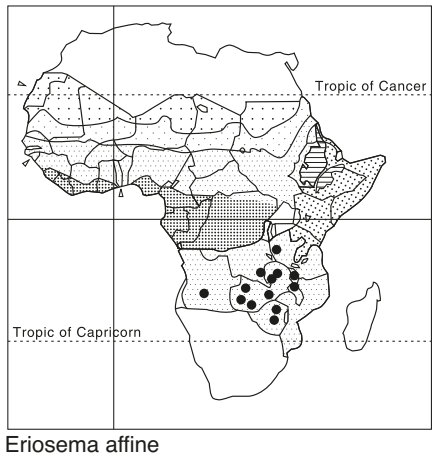
Eminia holubii



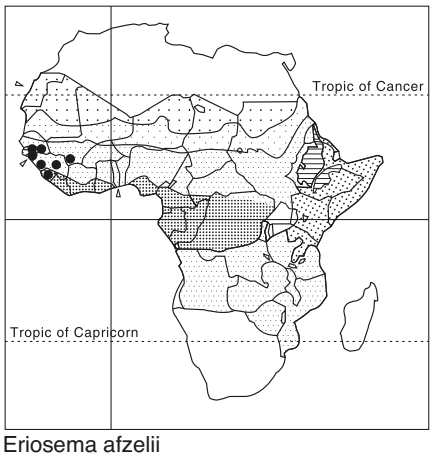
Eriosema adamaouense



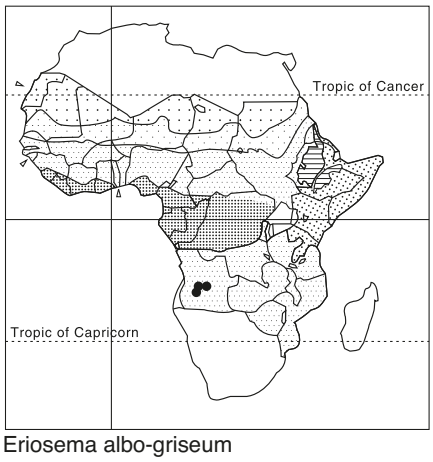
Eriosema adamii



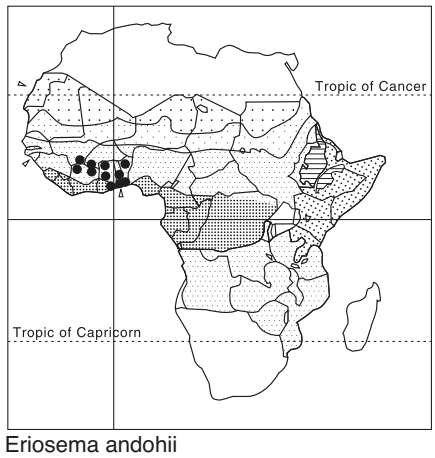
Eriosema affine



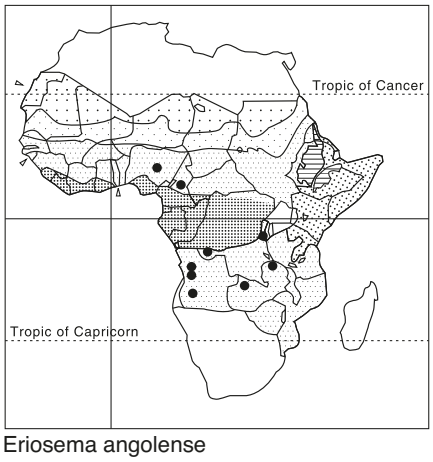
Eriosema afzelii



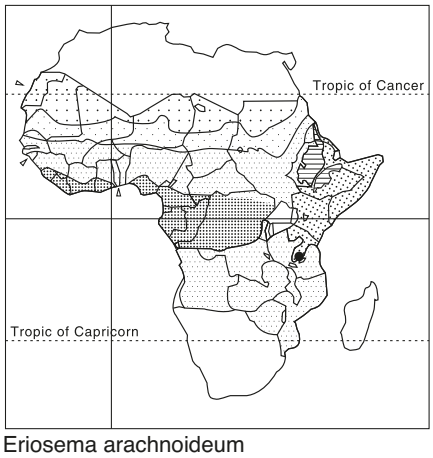
Eriosema albo-griseum



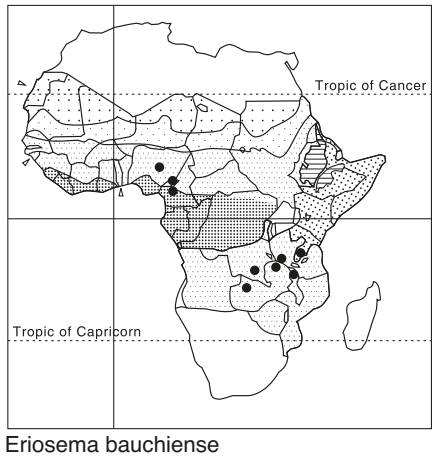
Eriosema andohii



Eriosema angolense



Eriosema arachnoideum



Eriosema bauchiense

ERIOSEMA BURKEI

Seasonally burnt grassland ; grassland with scattered trees ; open *Brachystegia* woodland ; dry dambos ; sandy places ; hilly almost bushy situations ; herb-grown mixed thickets ; ± 1200-1825 m alt.

S. Africa.

Comprises 2 vars.: – var. **burkei** (syn.: *E. leucanthum* Welw. ex Bak. f.); – var. **A.**

E. chicamba Bak. f.

Perennial herb with white-hirsute stems 20-25 cm tall ; ? pod and seeds unknown.

Dry ground.

E. chrysadenium Taub., *excl.* var. *intermedium* Hauman (= **E. erici-rosenii** var. **erici-rosenii)**.; Adansonia, Sér. 2, 11: 190-191, 1971 – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 29 fig. 3, pl. 31 fig. 6, 1934.

Erect perennial herb with 1- several branched or unbranched stems 4-25(-70) cm tall, from a woody rootstock or series of small tubers ± 1,5 × 1,2 cm ; stems covered, with short hairs and longer yellow hairs mostly with thickened glandular bases.

Grassland, often seasonally burnt ; open *Brachystegia* woodland ; *Protea* scrub and grassland ; damp places amongst granite rocks ; grassy savannas ; humid ground with humus ; 1120-2400 m alt.

Comprises 5 vars.

E. cordatum E. Mey., incl. var. *guenzii* (Sond.) Harv.

syn.: *E. guenzii* Sond.

Prostrate, ascending or rarely erect perennial herb (5-)12-45(-60) cm long, from a woody rootstock 15-23 × 1-1,5(? 10) cm ; stems densely hairy with ± spreading bristly white or ± ferruginous hairs ± 3 mm long.

Open woodland with *Peltophorum africanum, Pterocarpus rotundifolius, Acacia* spp., etc.; grassland ; tableland ; often on black soil ; sometimes abundant ; 250-1750 m alt.

S. Africa (common in Natal and Transvaal), Swaziland.

E. cordifolium Hochst. ex A. Rich., excl. var. *longibracteatum* Hauman (= **E. verdickii** var. **schoutedenianum)**; Adansonia, Sér. 2, 11:187, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 28 fig. 5, 1934.

Trailing perennial herb, with a single branched, flexuous stem 7-15(-30) cm long, from a tuberous rootstock 3 × 1,2 cm ; stems slender with deflexed white hairs of two sizes.

Grassland ; pathways ; woodland ; roadsides ; grassy savanna on stony ground ; 1500-2500 m alt.

Not in Nigeria *(E. lebrunii).* Only in Ethiopia fide Jacques-Félix.

E. cyclophyllum Welw. ex Bak.; Adansonia, Sér. 2, 11: 188, 1971.

Pubescent perennial herb with stems ±15 cm long, sub-caespitose, rather slender, prostrate-ascending from a many-headed rootstock with napiform tubers suspended by wiry branches.

Short, bushy rather stony pastures, but not abundant ; 1800-2000 m alt.

E. decumbens Hauman

Perennial herb with several stems at first erect, becoming sprawling-creeping, angular, 15-25 cm long, covered with a dense tomentum of erect, brown hairs, from a woody rootstock ; seeds unknown ?

ERIOSEMA DECUMBENS

Grassy savanna ; 1830 m alt.; subsp. **luxurians :** grassland on sandy soil on top of escarpment ; 1200-1500 m alt.

Comprises 2 subspp.: – subsp. **decumbens ;** – subsp. **luxurians** Verdc., Fl. Zambes. 3/5 : 230, 2001, from N Zambia, with larger leaflets and flowers.

E. elliotii Bak. f.

Perennial herb with several to many decumbent or ascending shoots 10-45 cm long from a woody rootstock ; branches brown, densely to sparsely covered with ± spreading, often twisted, long silvery hairs.

Themeda, Hyparrhenia grassland or grassland with scattered *Combretum,* etc.; often a weed in wheat-fields ; sometimes on the better loam soils ; 1050-2190 m alt.

E. ellipticum Bak.

Erect much branched shrub or subshrub (0,6-)1,2-3 m tall ; branches blackish, the younger parts greyish or pale ferruginous pubescent, older parts glabrous.

Grassland ; *Brachystegia,* etc. woodland ; *Uapaca* thicket ; *Protea* grassland ; evergreen forest-grassland margins ; *Isoberlinia tomentosa* woodland ; *Brachystegia, Faurea* woodland ; *Hyparrhenia* grassland with scattered *Parinari, Syzygium* extending upwards into *Pteridium* and *Protea* associations ; occasionally in abandoned cultivations ; often on rocky ground ; abundant, sometimes invading in grassy- or wooded savanna ; periodical-fires resistant ; 600-2340 m alt.

Comprises 2 subspp.: – subsp. **ellipticum** (syn.: *Flemingia oblongifolia* Bak.; *Millettia monophylla* Harms) ; – subsp. **claessensii** (De Wild.) Verdc. (bas.: *Eriosema claessensii* De Wild.).

E. englerianum Harms – Icon.: Bot. Jahrb. Syst. 40 : 42,1908.

syn.: *E. hockii* De Wild.; *E. flemingioides* Bak. var. *rhodesicum* L. Bolus

Subshrub with at first to 20 leafless flowering branches 15-22 cm tall from a woody rootstock 2,5-3,5 cm Ø; later developing leafy, slightly ramose stems to 0,6-2 m tall, 10 mm Ø, covered with a dense velvety whitish tomentum. Flowering after fires.

Wooded savanna ; open forest ; *Brachystegia-Isoberlinia, Brachystegia-Uapaca, Acacia* -chipya or semi chipya woodlands ; *Annona, Protea, Ozoroa* associations by dambo ; *Protea* grassland ; granitic sandveld ; 480-1650 m alt.

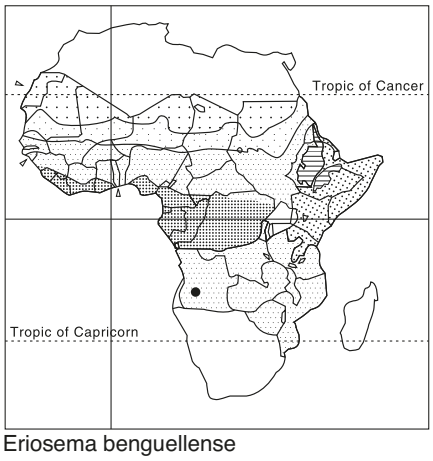
E. erici-rosenii R. E. Fries ; Adansonia, Sér. 2, 11:190, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 29 fig. 5, 1934.

Erect perennial herb with a single sparsely branched stem, 30-80 cm tall, from a slender woody root ; all aerial parts sticky ; stems very leafy (or in one variety less so), covered with long spreading hairs, short hairs and conspicuous yellow glandular-based hairs, the latter often very dense.

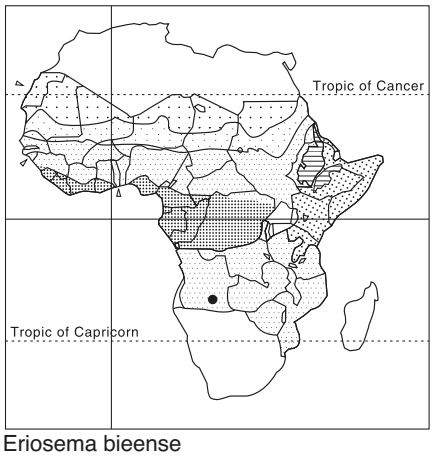
Grassland ; scattered *Combretum* grassland ; woodland of *Brachystegia, Terminalia,* etc. on stony ground ; long grass on rocky laterite ; wooded grassland and grassy plains on Kalahari sand ; dry sandy dambo ; clayey humid soil ; sometimes very abundant ; 1050-1800 m alt.

Comprises 2 vars. (great seasonal variability under fire action).

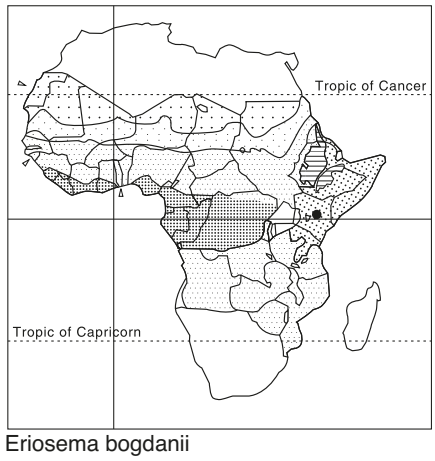
E. chrysadenium var. **bequaertii** is very similar to **E. erici-rosenii ;** further revision needed to determine the status of the two species.



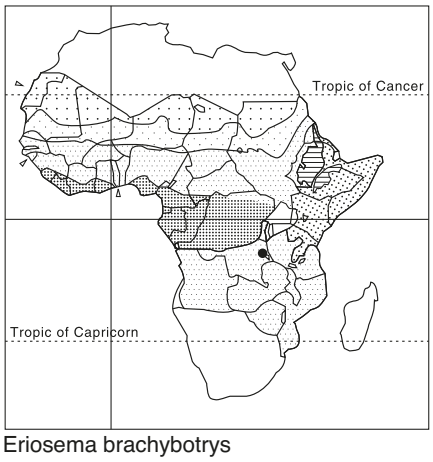
Eriosema benguellense



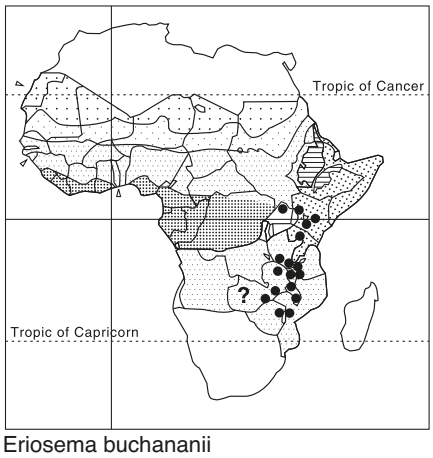
Eriosema bieense



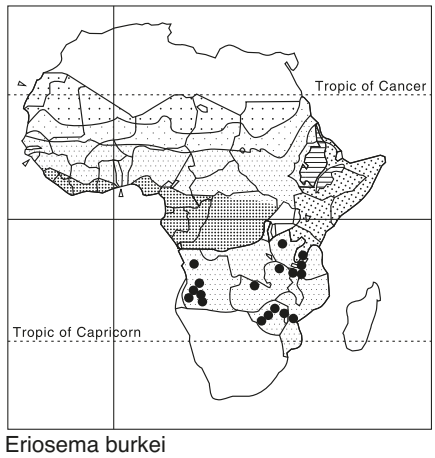
Eriosema bogdanii



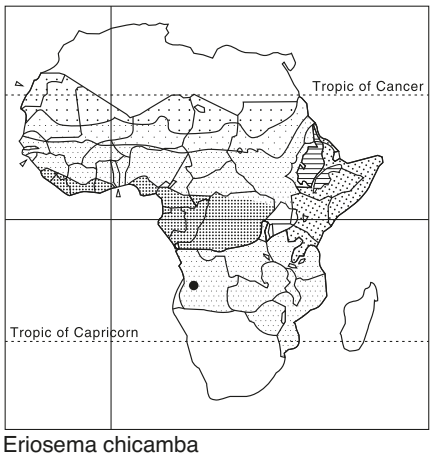
Eriosema brachybotrys



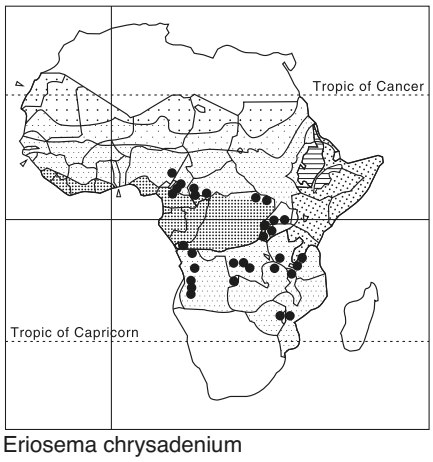
Eriosema buchananii



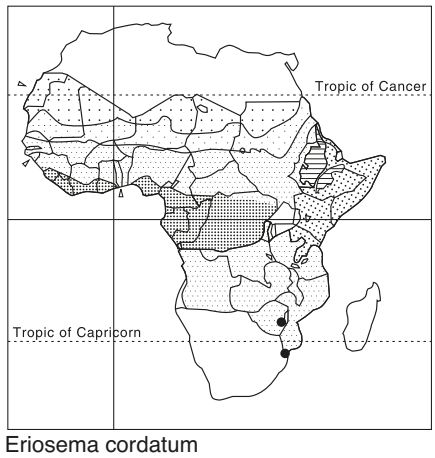
Eriosema burkei



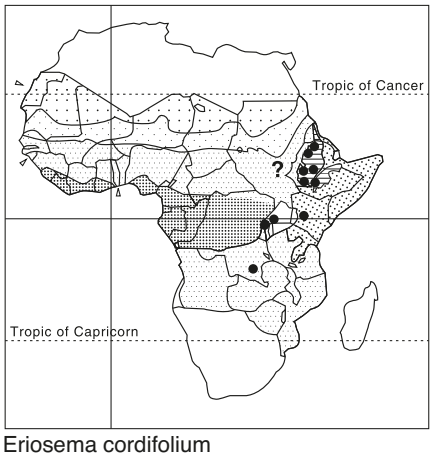
Eriosema chicamba



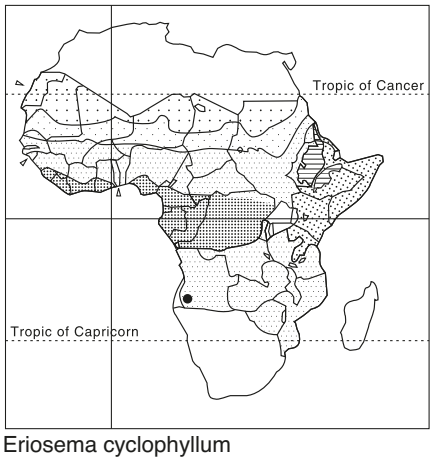
Eriosema chrysadenium



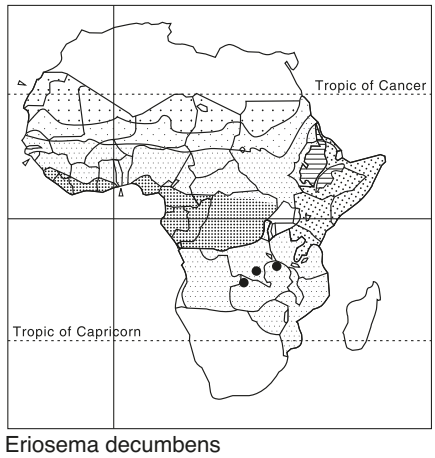
Eriosema cordatum



Eriosema cordifolium



Eriosema cyclophyllum



Eriosema decumbens

E. flemingioides Bak., excl. var. *rhodesicum* L. Bolus (= **E. englerianum)**; Adansonia, Sér. 2, 11: 176, 1971.

Subshrub 0,7-1,35 m tall, branched; branches stout, woody below, angular, frequently zigzag, with long spreading yellowish hairs and shorter pubescence or densely ferruginous hirsute, later glabrescent; seeds unknown?

Grassland, often damp; wooded grassland with *Combretum molle, C. collinum, Stereospermum kunthianum, Acacia hockii;* tall grassland with *Cymbopogon giganteum, Hyparrhenia* sp.; plantation edges; savanna; fallow land; 950-1650 m alt.

E. flexuosum Staner; Adansonia, Sér. 2, 11: 188, 1971.

Completely prostrate perennial herb sometimes mat-forming, with a single much branched stem 20-30(-50) cm long, from a fusiform or turnip-shaped woody rootstock 1-5 × 0,5-2 cm; stems slender with shorter hairs and longer yellow or brown bristly hairs, the latter appressed towards the base of the stem but spreading on the younger parts.

Grassland; bare patches in cultivations; on paths; savanna; sandy roadsides; grassland ridges with *Parinari;* scrub woodland on termite mounds; rock slabs in granite hills; 1400-2250 m alt.

Intermediates with **E. verdickii** occur; a specimen of **E. mariae** is ± intermediate with **E. flexuosum;** also near **E. cyclophyllum;** it forms a complex of easily recognized extremes linked by intermediates, possibly a hybrid swarm.

E. gironcourtianum Jacq.-Fél.; Adansonia, Sér. 2, 11: 149, 1971.

Subshrub with stems 60-80 cm tall, 4-5 mm Ø and ramose at the base, densely pubescent, from a woody rootstock.

Wooded savanna (? in slightly humid places).

Near **E. glomeratum, E. griseum.**

E. glomeratum (Guill. & Perr.) Hook. f., incl. var. *elongatum* (Baill.) Bak., var. *overlaetii* Staner & De Craene, var. *reticulatum* Staner & De Craene; *excl.* var. *laurentii* (De Wild.) Bak. f. (= *E. laurentii);* Adansonia, Sér. 2, 11: 152, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 29 fig. 7, pl. 31 fig. 4, 1934.

bas.: *Rhynchosia glomerata* Guill. & Perr.

syn.: *Eriosema elongatum* Baill.; *E. sericeum* Bak.; *Rhynchosia glomerata* var. *albida* Guill. & Perr.

Branched erect or low growing subshrubby herb (0,2-)0,3-1,2 (-2,4) m tall; branches ± triangular, leafy, covered with long spreading and also some shorter hairs.

Grassland; grassland with scattered trees often seasonally burnt; at edges of coconut plantations; scrub on coral and sandy soils; sandy soil in savanna; marigot edges; moist places in savanna (grassy and wooded); waste places; clearings; footpath sides; *Andropogon* sp. beds; 0-1500 m alt.

Very variable.

Not in Zambia; nor Madagascar, Mascarenes.

E. gossweileri Bak. f.

Perennial plant with slender stems 4-10 cm long, from a tuberous rootstock.

Ecology unknown.

E. gracillimum Bak. f.; Adansonia, Sér 2, 11: 182, 1971.

syn.: *E. gracile* Welw. ex Hiern 1896, non Klotzsch 1862.

Slender slightly pubescent herb 7,5-15 cm tall with the habit of *Lotononis;* root slender, but with an ovoid tuber 1,4-1,6 cm in length about the middle, 2,5-3,9 cm below the surface of the ground; stems branched, weak, prostrate-ascending, branches curved, slender, rather lax.

Marshy meadows; basaltic pebble.

Only known from 2 specimens.

E. griseum Bak.; Adansonia, Sér. 2, 11: 153, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 31 fig. 3, 1934.

Subshrub 0,4 m tall, ramose from the base, arising from a thickened woody rootstock; greyish-villous or silvery-silky.

Sandy soil; savanna; laterite gravels on plateau; hollows on sand; open or slightly wooded grassland; wooded savanna with *Isoberlinia doka;* on a burned ridge; rocky meadow; to 700-900 m alt.

Comprises 2 vars.

The specimen Hepper 1400 from Nigeria is perhaps another species.

E. humile Hauman; Adansonia, Sér. 2, 11: 189, 1971.

Herb with decumbent angular stems, ± 10 cm long 1,5 mm Ø with spreading long hairs; corolla ? yellow; pod and seeds unknown.

Poor savanna; 1100 m alt.

Only known from the type collected in 1933 (if excepting the specimen Duvigneaud 1037 E).

Near *E. bieense.*

E. jurionianum Staner & De Craene; Adansonia, Sér 2, 11: 174, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér 6, 1: pl. 28 fig. 3, pl. 29 fig. 6, 1934.

syn.: *Rhynchosia polystachya* A. Rich. 1847, non E. Mey.; *Eriosema polystachyum* (A. Rich.) Bak., 1871, non E. Mey.

Perennnial herb with several stiffly erect often unbranched stems from a woody rootstock, 0,3-0,9 cm tall; branches very leafy with short internodes, densely ferruginous hairy.

Grassland; grassland with scattered *Acacia lahai;* bushland at forest edges; cultivations; savanna; scrub; 1400-2860 m alt.

Comprises 2 vars. (sometimes not recognized as such).

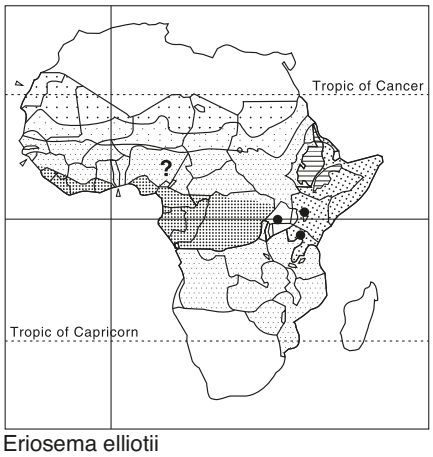
E. kankolo Hauman

syn.: *E. cryptanthum* Milne-Redh. 1951, non Bak. (= **Pearsonia cajanifolia** subsp. **cryptantha)**, nom. illegit.; *E. occultiflorum* J. B. Gillett – Both of subsp. **kankolo.**

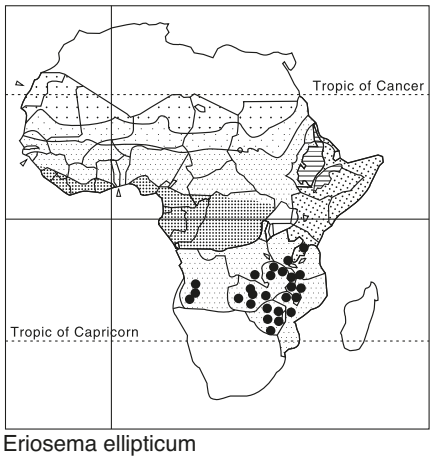
Erect perennial herb with a single slender unbranched stem 10-45 cm tall from an ovoid woody tuber ±2-3 × 1,2 cm; stem pale green, ridged, densely pubescent, particularly on the 4 main ridges, and glandular when young, later almost glabrous; seeds unknown. Pods known!

Grassy savanna with *Acacia;* damp grassland; *Brachystegia* woodland; laterite outcrops; grassy dambos; black cotton soils; 840-1650 m alt.

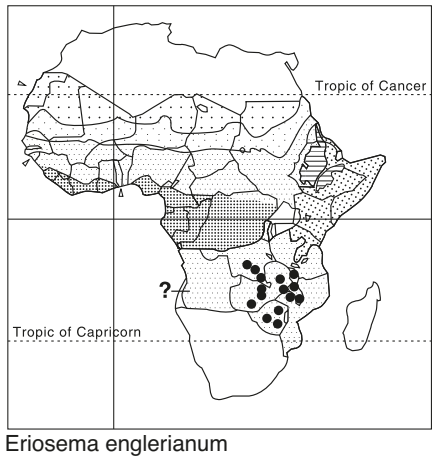
Comprises 2 subspp.



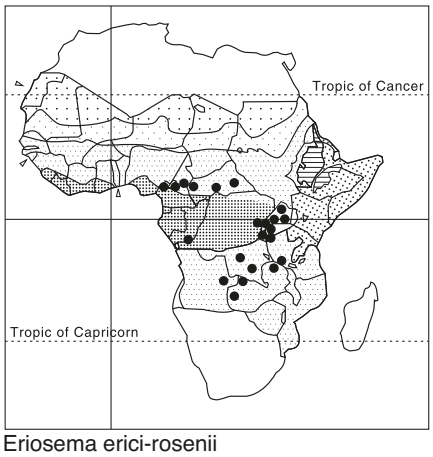
Eriosema elliotii



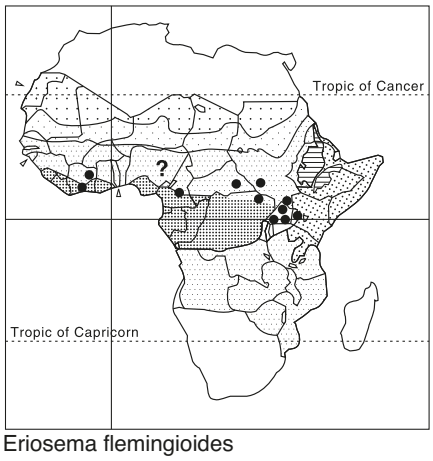
Eriosema ellipticum



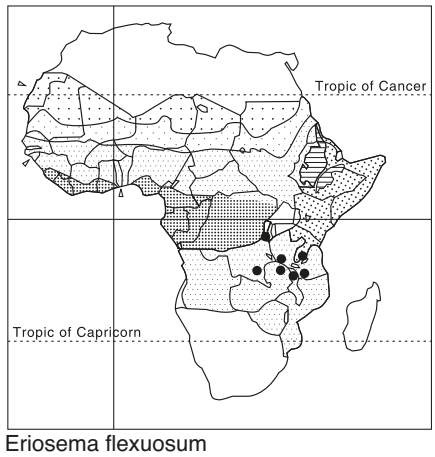
Eriosema englerianum



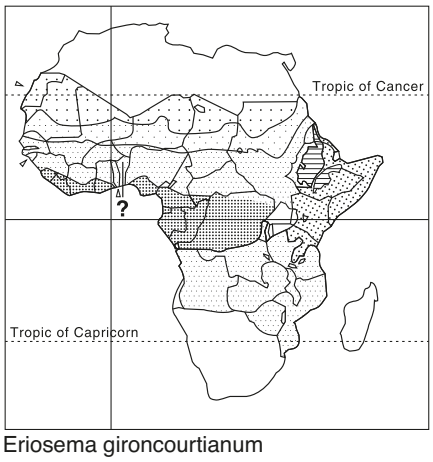
Eriosema erici-rosenii



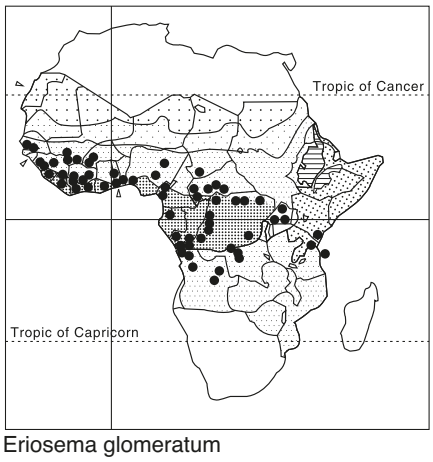
Eriosema flemingioides



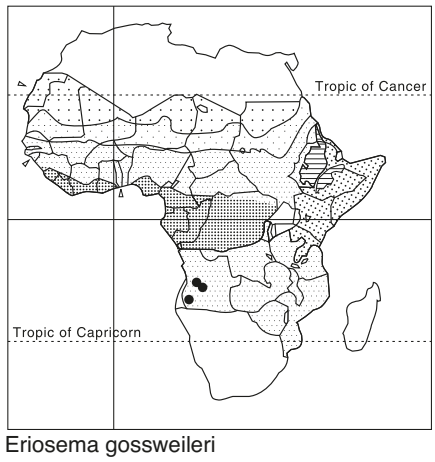
Eriosema flexuosum



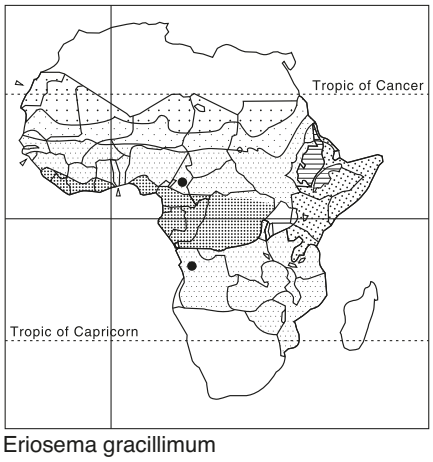
Eriosema gironcourtianum



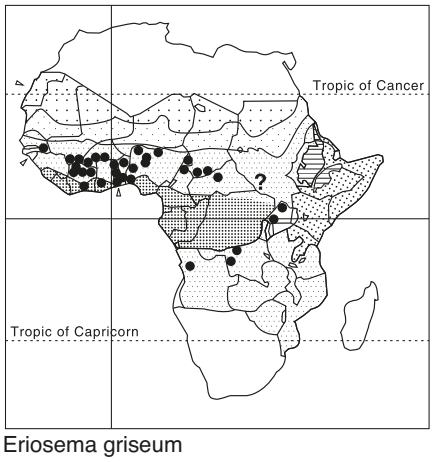
Eriosema glomeratum



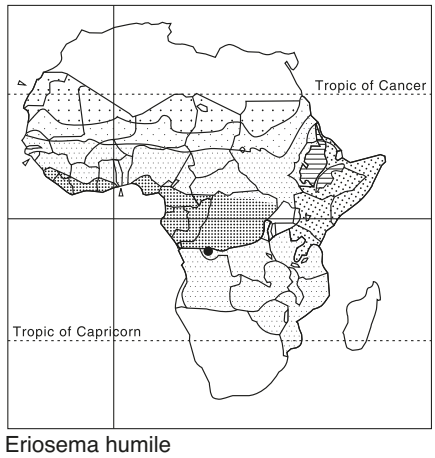
Eriosema gossweileri



Eriosema gracillimum



Eriosema griseum



Eriosema humile

E. kwangoense Hauman

? Always a single stem, erect, rigid, 50 cm tall, 1,5 mm Ø, with appressed woolly hairs, dense towards the apex, glabrescent to the base ; pod and seeds unknown.

Savanna.

Only known from the type collected in 1952.

E. lateriticola Jacq.-Fél.

syn.: *E. subacaule* A. Chev. nom., p.p. (See under **E. pellegrinii)**.

Shrublet 0,2 m tall, woolly, from a tuberous rootstock ; several annual stems, subwoody at the base, 3 cm Ø.

Lateritic plateau.

E. laurentii De Wild.; Adansonia, Sér. 2, 11: 152, 1971.

syn.: *E. glomeratum* (Guill. & Perr.) Hook. f. var. *laurentii* (De Wild.) Bak. f.; *Glycine rufa* Schumach. & Thonn. 1827, non Kunth ; *Eriosema rufum* (Schumach. & Thonn.) Baill. 1866, non G. Don, nom. illegit.

Subshrub with stems 15-45 cm to 2-3 m tall, 1-2 cm Ø at the base, very ramose ; branches ±3-angular with dense *appressed* indumentum, golden-brown ; sometimes procumbent.

Savanna in moist places ; clearings ; cultivated and waste grounds ; fallow land ; river sides ; grassland sometimes swampy ; bushland ; sandy soil in sunny places ; sandy shore, in grass behind high water mark ; sometimes very common ; 5-2550 m alt.

Comprises 2 subspp.

Formerly included in *E. glomeratum,* and in W. Africa both species occur together over a wide area, and hybrids are also recorded. The distribution and habitat preferences in W. Africa need to be clarified.

E. lebrunii Staner & De Craene ; Adansonia, Sér. 2, 11: 188, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 28 fig. 2, 1934.

Decumbent perennial herb, with 1-several slender, sparsely branched stems 10-30 cm tall, from a globose or turnip-shaped tuber ±3 x 1,5 cm ; stem with sparse to dense white pubescence and often longer mostly ferruginous spreading hairs on younger parts.

Savanna ; clearings ; rocky ground ; pastures ; secondary grassland ; marshy grassland ; roadsides ; bare clayey soil ; 1500-2400 m alt.

Very close to *E. verdickii* var. *schoutederianum.*

E. letouzeyi Jacq.-Fél.

syn.: *E. togoense* sensu Tisserant, Bull. Mus. Natl. Hist. Nat. Paris, Sér. 2, 2 : 322, 1930.

Subshrub, ramose, 0,8-1,2 m tall ; stem decumbent at first, later erect, slender, half-woody, with whitish, appressed indumentum, particularly dense on the low ribs.

Savanna ; wooded savanna ; laterite.

Near *E. griseum* var. *togoense.*

E. linifolium Bak. f.; Adansonia, Sér. 2, 11: 165, 1971.

syn.: *E. ippyense* Tiss.

Perennial plant with 1-several erect stems, simple, virgate, subwoody, terete below, somewhat angled above, 30-90 cm tall from a woody ± tuberous rootstock.

Savanna ; wooded savanna.

E. longipedunculatum (A. Rich.) Bak.; Adansonia, Sér. 2, 11: 173, 1971.

bas.: *Rhynchosia longipendunculata* A. Rich.

Erect or ascending perennial plant ; stems 1-several, densely pubescent, slender, with brownish short dense and appressed or denser rather more shaggy indumentum, from a woody rootstock.

Grassland derived from *Podocarpus* forest ; bushland ; rocky places ; 1300-2400 m alt.

Yemen.

Comprises 2 vars.

E. longiunguiculatum Hauman

Herb or ? subshrub with erect stem, 50 cm tall, 4-5 mm Ø, slightly angular, covered with woolly, grey rather dense hairs ; pod and seeds unknown.

Ecology unknown.

Only known from the type collected in 1952.

E. macrostipulum Bak. f.; Adansonia, Sér. 2, 11: 179, 1971.

syn.: *E. sousae* M. A. Exell

Erect perennial herb 9-60 cm tall, ± unbranched ; rootstock woody spindle-shaped or globose, to 4 cm thick, with lateral tubers ; branches shortly pubescent and with some long hairs.

Grassland ; grassland with scattered *Acacia,* etc.; *Brachystegia* woodland ; rocky hillsides ; stream banks in mutobo woodland ; mixed *Pterocarpus* deciduous woodland ; open bush ; *Hyparrhenia* grassland ; abandoned cultivations ; weedy pasture ; forest gallery ; sandstone outcrops ; savanna ; forest patches in savanna with *Lophira ;* 600(? and less)-2100 m alt.

Comprises 3 vars.

E. manikense De Wild.; Adansonia, Sér. 2, 11: 188, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 31 fig. 1, 1934.

Plant with several stems ± creeping, angular 12-18 cm long, 2 mm Ø, with long yellowish hairs and glandular at the base ; fibrous roots fusiform to 15 cm long, 5-6 mm Ø.

Savanna ?

Only two specimens known.

E. mariae Verdc.

Decumbent perennial herb from a small ellipsoid tuber 15 x 6 mm ; stems pale, very graceful, ridged, 10-50 cm long, pilose with white hairs or almost glabrous.

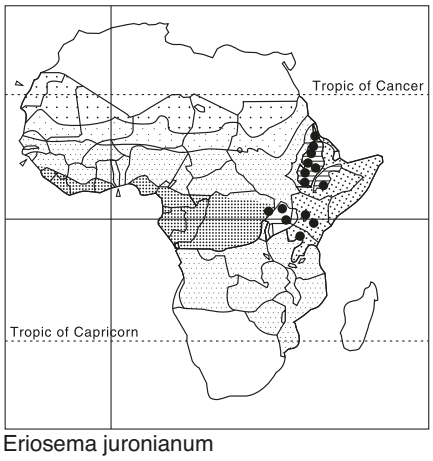
Long grass of wet marsh ; very wet dambos with shallow stony soil ; 1275-1300 m alt.

E. molle Hutch. ex Milne-Redh.; Adansonia, Sér. 2, 11: 160, 1971.

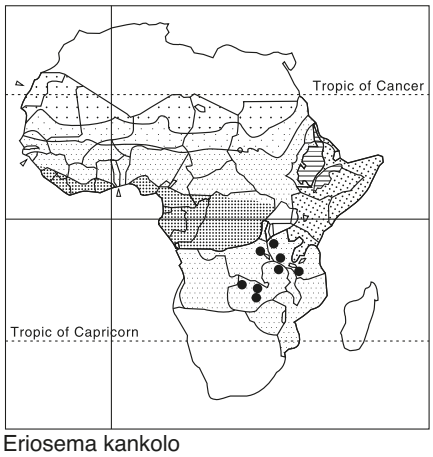
Shrub 0,9-1,5(-2) m tall, ramose towards the apex ; branches slender, pubescent.

Grassland with *E. glomeratum ;* gregariously frequent in savanna ; 200-1000 m alt.

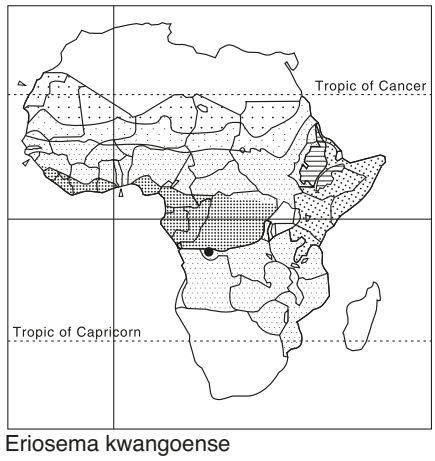
E. montanum Bak. f., excl. var. *hirsutum* Hauman (= *E. scioanum* subsp. *lejeunei)*; Adansonia, Sér. 2, 11: 173, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot, Sér. 6, 1: pl. 28 fig. 1, 1934.



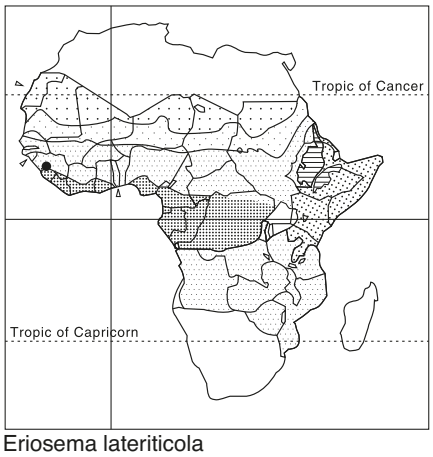
Eriosema juronianum



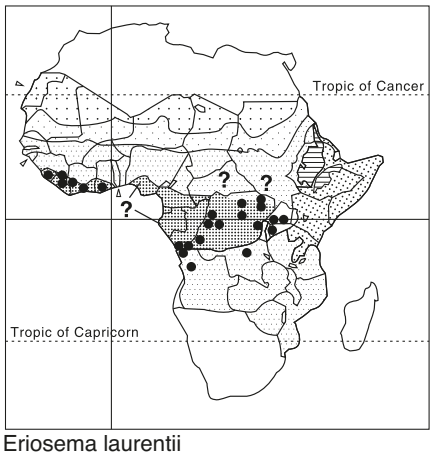
Eriosema kankolo



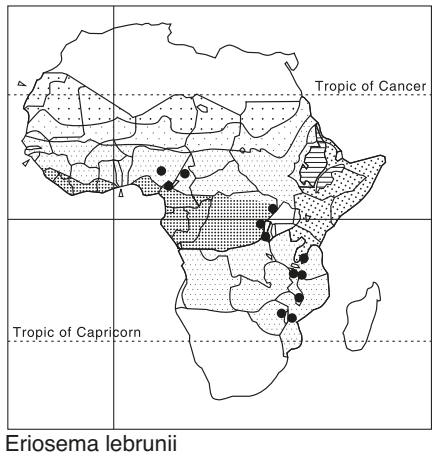
Eriosema kwangoense



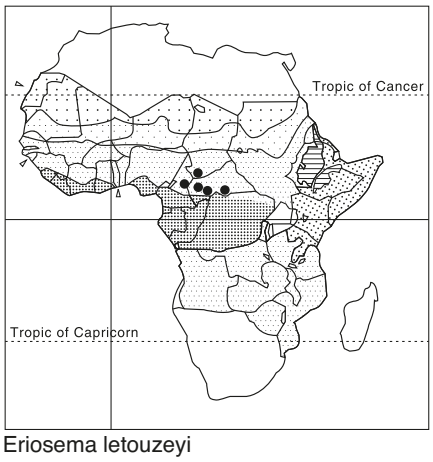
Eriosema lateriticola



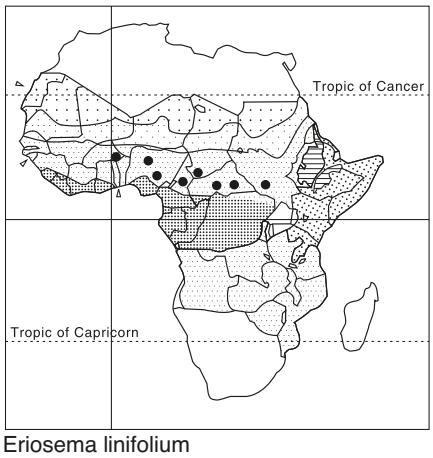
Eriosema laurentii



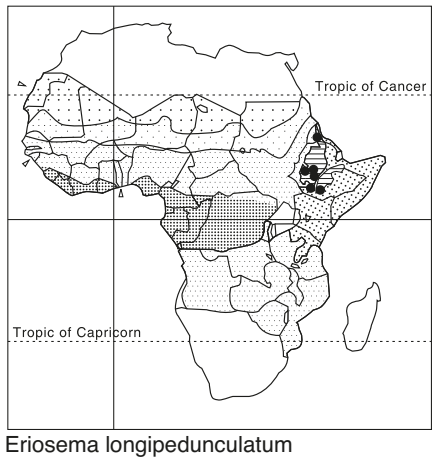
Eriosema lebrunii



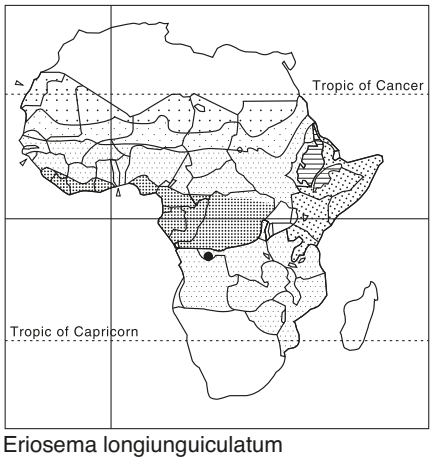
Eriosema letouzeyi



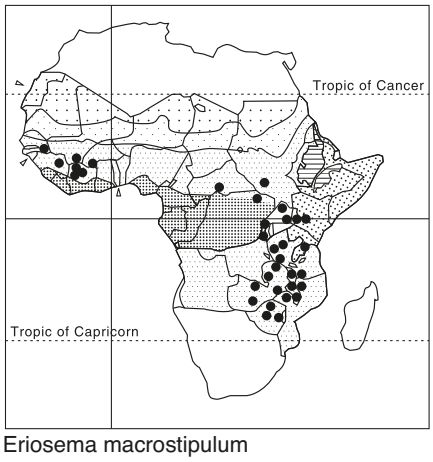
Eriosema linifolium



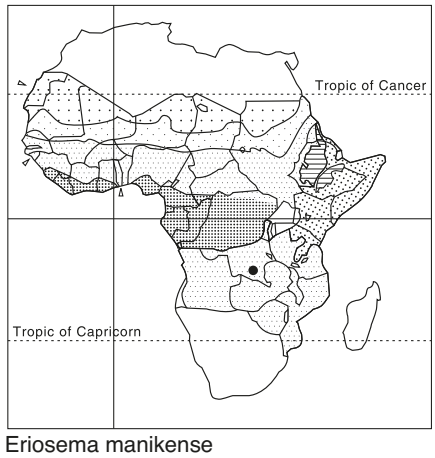
Eriosema longipedunculatum



Eriosema longiunguiculatum



Eriosema macrostipulum



Eriosema manikense

ERIOSEMA MONTANUM

Perennial herb, often subshrubby 0,2-3 m tall, branched; branches angular, mostly erect, sometimes straggling or trailing, pubescent to densely shaggy with ferruginous hairs.

Grassland; scrub; bushland; forest edges; sclerophyllous forest; open dambos; lake edge grassland; fringing wet mushitu; stream banks; lava; fallow land; rain-forest with *Albizia, Macaranga, Croton, Ocotea;* sometimes very common; 900-2520 m alt.

Comprises ?5 vars.: – var. **brevipedunculatum** Verdc. is not worth retaining according to Verdcourt in Fl. Zambes. 3/5 : 226, 2001.

First collections from Sudan in 1980.

E. monticola Taub.; Adansonia, Sér. 2, 11: 197, 1971.

Erect perennial herb with ? a single sparsely branched or unbranched stem 5-35 cm tall, from a thick woody rootstock ± 2,5 cm wide, containing a sticky red gum; rarely flowering when leaves are rather undeveloped; stem half-woody at the base, with appressed, reflexed indumentum.

Seasonally burnt grassland; rocky hillsides; stony meadow; 700-1700 m alt.

Confused with *E. tessmannii.*

E. nutans Schinz; Adansonia, Sér. 2, 11: 166, 1971, *excl.* syn. *E. polystachyum* (A. Rich.) Bak. (= **E. jurionianum)**.

syn.: *E. richardii* Benth. ex Bak. f. & Haydon, incl. fa. *ellipticum* Staner & De Craene

Perennial herb 0,2-1,8 m tall; branches erect or decumbent, densely covered with ± spreading white to ferruginous hairs, from a thick rootstock.

Grassland; grassland with *Acacia* etc.; forest edges; seasonal swamps; also a weed; mixed *Acacia* woodlands; bushland particularly on sandy soils; drier parts of dambos and marshes; chipya; savanna; cultivated ground; fallow land; sometimes very abundant; 800-2400 m alt.

S. Africa, Swaziland.

E. parviflorum E. Mey., *excl.* var. *laxiusculum* Staner & De Craene and var. *sarmentosum* Staner & De Craene; excl. syn. *E.caillei* A. Chev., nom. and *E. djalonense* A. Chev., nom. (= **E. spicatum)**. – Adansonia, Sér. 2, 11: 169, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 29 fig. 2, 1934.

syn.: *E. spicatum* "forme *podostachyum"* Tiss., non Hook. f.; *E. consanguineum* Klotzsch; *E. gilletii* De Wild. & Th. Durand

Perennial herb or subshrub from a woody base, branched and spreading; branches mostly trailing or prostrate 0,3-2,5 m long, sometimes suberect 0,3-1,7 m tall, pubescent to densely shaggy with ferruginous hairs.

Grassland; thicket; swampy grassland; wooded swamp; savanna; humid ground; clearing; "brousse" of secondary forest; verges on sand; deep sand by river estuaries; *Hemarthria, Schizachyrium, Vetiveria* grassland; esobe; matundi; 0-1200 m alt.

S. Africa; Madagascar.

Comprises 2 subspp.: – subsp. **parviflorum** [syn.: *E. consanguineum* Klotzsch; *Cytisus glomeratus* Bojer, nom. nud., non *Eriosema glomeratum* (Guill. & Perr.) Hook. f.; *Eriosema bojeriana* Baill.; non *E. bojeri* Benth. ex Bak.]; – subsp. **podostachyum** (Hook. f.) J. K. Morton, in W. Africa.

ERIOSEMA

E. pauciflorum Klotzsch; Adansonia, Sér. 2, 11: 164, 1971.

syn.: *E. oblongum* Harv.; *E. andongense* Bak. f. – Both of var. **pauciflorum.**

Prostrate, ascending or suberect pyrophytic herb, with several to many unbranched or sparsely branched stems 10-45 cm long, from a woody rootstock; stems with dense covering of short pubescence and longer ferruginous rather bristly hairs.

Seasonally burnt grassland; *Brachystegia* and *Acacia* woodland; coastal dry forest; roadsides; cultivations; dambo edges; open plains in Kalahari sand woodland; *Baikiaea* scrub etc.; hardpans; wooded grassland; 50-1750 m alt.

Botswana, S. Africa.

Comprises 2 vars.

E. pellegrinii Tiss.; Adansonia, Sér. 2, 11: 195, 1971. – Icon.: Staner & De Craene Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 30 fig. 1, 1934.

syn.: *E. subacaule* A. Chev., nom. incl. specim. Chevalier 23942, *excl.* specim. Chevalier 18401, 18452 (= **E. lateriticola)**.

Stem erect, slightly or not ramose, glabrescent when full-grown 10-30 cm tall, from a partly spindle-shaped rootstock 1,5 cm Ø; axis, leaves beneath and inflorescence with long silvery white hairs.

Sandstone; grassy- or wooded savanna; Kalahari sands; edges of forest gallery; sandy-muddy soil; 500 m alt.

E. pentaphyllum Harms – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 30 fig 5, 1934.

Suffrutex or suberect perennial herb with a woody rootstock; stems erect 0,5-1,5 m tall, 7 mm Ø, somewhat angular, shaggy with ± appressed silvery hairs.

Savanna; fallow land; woodland on sand; open bushland; grassy places; 1500-2200 m alt.

[E. x **prunelloides** Welw. ex Bak. f.]

syn.: *E. prunelloides* Welw. ex Bak. f.

Appears to be a hybrid between **E. shirense** and **E. rhodesicum,** with intermediary features.

Described from Angola, present in Zambia, and perhaps also in Tanzania; swamps and floodplain grasslands, dambos, c.1150 m alt.; fide Verdcourt in Fl. Zambes. 3/5 : 234, 2001.

Not mapped.

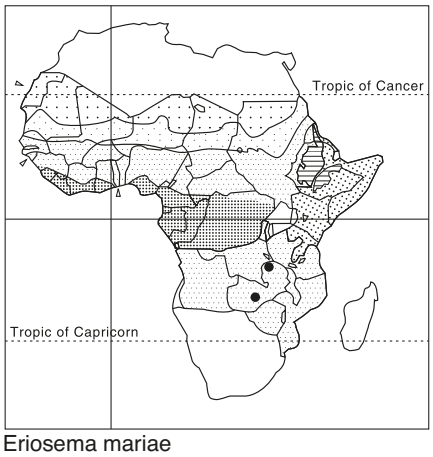
E. pseudodistinctum Verdc.

Perennial herb with several decumbent unbranched stems 15-25 cm long, from a stout simple rootstock ± 10 x 1 cm; stems brown, minutely puberulous and angular, with a few longer hairs at the nodes. Pod and seeds unknown.

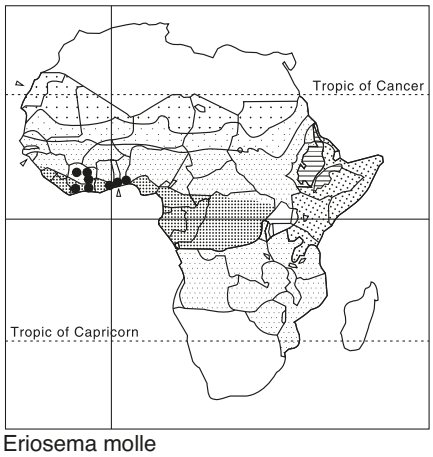
Open places on a grey sandy soil in *Hyparrhenia* grassland; roadsides; short grassland, valleyside in grassland with scattered trees and shrub-clumps; sometimes common; 1740-1920 m alt.

E. pseudostolzii Verdc.

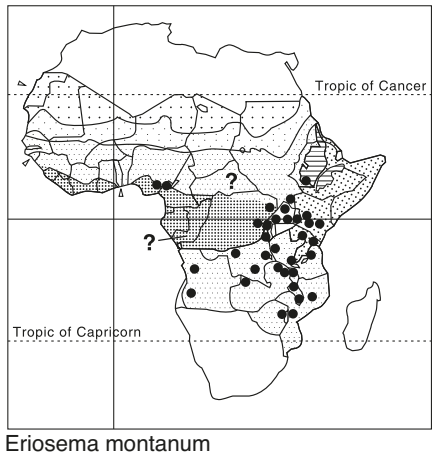
Herb 0,35-1,2 m tall with 1-few erect unbranched or sparsely branched stems from a usually massive woody rootstock; stems leafy, but basal part (to 0,4 m) sometimes quite bare, covered with short and long pubescence; mature pod and seeds unknown.



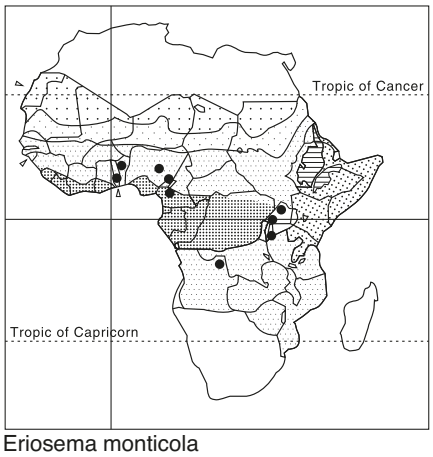
Eriosema mariae



Eriosema molle



Eriosema montanum



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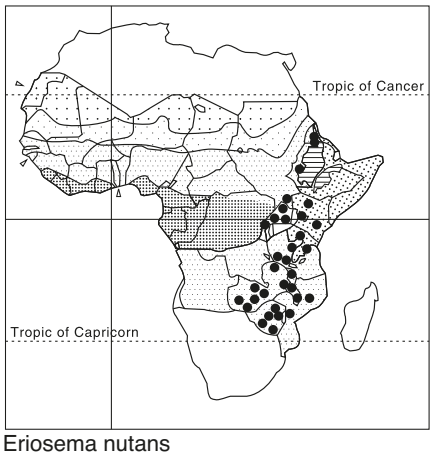

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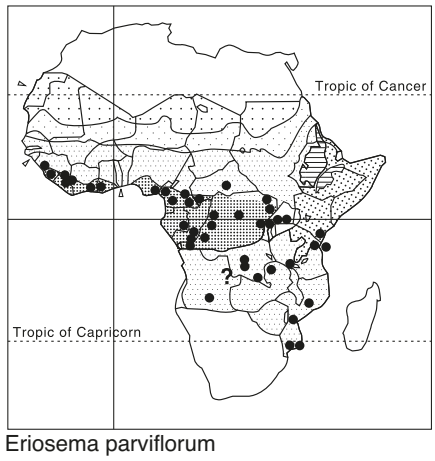

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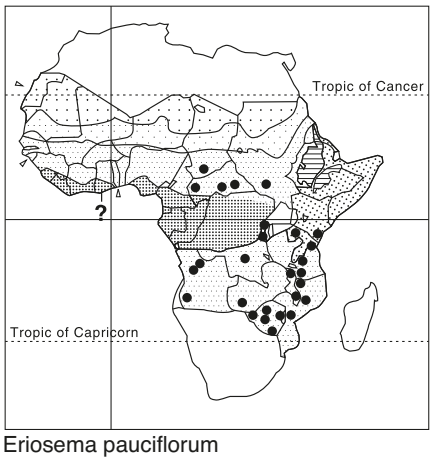

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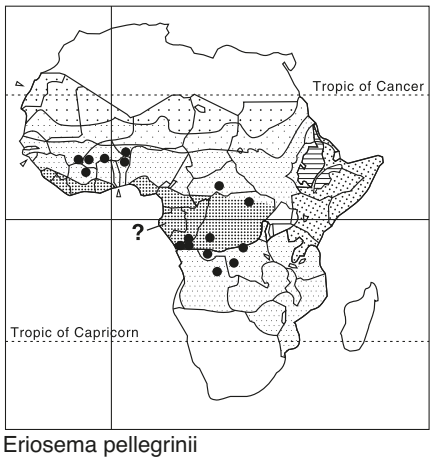

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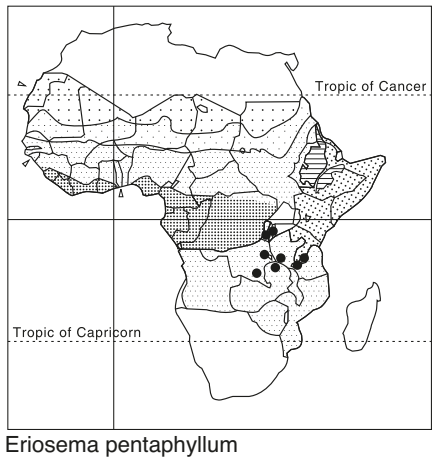

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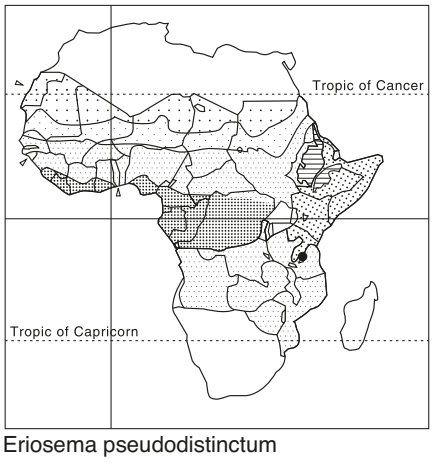

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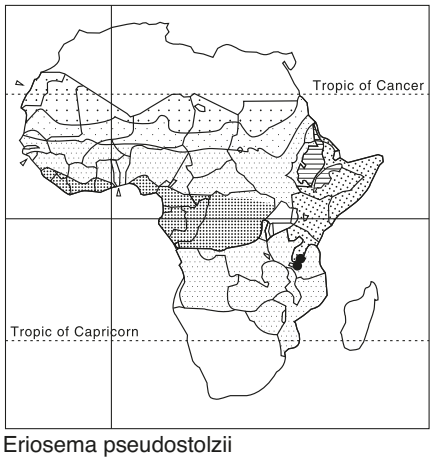

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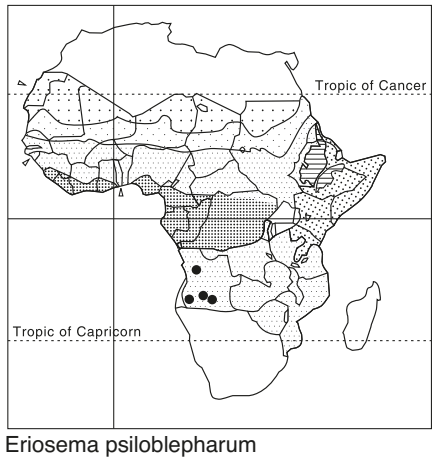


Eriosema psiloblepharum

ERIOSEMA PSEUDOSTOLZII

Grassland ; *Isoberlinia, Brachystegia, Acacia, Combretum, Strychnos* scrub woodland on light red-brown sandy soil ; edges of forest or streams, old cultivations ; among rough grass on sandy soil ; 1500-2200 m alt.

E. psiloblepharum Welw. ex Bak. f.

Stems erect or ascending, simple, shaggy with long white slender hairs, 15-25 cm tall, herbaceous as to the upper part, branched and somewhat woody towards the base ; rootstock flexuous, woody-wiry.

Ecology unknown.

E. psoraleoides (Lam.) G. Don, incl. var. *argenteum* (A. Chev.) Bak. f. and var. *cajanoides* (Guill. & Perr.) Staner & De Craene, and var. *grandiflorum* Staner & De Craene – Adansonia, Sér. 2, 11 : 157, 1971.

bas.: *Crotalaria psoraleoides* Lam. *("psoraloides").*

syn.: *Rhynchosia cajanoides* Guill. & Perr.; *Eriosema cajanoides* (Guill. & Perr.) Hook. f.; *E. proschii* Briq.; *E. sericeum* A. Chev. p.p.; *E. argenteum* A. Chev., nom.; *E. macrophyllum* Klotzsch ; *E. floribundum* Klotzsch ; *E. incanum* Klotzsch ; *E. polystachyum* E. Mey.

Shrub or woody herb 0,75-3,6 m tall ; branches strongly ribbed, shortly densely brownish hairy, often ± velvety and covered with orange-red glands ; stems from a woody rootstock.

Grassland ; grassland with scattered *Commiphora, Acacia* or *Protea ;* thicket ; bushland ; humid places ; dune along stream ; muddy to clayey soil ; savanna ; clearings ; fallow land ; footpaths ; sandy and black soils in usually marshy or damp places ; dambo fringes ; lake shores ; woodland-grassland interfaces ; relict chipya woodland ; disturbed ground ; weed of cultivations ; termite mounds ; sometimes in water for periods ; 0-2200 m alt.

Botswana, S. Africa, Swaziland ; Madagascar.

E. pulcherrimum Taub.; Adansonia, Sér. 2, 11 : 195, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1 : pl. 30 fig. 6, 1934.

Erect perennial herb, softly white-tomentose with 1 stem, angled 0,1-0,6 cm tall, 4 mm Ø, from a spindle-shaped rootstock to 20 cm long, 1 cm Ø, containing a blood-red coagulating sap ; leaves uni-foliolate ; flowers purplish.

Savanna with *Monotes kerstingii* on sand ; lateritic soils ; edge of forest gallery.

E. pumilum Verdc.

Erect or decumbent perennial herb with 1-several, usally unbranched stems 3-15 cm tall, from a round or turnip-shaped tuber 1-2,5 cm long and 0,5-2,2 cm wide ; stems leafy, somewhat zigzag, slender, pubescent with appressed or spreading white hairs.

Brachystegia woodland on decomposed rock ; fireswept eroded hillside, usually amongst quartz pebbles ; bushland ; shallow soil near rock outcrop ; verge of road in sandy red soil ; roadside in *Brachystegia, Uapaca* woodland on red soil ; *Brachystegia, Monotes, Cryptosepalum* woodland ; 840-1800 m alt.

Comprises 2 vars.

ERIOSEMA

E. pygmaeum Welw. ex Bak.

Perennial plant with caespitose branched herbaceous densely grey-silky stems 3,7-5 cm tall, arising from a woody rootstock ; flowers yellowish with a purple keel.

Wooded thickets with *Thesium* spp., *Thunbergia* spp.; 1200 m alt.

Only known from the type collected in 1859.

E. ramosum Bak. f.; Adansonia, Sér. 2, 11 : 175, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1 : pl. 30 fig. 3, 1934.

syn.: *E. quarrei* Bak. f.

Erect subshrubby branched herb 0,3-1,2 m tall with stems ± fastigiate, angled, densely half-appressed-ascendant grey-pubescent particularly on the ridges, ± 4 mm Ø ; young parts with more red-brown hairs.

Savanna ; dambos ; chipya ; streamsides ; in thickets on the pastures ; 1300-1700 m alt.

The measurements given by Jacques-Félix for Cameroon specimens differ considerably for several organs [stipules : 12 × 1,5 mm (vs. 3,5-5 × 1), petiole : 15-18 mm (vs. 1-12), rachis : 10 mm (vs. 2-6) ; Verdcourt's figures for Fl. Zambes. within brackets].

E. raynaliorum Jacq.-Fél.

Dwarf shrub 5-7 cm tall ; stems half-woody with 2-7 branches 3-4 cm long from a tuberous, napiform, or spindle-shaped stock ; pod and seeds unknown. Stems periodically burnt.

Bowal ; rocky mountain ; exposed to fire ; 1720 m alt.

E. rhodesicum R. E. Fries ; Adansonia, Sér. 2, 11 : 184, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1 : pl. 29 fig. 4, 1934 ; Bol. Soc. Brot., Sér. 2, 39 : pl. 25, 1965.

Erect herb with several to many unbranched stems ±30 cm tall from a woody rootstock, which gives off roots bearing tubers 2-4 × 1 cm ; stems ridged, pubescent. Sometimes flowering when only 7 cm tall.

Seasonally burnt grassland (flowering stems appearing after fire) ; rocky hillsides ; *Loudetia* grassland with scattered trees on shallow soil ; *Brachystegia, Isoberlinia* formation and derived bushland ; dambos ; open forests ; grassy or wooded savanna ; 1170-2400 m alt.

Comprises 2 vars.: – var. **rhodesicum** (syn.: *E. praecox* R. E. Fries) ; – var. **huambense** (Torre) J.-P. Lebrun & Stork, **comb. nova ;** bas.: *E. mirabile* R. E. Fries var. *huambense* (Torre), Bol. Soc. Brot., Sér. 2, 39 : 227, tab. 25, 1965. Verdcourt in Fl. Zambes. 3/5 : 235, 2001, already suggested such a transfer.

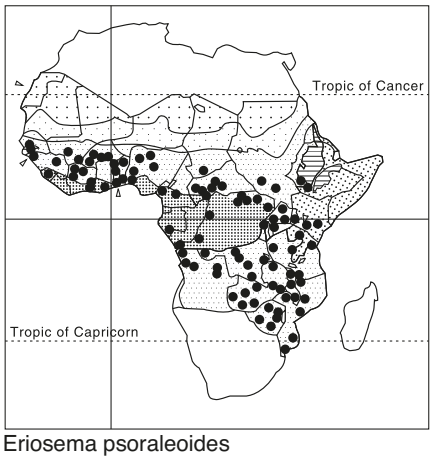
E. rhynchosioides Bak.

Prostrate perennial herb, with several sparsely branched stems from a rootstock consisting of several fusiform tubers to 7 x 1,2 cm ; stems slender, to ± 70 cm long, pubescent to velvety and with some longer bristly hairs as well.

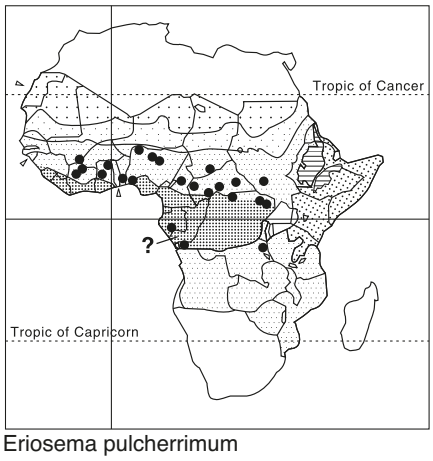
Deciduous bushland ; *Brachystegia, Uapaca* woodland ; cultivations derived from such areas ; often on deep sand ; seasonally wet grassland on Kalahari sand ; short grassland ; 780-1500 m alt.

Comprises 2 vars.

E. welwitschii Hiern ex Bak. f. and *E. terniflorum* Hiern ex Bak. f. from Angola are perhaps synonyms.



Eriosema psoraleoides



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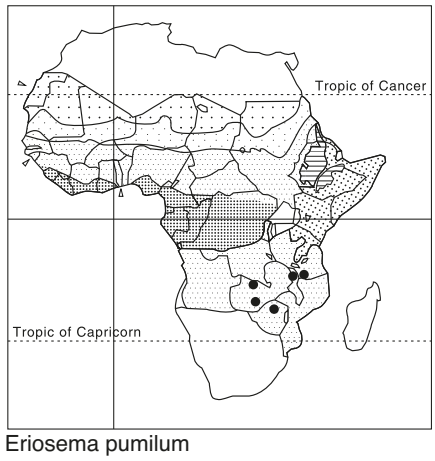

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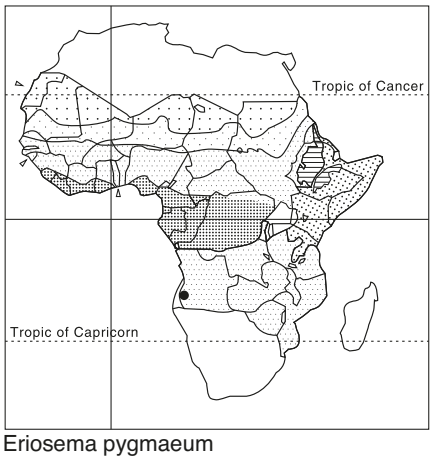
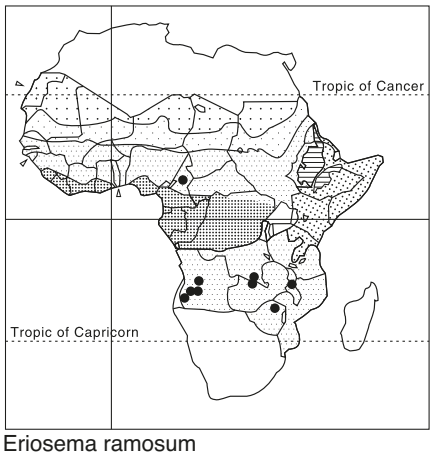


Eriosema pygmaeum



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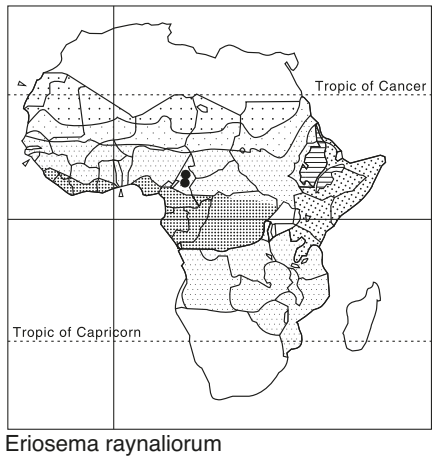

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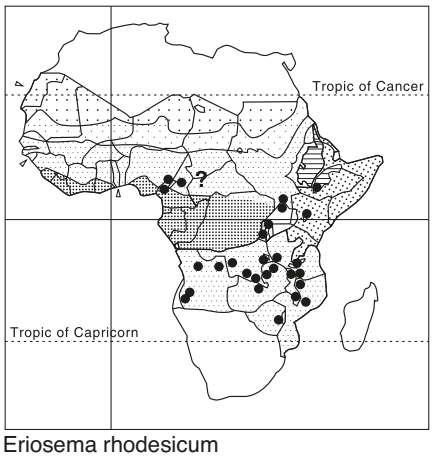
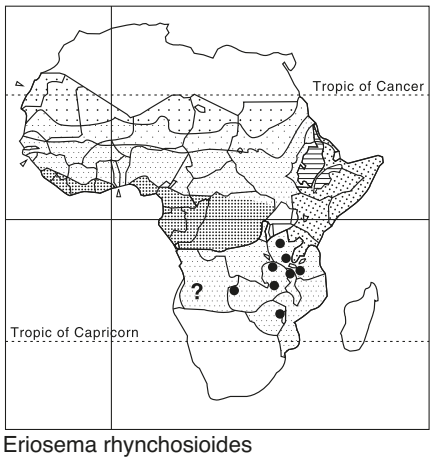
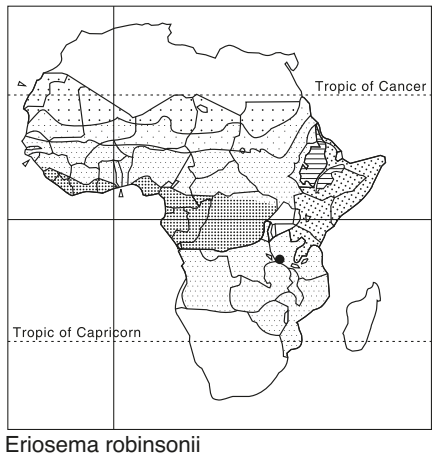


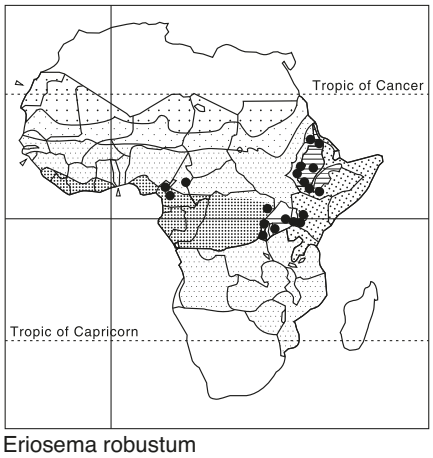
Eriosema rhodesicum



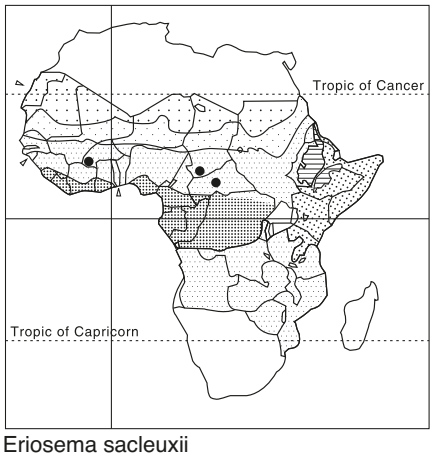
Eriosema rhynchosioides



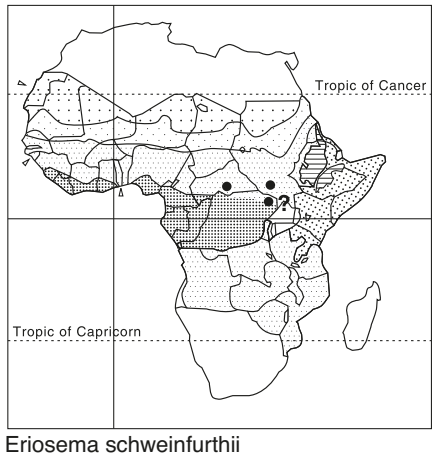
Eriosema robinsonii



Eriosema robustum



Eriosema sacleuxii



Eriosema schweinfurthii

ERIOSEMA

E. robinsonii Verdc.

Perennial herb with ± prostrate stems, much branched at the base, 10-35 cm long, from a depressed globose woody tuber 1,8 × 1,5-2,8 cm ; stems leafy, covered with long spreading white hairs.

Abundant in an old garden clearing on red soil ; seasonally wet dambo ; open grassland on damp peaty soil ; road bank ; 1650-2100 m alt.

E. robustum Bak. ; Adansonia, Sér. 2, 11 : 177, 1971. – Icon. : Staner & De Craene, Bull. Mus. Congo Belge, Bot., Sér 6, 11 : pl. 28 fig. 6, 1934.

Subshrub, woody below, branched above, 0,9-2,4 m tall ; branches densely covered with appressed and spreading silvery white or ferruginous hairs.

Coarse grassland ; bushland ; grassy hillsides with scattered *Protea, Combretum ;* rocky hillsides ; woodland ; grassy savanna with *Loudetia ;* wooded valley ; 520-2300 m alt.

E. sacleuxii Tiss. ; Adansonia, Sér. 2, 11 : 180, 1971.

Plant with a tuft of 6-10 slender stems ± prostrate then erect, 20-40 cm tall, striate, tomentose ; sometimes leafless at the time of the first flowers ; first leaves short, the following longer (habit variable with the age).

Lateritic outcrop ; on sandstone ; sometimes in fallow land ; wooded savanna.

E. schweinfurthii Bak. f. ; Adansonia, Sér. 2, 11 : 192, 1971.

Perennial herb with a single erect unbranched stem 10-20 cm tall from a woody tuberous rootstock 4,5 × 1,5 cm ; stems angular, somewhat zigzag, with appressed greyish hairs above, glabrescent below ; seeds unknown ?

Laterite ; rocky outcrops.

E. scioanum Avetta ; Adansonia, Sér. 2, 11 : 172, 1971 (sub nom. *E. lejeunei).* – Icon. : Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1 : pl. 28 fig 4, 1934.

Perennial herb, prostrate or sprawling or with erect or ascending shoots from a prostrate stem or underground rhizome, rarely erect, 0,2-1,2 m tall or long, branched ; branches usually covered with spreading ferruginous hairs or appressed-pubescent.

Grassland ; forest glades ; thickets ; rocky hillsides ; sometimes persisting in cultivated ground ; sandy or murram soil ; evergreen forest edges ; scrub ; savanna ; fallow land ; pastures ; 1410-2800 m alt.

Comprises 2 subspp. : – subsp. **scioanum ;** – subsp. **lejeunei** (Staner & De Craene) Verdc. with 3 vars.

E. shirense Bak. f. ; Adansonia, Sér. 2, 11 : 183, 1971. – Icon. : Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1 : pl. 30 fig. 4, 1934.

syn. : *E. filipendulum* Bak. f., incl. var. *prostratum* Torre (syn. of var. **shirense)**.

Perennial herb with 1-few erect unbranched or sparsely branched stems 8-35(-50) cm tall, either short and condensed and very leafy or more elongated ; rootstock a globose or ovoid tuber, 1,5-4 × 1-2,5 cm ; stems slender, when young covered with long spreading hairs to 4 mm long.

ERIOSEMA SHIRENSE

Grassland ; *Brachystegia, Uapaca* and other deciduous woodlands on poor soil ; wooded-grassland and savanna ; grassy savanna ; dry and moist dambo edges ; swampy grassland ; *Protea* scrub ; dry thickets ; roadsides ; 540-2240 m alt.

Comprises 3 vars. : – var. **shirense ;** – var. **oubanguiense** Staner & De Craene (syn. : *E.* aff. *shirense* sensu Tisserant, Bull. Mus. Natl. Hist. Nat., Sér. 2, 2 : 315, 1930, non Bak. f.) ; – var. **pawekiae** Verdc. in Fl. Zambes. 3/5 : 234, 2001.

E. sparsiflorum Bak. f. ; Adansonia, Sér. 2, 11 : 161, 1971.

Erect pyrophytic herb with many unbranched stems (10-)18-32(?100) cm tall from a spreading woody rootstock ; forming colonies after burning ; stems sparsely leafy, the foliage mostly developing after the flowers are well developed, spreading pubescent.

Dry bush ; savanna with *Isoberlinia doka ;* laterite plateau ; old cultivations ; wooded grassland with *Combretum ;* grassland ; appearing after recent burns and before the rains ; 1080-2100 m alt.

Comprises 2 vars., with intermediates between them ; field observations needed.

E. speciosum Welw. ex Bak. ; Adansonia, Sér. 2, 11 : 177, 1971.

Shrub 0,75-3 m tall, erect, becoming very woody at the base ; branches firm, densely grey-downy.

Thickets at edges of forests ; 1700 m alt.

E. spicatum Hook. f., incl. “forme *caillei* “ ; Adansonia, Sér. 2, 11 : 171, 1971.

syn. : *E. caillei* A. Chev., nom. ; *E. djalonense* A. Chev., nom. ; *E. parviflorum* var. *laxiusculum* Staner & De Craene and var. *sarmentosum* Staner & De Craene – All of subsp. **spicatum.**

Semi-shrubby plant, suberect, 13-45-120(-200) cm tall, sparingly branched, softly tawny-hairy, from a woody base, or half straggling with slender stems to 2,5 m long (named var. *sarmentosum)*, from a woody rootstock.

Humid ground ; wooded savanna ; granitic rocks ; sunny rocks ; edges of small wood in savanna ; old cultivations ; open and dry ground ; meadows ; 0-1800 m alt.

E. staneranum Hauman, incl. var. *flavescens* Hauman ; Adansonia, Sér. 2, 11 : 178, 1971.

Trailing herb (?or climbing) or erect subshrubby herb or rather ramose shrub 0,3-1,5 m tall ; branches hairy.

Imperata, Melinis grassland ; *Pennisetum* grass clumps in damp places ; savanna ; roadsides ; swamps ; sometimes common ; near dwelling ; 795-1000 m alt.

Perhaps a synonym under **E. angolense.**

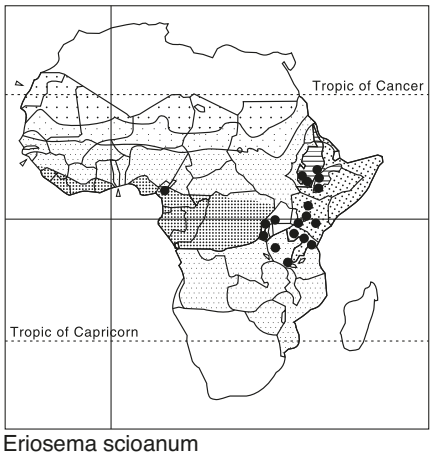
E. tenuicaule Hauman

Herb with ? some stems erect, not ramose, to 40 cm tall with reddish-brown, short, erect hairs.

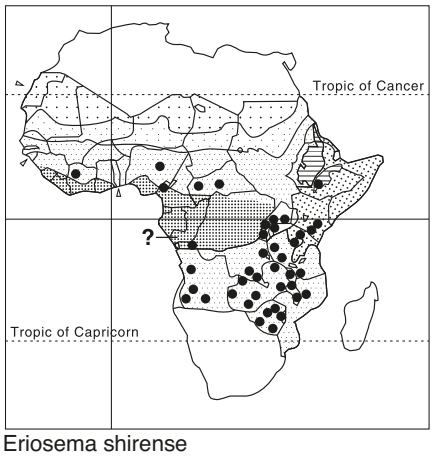
Dry savanna.

E. tephrosioides Harms

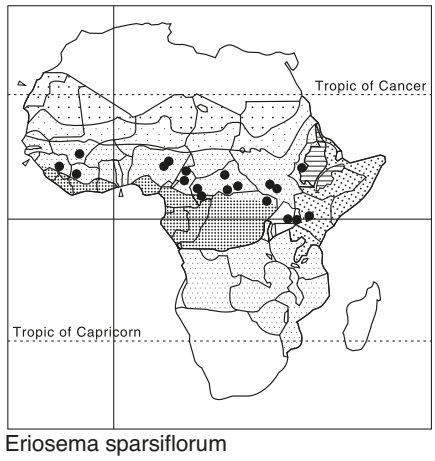
Subshrub 50-90 cm tall, much branched, with pubescent to velvety, ± angular stems.



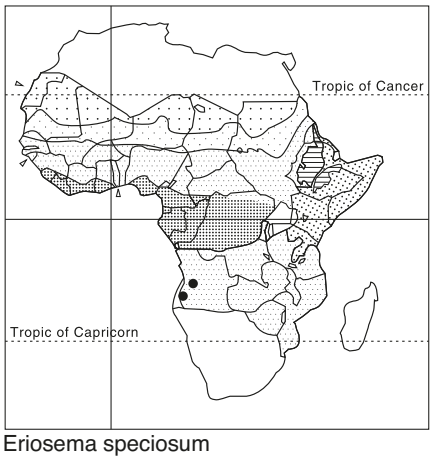
Eriosema scioanum



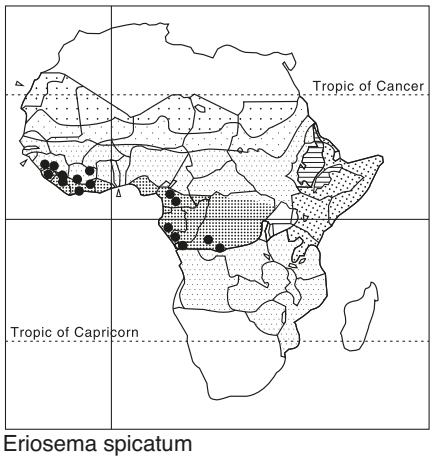
Eriosema shirense



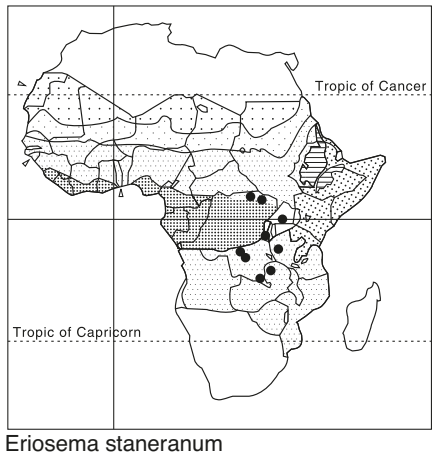
Eriosema sparsiflorum



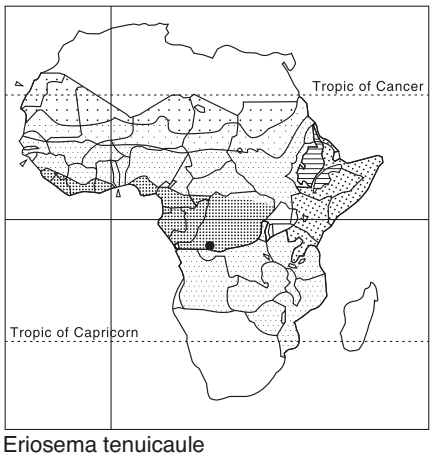
Eriosema speciosum



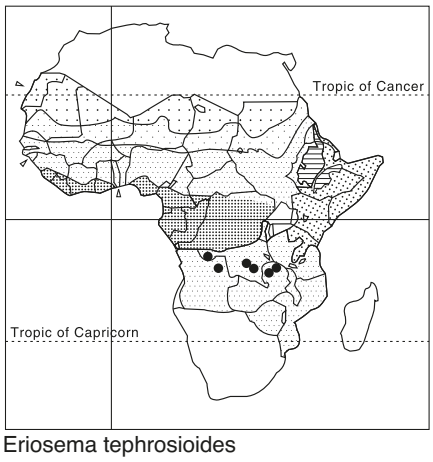
Eriosema spicatum



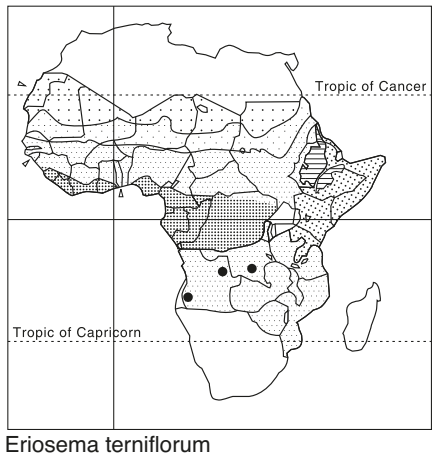
Eriosema staneranum



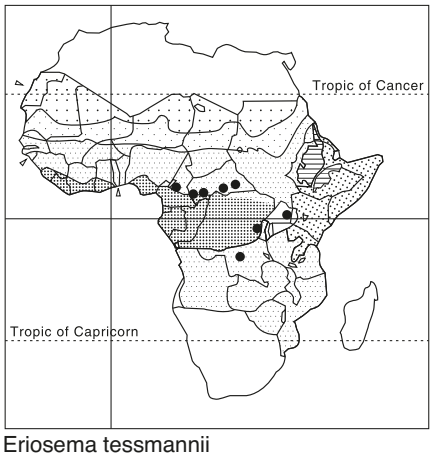
Eriosema tenuicaule



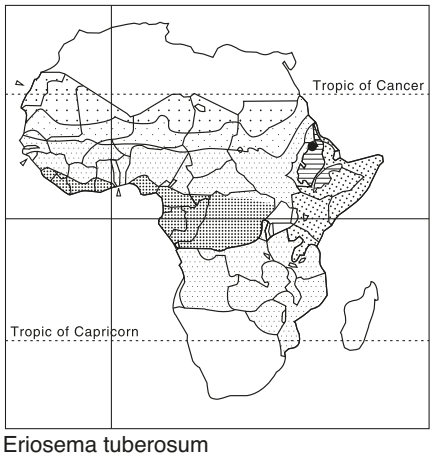
Eriosema tephrosioides



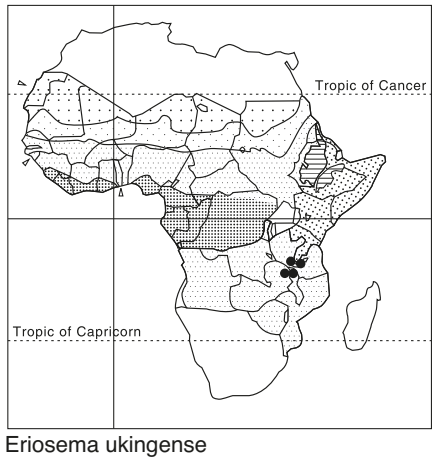
Eriosema terniflorum



Eriosema tessmannii



Eriosema tuberosum



Eriosema ukingense

ERIOSEMA TEPHROSIOIDES

Savanna, very abundant on Kalahari sand in Kwango (Zaire); grassland by stream; woodland edge; wooded savanna; 1100-1500 m alt.

Comprises 2 vars.: – var. **tephrosioides;** – var. **salicifolium** Hauman (syn.: *E. tephrosioides* var. *angustifoliolatum* Hauman, nom. inval.).

E. terniflorum Hiern ex Bak. f.

syn.: *E. antunesii* Harms

Ferruginous and pubescent perennial herb 15-20 cm tall, with sub-caespitose prostrate-ascending, rather slender stems arising from a knotty, branched rootstock with elongated fusiform tubers.

Wooded thickets; grassy savanna (very abundant); 1797-1900 m alt.

Comprises 2 vars.

Is perhaps a synonym under **E. rhynchosioides.**

E. tessmannii Bak. f. ex Haydon; Adansonia, Sér. 2, 11: 198, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 29 fig.1, 1934 (*E. tisserantii)*.

syn.: *E. tisserantii* Staner & De Craene, incl. var. *augustifolium* Hauman; *E. rhodesicum* sensu Tisserant, Bull. Mus. Natl. Hist. Nat., Sér. 2, 2: 318, 1930, non R. E. Fries; *E. praecox* sensu Tisserant, o.c.: 317.

Erect perennial herb with 3-5 sparsely branched or unbranched angular stems, 8-50 cm tall from a fleshy spindle-shaped rootstock 10 × 2 cm; stems with a dense pale-brownish silky to ferruginous pubescence of appressed hairs.

Rocky hillsides; sandstone rocks; savanna with *Lophira;* clearing for plantation; wooded savannas subject to fire; cultivated land; granitic soil; 800-1800 m alt.

Confused with *E. monticola.*

E. tuberosum A. Rich.

Erect or ascending perennial herb with a silvery pilose stem from a tuberous rootstock.

? Wooded grassland; ±1500 m alt.

Close to *E. schweinfurthii.*

E. ukingense Harms

Erect pyrophytic herb with several usually unbranched or sparsely branched stems (7-)15-100 cm tall, from a woody rootstock; stems often very leafy, covered with long and short hairs.

Seasonally burnt grassland; dry grassland; *Protea* grassland with bracken, etc.; 2100-2600 m alt.

E. vanderystii (De Wild.) Hauman; Adansonia, Sér. 2, 11: 160, 1971.

Perennial herb forming clumps 0,6-1 m tall; stems arching or ± prostrate, somewhat zigzag, strongly flattened above, to 1,5 m long, with dense ferruginous velvety tomentum and sometimes long spreading hairs as well, but at length only pubescent and purplish.

Seasonal swamps in grassland or grassland with scattered *Acacia* or *Brachystegia* woodland; moist dambos; drier parts of old river beds; 900-1650 m alt.

ERIOSEMA

E. verdickii De Wild.; Adansonia, Sér. 2, 11: 188, 1971. – Icon.: Staner & De Craene, Ann. Mus. Congo Belge, Bot., Sér. 6, 1: pl. 31 figs. 2, 5, 1934.

Erect herb 0,15-1,25 cm tall, with a single sparsely branched stem from a small napiform or subglobose tuber 1,5-5 × 1-1,5 cm; stems with ± appressed white hairs and also spreading longer ferruginous hairs.

Grassland with scattered trees; dry woodland; *Brachystegia* woodland on stony soil; moist dambos; grassland on white sand; peaty grassland; laterite; open forest; termite mounds; humid meadows; wooded valley; 1070-2130 m alt.

Comprises 2 vars.: – var. **verdickii;** – var. **schoutederianum** (Staner & De Craene) Verdc. (bas.: *E. schoutederianum* Staner & De Craene; syn.: *E. cordifolium* Hochst. ex A. Rich. var. *longibracteatum* Hauman).

E. welwitschii Hiern ex Bak. f.

Dwarf perennial herb with decumbent, ascending or suberect, tenacious stems becoming woody at the base, 7,5-15 cm long, tawny, softly and shortly pubescent, branched.

Not uncommon in sandy sparingly grassy situations at stream banks.

Allied to **E. procumbens** Benth. ex Bak. f., a common herb in Madagascar.

Is perhaps a synonym under **E. rhynchosioides.**

E. youngii Hiern ex Bak. f.; Adansonia, Sér. 2, 11: 182, 1971.

Perennial herb with a single ascending or decumbent stem to 20 cm long, bearing 1-2 trailing branches near the base; rootstock a tuber 2,5 × 1,3 cm; stems slender, covered with spreading or somewhat appressed hairs, often glabrescent below.

Marshy grassland; wooded grassland; bushland; lateritic plateau; sandstone soil; *Terminalia* open scrub-savanna; rocky lateritic banks by marsh, grassland on peaty soil, permanently wet and seasonally dry dambos; edge of vlei; 125-1650 m alt.

Comprises 2 vars.

Eriosema salignum E. Mey., a distinctive species similar to *E. burkei,* but with a silvery, velvety indumentum, from S. Africa is doubtfully recorded from S Mozambique (exact locality of Junod 427a specimen not known).

Perennial slender erect herb 0,1-0,6 m tall, growing in grassland; seems to reach just the southern border of Mozambique, according to Ahlefeldt & al., Medicin. pl. traded on S. Africa's E seaboard: 45, 2003. – Not mapped.

SYNONYMS:

Eriosema andongense Bak. f. = **Eriosema pauciflorum** var. **pauciflorum**

antunesii Harms = **E. tenuiflorum** var. **tenuiflorum**

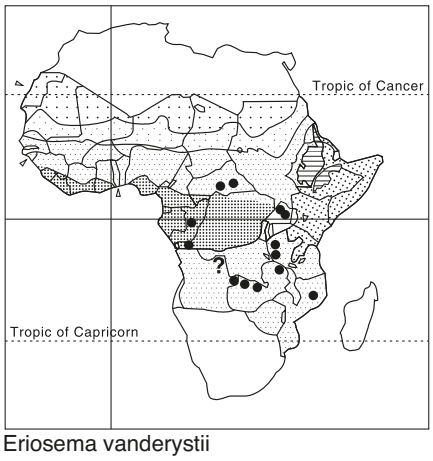
argenteum A. Chev. = **E. psoraleoides**

atacorense A. Chev., nom. = **Pseudoeriosema andongense**

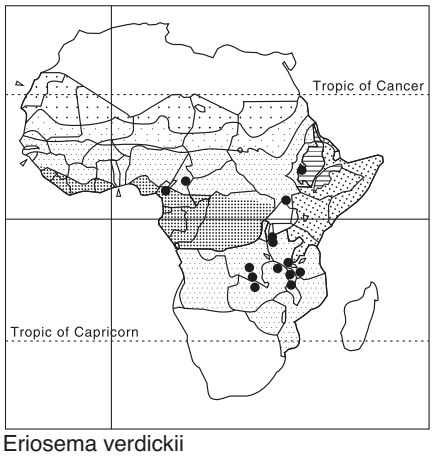
bequaertii De Wild. = **Eriosema chrysadenium** var. **bequaertii**

bianoense Hauman = **E. bauchiense**

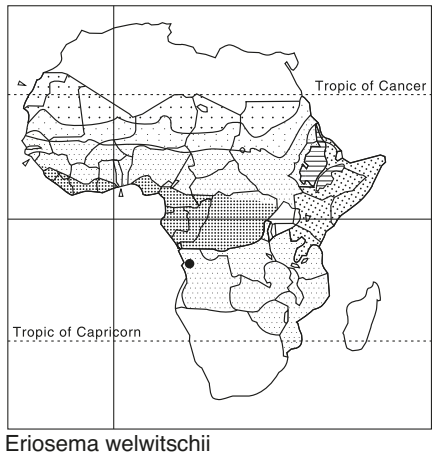
buchananii Bak. f. var. *richardii* (Bak. f. & Haydon) Staner, incl. fa. *ellipticum* (Staner & De Craene) Staner = **E. nutans**



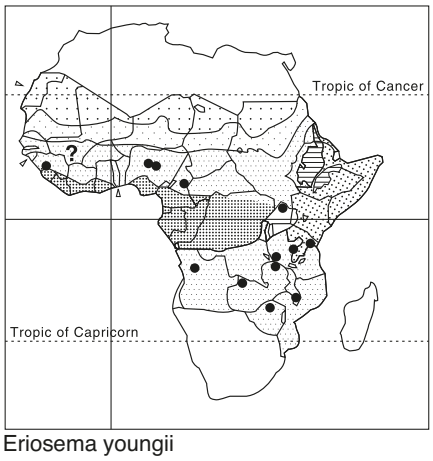
Eriosema vanderystii



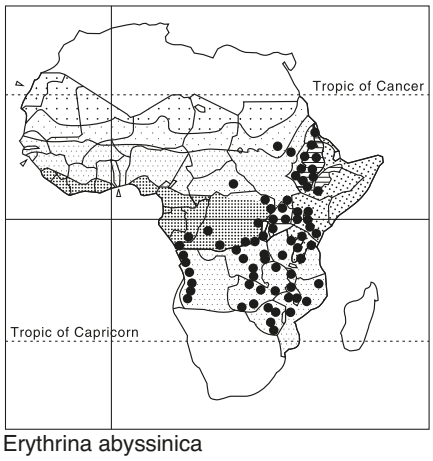
Eriosema verdickii



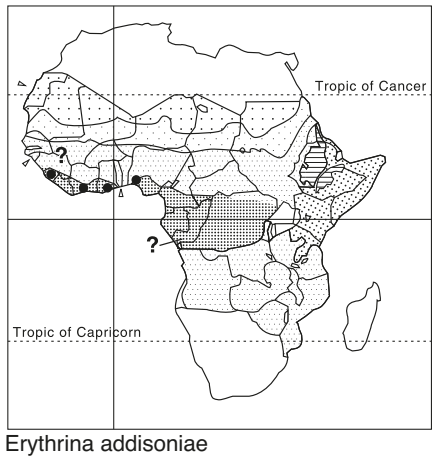
Eriosema welwitschii



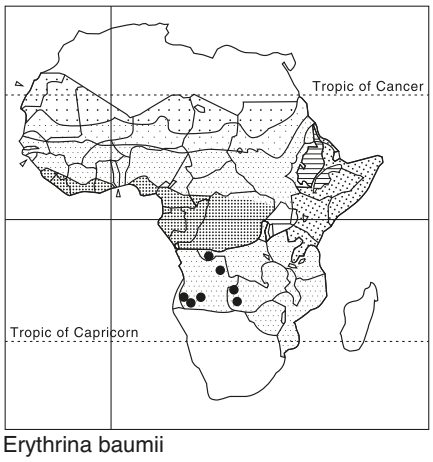
Eriosema youngii



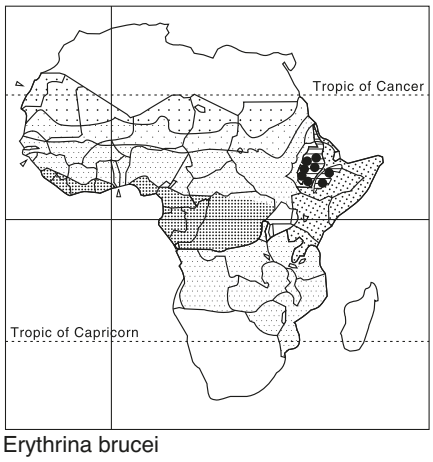
Erythrina abyssinica



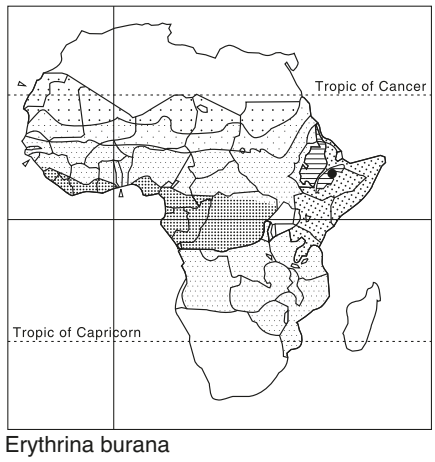
Erythrina addisoniae



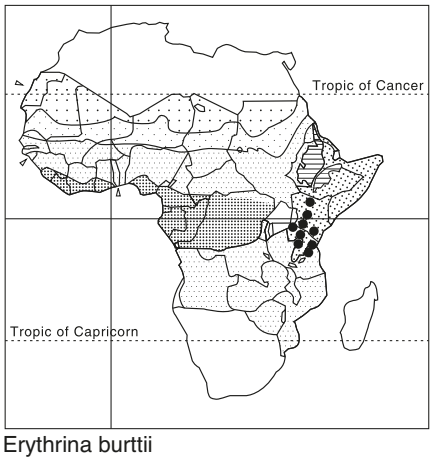
Erythrina baumii



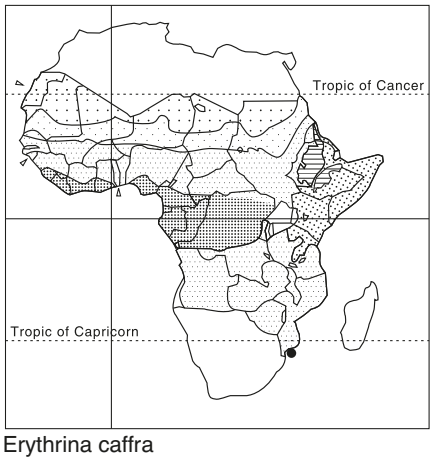
Erythrina brucei



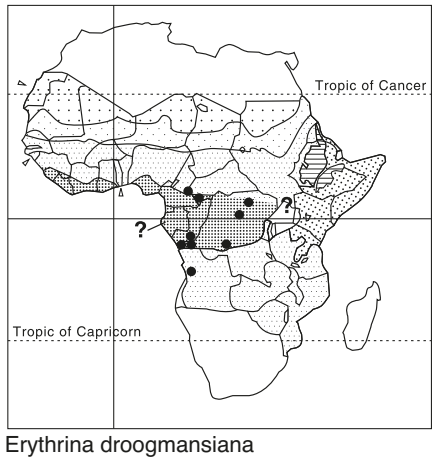
Erythrina burana



Erythrina burttii



Erythrina caffra



Erythrina droogmansiana

burkei Harv. var. *leucanthum* (Bak. f.) Hauman = **E. burkei** var. **burkei**

caillei A. Chev. = **E. spicatum** subsp. **spicatum**

cajanoides (Guill. & Perr.) Hook. f. = **E. psoraleoides**

chevalieri (Harms) Hutch. & Dalziel = **Rhynchosia**

chrysadenium Taub. var. *intermedium* Hauman = **Eriosema erici-rosenii** var. **erici-rosenii**

claessensii De Wild. = **E. ellipticum** subsp. **claessensii**

consanguineum Klotzsch = **E. parviflorum**

cordifolium A. Rich. var. *longibracteatum* Hauman = **E. verdickii** var. **schoutederianum**

cryptanthum Bak. = **Pearsonia cajanifolia** subsp. **cajanifolia**

cryptanthum Milne-Redh. = **Eriosema kankolo** subsp. **kankolo**

dictyoneuron Standl. = **Rhynchosia alluaudii**

djalonense A. Chev. = **Eriosema spicatum** subsp. **spicatum**

elongatum Baill. = **E. glomeratum**

endlichii Harms = **Rhynchosia alluaudii**

erectum Bak. f. = **Eriosema macrostipulum** var. **macrostipulum**

erythrocarpon Beck = **Flemingia grahamiana**

filipendulum Bak. f., incl. var. *prostratum* Torre = **Eriosema shirense** var. **shirense**

flemingioides Bak. var. *rhodesicum* L. Bolus = **E. englerianum**

floribundum Klotzsch = **E. psoraleoides**

gilletii De Wild. & Th. Durand = **E. parviflorum**

glomeratum (Guill. & Perr.) Hook. f. var. *laurentii* (De Wild.) Bak. f. = **E. laurentii**

glomeratum sensu Hepper p.p. = **E. laurentii** subsp. **laurentii**

gracile Welw. ex Hiern = **E. gracillimum**

griseum auctt. p.p., non Bak. = **E. griseum** var. **togoense**

guenzii Sond. = **E. cordatum**

hockii De Wild. = **E. englerianum**

holophyllum Bak. f. = **Pseudoeriosema** ? **andongense**

humbertii Staner & De Craene = **Eriosema jurionianum** var. **fulvum**

incanum Klotzsch = **E. psoraleoides**

insigne O. Hoffm. = **Rhynchosia**

ippyense Tiss. = **Eriosema linifolium**

jurionianum Staner & De Craene var. *ituriense* Staner & De Craene = **E. jurionianum** var. **fulvum**

lejeunei Staner & De Craene = **E. scioanum** subsp. and var. **lejeunei**

leucanthum Welw. ex Bak. f. = **E. burkei**

lobophyllum Harms = **Pseudeminia comosa**

macrophyllum Klotzsch = **Eriosema psoraleoides**

mirabile R. E. Fries = **E. rhodesicum** var. **rhodesicum**

var. *huambense* Torre = **E. rhodesicum** var. **huambense**

montanum Bak. f. var. *hirsutum* Hauman = **E. scioanum** subsp. **lejeunei**

muxiria Bak. = **Pseudeminia muxiria**

muxiria sensu auctt., non Bak. = **Pseudeminia benguellensis**

oblongum Harv. = **Eriosema pauciflorum** var. **pauciflorum**

occultiflorum J. B. Gillett = **E. kankolo** subsp. **kankolo**

parviflorum E. Mey. subsp. *collinum* Hepper = **E. spicatum** subsp.

parviflorum E. Mey. var. *laxiusculum* Staner & De Craene and var. *sarmentosum* Staner & De Craene = **E. spicatum** subsp. **spicatum**

parviflorum sensu Hepper p.p. = **E. spicatum**

podostachyum Hook. f. = **E. parviflorum** subsp.

polystachyum E. Mey. = **E. psoraleoides**

polystachyum (A. Rich.) Bak. = **E. jurionianum**

var. *fulvum* (A. Rich.) Bak. f. = **E. jurionianum** var. **fulvum**

praecox R. E. Fries = **E. rhodesicum**

praecox sensu Tiss. = **E. tessmannii**

proschii Briq. = **E. psoraleoides**

quarrei Bak. f. = **E. ramosum**

radicosum A. Rich. = **Ophrestia**

randii Bak. f. & Haydon = **Rhynchosia insignis** subsp. **insignis**

rhodesicum sensu Tiss. = **Eriosema tessmannii**

richardii Benth. ex Bak. f. & Haydon = **E. nutans**

fa. *ellipticum* Staner & De Craene = **E. nutans**

var. *ovatum* Staner & De Craene = **E. buchananii**

rufum (Schumach. & Thonn.) Baill. = **E. laurentii**

schoutederianum Staner & De Craene = **E. verdickii** var.

schoutederianum sensu Hepper = **E. lebrunii**

sericeum A. Chev. p.p. = **E. psoraleoides**

sericeum Bak. = **E. glomeratum**

shirense Bak. f. var. *longibracteatum* Hauman = **E. shirense** var. **shirense**

aff. *E. shirense* sensu Tiss. = **E. shirense** var. **oubanguiense**

sousae M. A. Exell = **E. macrostipulum** var. **macrostipulum**

spicatum "forme podostachyum" Tiss. = **E. parviflorum**

stolzii Harms = **E. ukingense**

stolzii auct. in herb. = **E. pseudostolzii**

subacaule A. Chev. p.p. = **E. lateriticola**

subacaule A. Chev. quoad Chevalier 23942 = **E. pellegrinii**

suborbiculare Hauman = **E. macrostipulum** var. **suborbiculare**

tenue Hepper = **E. youngii** var. **youngii**

tenue Hepper var. *rufum* Hepper = **E. youngii** var. **rufum**

tephrosioides Harms var. *angustifoliolatum* Hauman = **E. tephrosioides** var. **salicifolium**

tisserantii Staner & De Craene, incl. var. *angustifolium* Hauman = **E. tessmannii**

togoense Taub. = **E. griseum** var. **togoense**

togoense sensu Tiss. 1930 = **E. letouzeyi**

upembae Hauman = **E. bauchiense**

urostachyum Harms = **Pseudeminia comosa**

velutinum Bak. f. & Haydon = **Eriosema vanderystii**

ERYTHRINA / *26*

A genus of over 100 species, usually armed trees and shrubs, in warm regions. More than half of the species are cultivated; propagation by cuttings and stakes is easy; many are ornamental with red flowers appearing before the leaves.

Herbarium material is often incomplete (fertile and vegetative material of the same plant difficult to get), and hence difficult to determine.

Two species are incompletely known; for *E. pygmaea:* no flowers, no ecology, and known only from the type; for *E. schliebenii:* no pod, and only 2 collections known, and identity uncertain.

Erythrina abyssinica Lam. ex DC., incl. subsp. *suberifera* (Welw. ex Bak.) Verdc.

syn.: *E. tomentosa* R. Br. ex A. Rich., *incl.* var. *longicauda* Bak. f.; *E. pelligera* Fenzl; *Chirocalyx abyssinicus* (Lam. ex DC.) Hochst.; *C. tomentosus* Hochst.; *E. suberifera* Welw. ex Bak.; *E. huillensis* Welw. ex Bak.; *Carallodendron suberifera* (Welw. ex Bak.) Kuntze; *Erythrina comosa* Hua; *E. mossambicensis* Sim; *E. bequaertii* De Wild.; *E. kaessneri* Bak. f.; *E. warneckei* Bak. f.; *E. platyphylla* Bak. f.; *E. eggelingii* Bak. f.; *E. webberi* Bak. f. p.p. quoad inflorescentia.

Shrub or tree 1-15(-24) m tall; trunk armed with woody bosses; bark corky; branches armed with spines 4-8 mm long and densely clothed with fine tomentum; with much branched, usually rounded, spreading crown.

Open woodland with *Brachystegia, Julbernardia; Acacia, Euphorbia* associations; bushland; forest edges; rocky places; relic in cultivated ground; woodland with *Combretum molle, Cussonia arborea, Stereospermum kunthianum, Entada abyssinica; Loudetia* grassland with scattered trees; termit mounds; gravelly soils; open forests along river banks; sometimes very abundant. – One of the most characteristic trees of patches of forest in savannas or in open savannas, particularly if seasonally burnt. Usually flowering when quite leafless.

Can be grown as a "living fence" from truncheons.

Forming hybrids with **E. lysistemon.**

E. addisoniae Harms

Tree 12-21 m; trunk 1,8 m Ø; bark thick, rough, sappy, with corky spines.

Drier parts of closed rain-forest; 300-700 m alt.

E. baumii Harms

syn.: *E. mendesii* Torre

Suffrutex with slender annual woody stems armed with scattered recurved prickles, ramose at the top, 30-70 cm tall, from a stout, horizontal, spindle-shaped rootstock 45 × 15 cm; branches puberulous, slightly aculeate. Pods known!

White sand at forest edge under high trees; shrub-grown meadows; dry beds of seasonal rivers; moist depressions in mixed woodland; grassland and wooded grassland on Kalahari sand; 900-1400 m alt.

Botswana, Namibia.

E. brucei Schweinf. emend. J. B. Gillett, Kew Bull. 15: 428, 1962.

Tree to 15-20 m, with prickly branches.

Edges and open places of forests or woodlands; 1400-2600 m alt.

Can be grown easily from cuttings (live fences); domestication of an endemic Ethiopian species.

E. burana Chiov.

Tree to 12 m; branches prickly; flowering when leafless.

In hedges on granite rock; woodland; bushland; fairly widespread in Harar; cultivated in Shewa; 1350-2100 m alt.

E. burttii Bak. f.

Flat-topped tree 3,5-15(-18) m, with raised bosses bearing curved prickles on the old deeply fissured very corky bark; flowering when leafless; stems grey, wrinkled, roughened by leaf- and peduncle-scars, soon glabrous, mostly prickly.

Acacia-Combretum or *Acacia-Commiphora* bushland or derived grassland; 800-1650 m alt.

E. caffra Thunb., excl. var. *mossambicensis* Bak. f. (= **E. lysistemon)**.

syn.: *E. viarum* Tod.; *E. insignis* Tod.; *E. constantiana* Micheli; *E. fissa* C. Presl

Tree (3,5-)7-18 m; branches with prickles.

Coastal forest; wooded stream banks; to 200 m alt.

S. Africa.

Further collecting of flowering specimens is needed to clarify the distribution in Mozambique where the species is now only known from Inhaca Island.

(E. x **coddii** Barneby & Krukoff)

Small tree, 3-10 m, with erect soon branching bole; bark purplish, smoothly striate; young parts densely hairy; fruit unknown.

A natural hybrid between **E. lysistemon** and **E. latissima** in areas where these species overlap (C Zimbabwe).

S. Africa.

E. droogmansiana De Wild. & Th. Durand

syn.: *E. hylobia* Harms

Shrub or tree 5-20 m tall with straight smooth bole; branches wrinkled with greyish, glabrous bark, with brown prickles 1,5 mm long.

Rain-forest on firm ground.

E. excelsa Bak.

syn.: *E. bagshawei* Bak. f.; *E. seretii* De Wild.

Tree 9-30 m, with straight bole to 20 m high, armed with strong woody conical spines; bark smooth, pale; usually flowering when quite leafless; young branchlets pale, at first ferruginous velvety, later glabrous, armed with sparse to fairly dense short straight prickles.

Swamp; riverine forest; lake-shore forest; rain-forest; mushitu; 900-1500 m alt.

E. greenwayi Verdc.

Tree to 15 m with spreading rounded crown; bole fluted; bark grey-green with numerous deep longitudinal fissures, covered with thick woody spiny bosses particularly near the base of the bole; young branchlets pale yellowish-brown tomentose, soon glabrous, wrinkled and roughened.

Granite outcrops on very rocky hill-slope in *Cordyla, Delonix, Excoecaria, Commiphora, Grewia, Combretum, Acacia, Isoberlinia* closed deciduous woodland; 750-1000 m alt.

E. haerdii Verdc.

Tree to 8 m; trunk not described; begins to flower before leaves appear; young branchlets velvety ferruginous, ridged, armed with straight spines.

Hillsides bordering valley; 300-330 m alt.

E. humeana Spreng.; Kirkia 14: 124, 1993.

syn.: *E. humei* E. Mey., incl. var. *raja* (Meisn.) Harv. and var. *hastifolia* (G. Bertol.) Bak. f.

Suffrutex with a woody rootstock, rarely a tree to 4 m tall; stems armed with scattered prickles to 8 mm long.

Open grassland with scattered shrubs; to 100 m alt.

S. Africa, Swaziland.

(E. x **lanigera** P. Duvign. & Rochez emend. Barneby & Krukoff)

syn.: *E. lanigera* P. Duvign. & Rochez, nom. invalid.

Small deciduous tree to 13 m with thorny stem; flowers scarlet; flower characters intermediate between the parents **E. abyssinica** and **E. mildbraedii,** in Lake Victoria area (Uganda).

E. latissima E. Mey.

syn.: *Chirocalyx mollissimus* Meisn.; *Erythrina sandersonii* Harv.; *E. gibbsae* Bak. f.

Tree 3-8(-10) m; bark dark grey, corky with deep longitudinal and transverse fissures; stems and branches armed with scattered large conical spines to 1 cm long.

Scattered trees in deciduous woodland and wooded grassland; usually on granite and other rock outcrops; 1000-1700 m alt.

S. Africa, Botswana, Swaziland.

E. livingstoniana Bak.

Tree (2-)5-25 m; bark furrowed, heavily armed with scattered woody bosses tipped with spines to 2,5 cm long.

Rocky hillsides; banks of seasonal rivers; often in stunted mopane scrub; in hot dry areas; 95-630 m alt.

E. lysistemon Hutch.

Tree 2-12(-20) m; bark grey or grey-brown, smooth, not corky, with prickles; branches armed with prickles.

Dry habitats with scrub and wooded grassland; deciduous woodlands; bushland; also coastal sand dunes; 0-1950 m alt.

Botswana, S. Africa, Swaziland.

Cultivated in many parts of the world.

Forming hybrids with **E. abyssinica** and **E. latissima** (cf. under **E.** x **coddii)**.

E. melanacantha Taub. ex Harms

Tree 6-20 m, with much-branched spreading crown, and with large corky bosses bearing curved prickles on old branches; usually flowering when leafless; stems grey or yellow-brown, wrinkled, roughened by leaf- and peduncle-scars, with strong curved black prickles, soon glabrous.

Acacia, Commiphora bushland; semi-desert grassland with *Acacia;* 80-1500 m alt.

Socotra.

Comprises 2 subspp.

E. mildbraedii Harms

syn.: *E. altissima* A. Chev.; *E. buesgenii* Harms; *E. klainei* Pierre ex Harms; *E. problematica* P. Duvign. & Rochez

Tree buttressed at the base, 12-36 m tall, with grey bole 0,3-1,25 m or more Ø, armed with conical corky-based spines; bark smooth; usually flowering (long pink racemes) when leafless; young branchlets grey-brown, prominently ridged and covered with leaf-scars, at first ferruginous tomentose, later glabrescent, sparsely to moderately densely covered with short straight black prickles.

Rain-forest; deciduous and half-deciduous forest; near swamp; secondary forest; 500-1600 m alt.

Not in Mali.

One of the largest and one of the most beautiful species in the genus when in bloom.

E. orophila Ghesq.

Tree 15-21 m; bole straight, with smooth bark; branches with greyish bark, densely brown-tomentose when young, with straight spines 2-4 mm long, brown; seeds very large.

Mesophyllous forest on hill slope and in ravines; 1850-(or ? 1650)-2400 (? or 2100) m alt. – Remarkable for its highland habitat.

E. pygmaea Torre

Dwarf shrub, erect ±15 cm tall, rhizomatous; stem glabrous with striate bark; branches pubescent; flowers unknown.

Ecology unknown; ±1450 m alt.

Only known from the type collected in 1960.

E. sacleuxii Hua

Stiffly branched tree 9-24 m, with open rounded crown; bark grey-brown, smooth, but with ridges of scattered corky prickle-tipped emergences; commencing to flower before the leaves develop; young branches stout, drooping, densely covered with short straight black prickles, scarred, at first ferruginous hairy, later glabrous.

Scattered-tree grassland; bushland; open woodland; semi-deciduous and evergreen coastal forest; also as a relic in coconut and mixed plantations; 0-450 m alt.

The type of *E. webberi* Bak. f. consists of the leaflets of *E. sacleuxii* and the inflorescence of *E. abyssinica.*

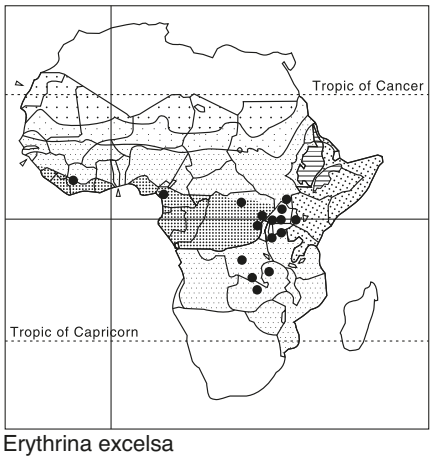
E. schliebenii Harms ex Mildbr.

Tree 5-10 m; pod unknown.

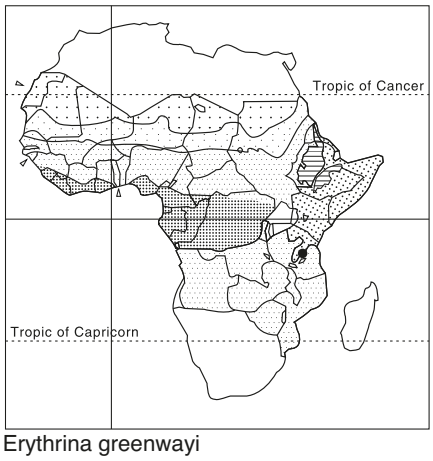
Open woodland; 240 m alt.

Once the fruit discovered, new comparisons with *E. perrieri* R. Vig. (a critically endangered species from a single area in W Madagascar) will be needed.

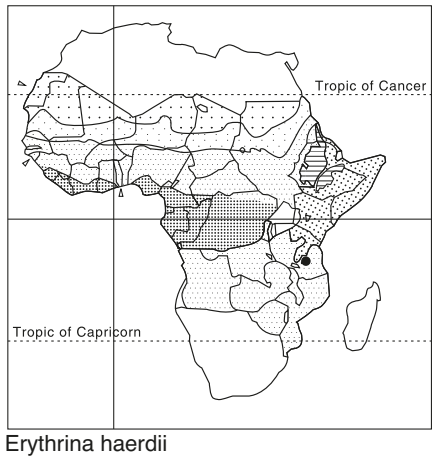
Known only from 2 collections made in 1934-1935.



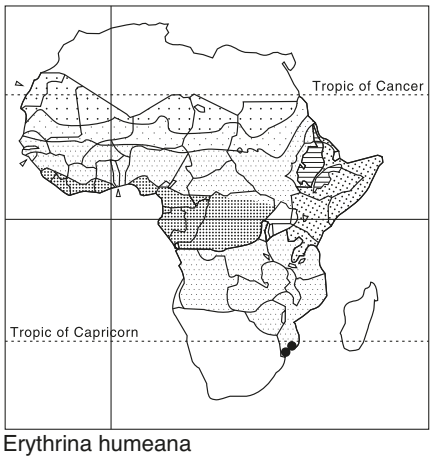
Erythrina excelsa



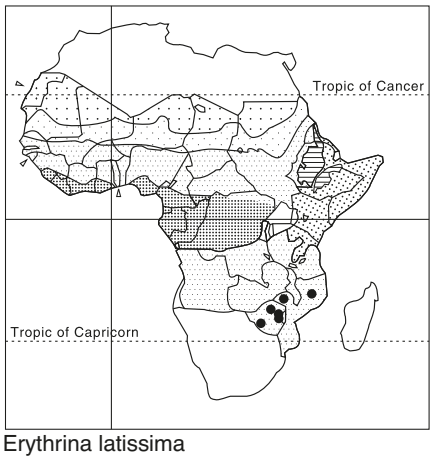
Erythrina greenwayi



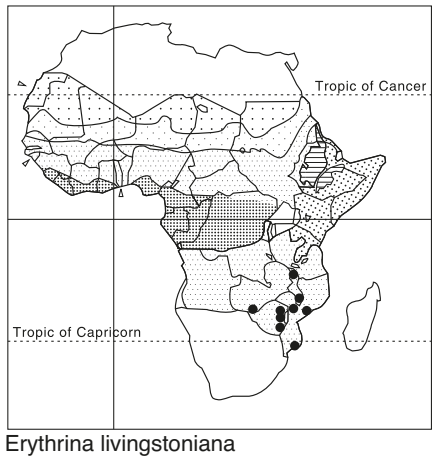
Erythrina haerdii



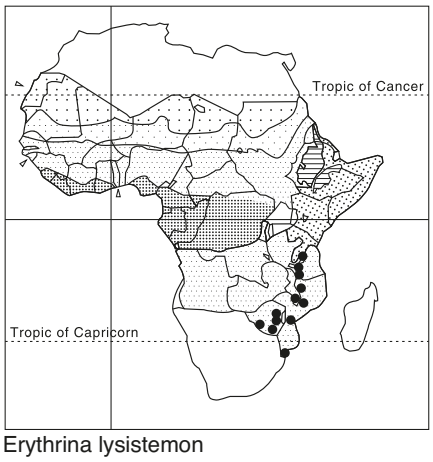
Erythrina humeana



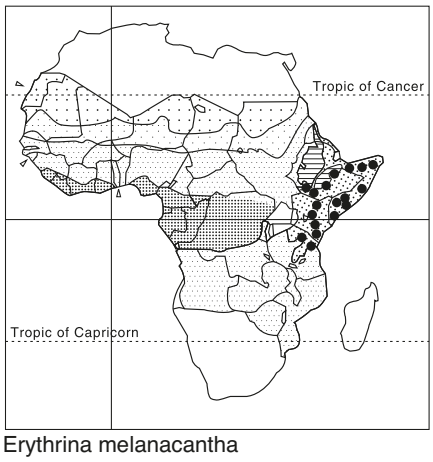
Erythrina latissima



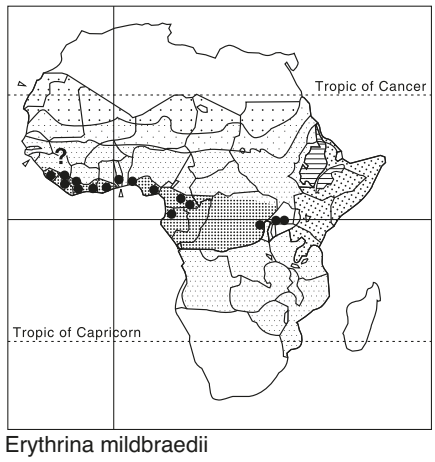
Erythrina livingstoniana



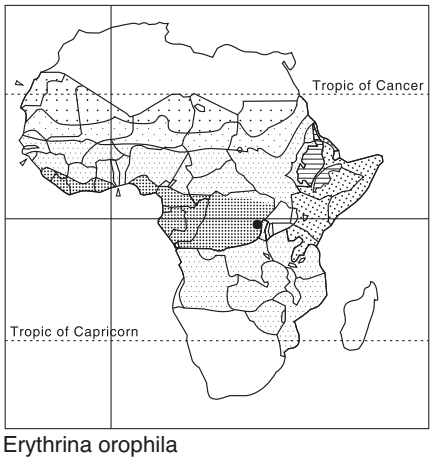
Erythrina lysistemon



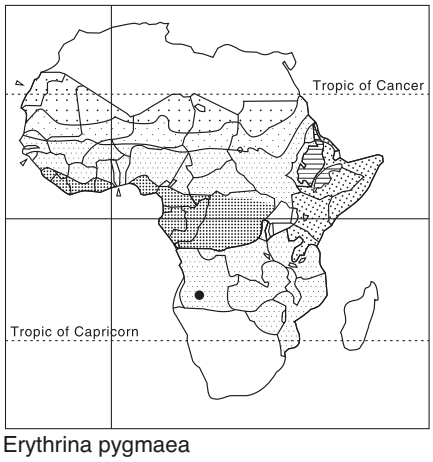
Erythrina melanacantha



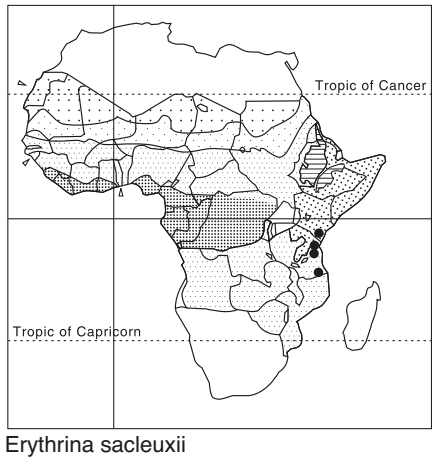
Erythrina mildbraedii



Erythrina orophila



Erythrina pygmaea



Erythrina sacleuxii

ERYTHRINA

E. senegalensis A. DC., incl. var. *camerounensis* Aubrév., nom. invalid.

syn.: *E. latifolia* Schumach.; *E. guineensis* G. Don; *Chirocalyx latifolius* (Schumach.) Walpers; *Duchassaingea senegalensis* (A. DC.) Hasskarl

Usually a tree 3-4,5 m but sometimes to 12-15 m; trunk with corky dark grey bark armed with stout prickles slightly recurved from a woody base; flowering usually when leafless; branches tortuous; flowers large, red, conspicuous.

Burned savanna; marigot edges; plateau with fine gravel; degraded regrowths; sandy colluvium; coastal savanna in Ghana; near sea-level to 1200 m alt.

Commonly planted as a hedge.

E. sigmoidea Hua

syn.: *E. dybowskii* Hua; *E. lanata* Taub. ex Gilg, non Rose; *E. sigmoidea* Pobég.; *E. eriotricha* Harms; *E. sudanica* Bak. f.

Tree 3-6 m, or 10-20 m; stem armed with stout recurved prickles; bark brownish yellow or cream, thick and corky; branches grey-green, velvety pubescent.

Open forest on temporarily flooded sand; forest patch in sandy-clayey soil on hardpan; savanna; gravelly soils along streams; to 1080-1780 m alt.

Very variable.

E. tholloniana Hua

syn.: *E. gilletii* De Wild.

Shrub or tree 4-10(-12) m tall with straight bole and smooth bark; branches with dark-brown, wrinkled bark, glabrescent, armed with straight or curved prickles 2-5 mm long, dark- or light-brown.

Secondary bush.

E. variegata L.

Tree 6-12(-20) m, with much branched crown; branches prickly; flowering when leaves not present; stems pale, with short straight conical black prickles, at first densely stellate tomentose but soon glabrous.

Coastal bushland on dry edge of *Avicennia* mangrove-swamp and other associations just above high-water mark.

Largely sea-dispersed species; seeds have been found on beaches in Riversdale (S. Africa). Wild in East Africa (Greenway).

Seychelles, Mascarene Islands; China; Fiji, Samoa, Society Islands.

Also cultivated. Easily propagated from cuttings, stakes and seeds.

E. vogelii Hook. f.

syn.: *Macrocymbium vogelii* (Hook. f.) Walpers; *Erythrina bancoensis* Aubrév. & Pellegr.; *E. vignei* Burtt Davy, nom.

Tree 6-15 m; trunk 1,5 m in girth, 0,3 m Ø with woody conical prickles; crown spreading; twigs spiny.

Coastal rain- and secondary forest; abandoned forest clearings.

Bioko/ Fernando Poo.

Not in Togo.

Used for fence-posts.

ERYTHRINA

(E. zeyheri Harv.)

Erronously reported from Zimbabwe. Vegetative material collected is probably juvenile foliage of **E. latissima** (fide Fl. Zambes. 3/5 : 13, 2001).

Many exotic **Erythrina** species are cultivated in our area. See list in Enum. 2 : 88, 1992.

SYNONYMS:

Erythrina altissima A. Chev. = **Erythrina mildbraedii**

bagshawei Bak. f. = **E. excelsa**

bancoensis Aubrév. & Pellegr. = **E. vogelii**

bequaertii De Wild. = **E. abyssinica**

buesgenii Harms = **E. mildbraedii**

caffra Thunb. var. *mossambicensis* Bak. f. = **E. lysistemon**

caffra sensu auctt. = **E. lysistemon**

comosa Hua = **E. abyssinica**

constantiana Micheli = **E. caffra**

dybowskii Hua = **E. sigmoidea**

eggelingii Bak. f. = **E. abyssinica**

eriotricha Harms = **E. sigmoidea**

fissa C. Presl = **E. caffra**

gibbsae Bak. f. = **E. latissima**

gilletii De Wild. = **E. tholloniana**

guineensis G. Don = **E. senegalensis**

hastifolia G. Bertol. = **E. humeana**

huillensis Welw. ex Baker = **E. abyssinica**

humeana sensu auctt., non Bak. = **E. lysistemon**

humei E. Mey., incl. var. *hastifolia* (G. Bertol.) Bak. f. and var. *raja* (Meisn.) Harv. = **E. humeana**

hylobia Harms = **E. droogmansiana**

insignis Tod. = **E. caffra**

kaessneri Bak. f. = **E. abyssinica**

klainei Pierre ex Harms = **E. mildbraedii**

lanata Taub. ex Gilg = **E. sigmoidea**

latifolia Schumach. = **E. senegalensis**

melanacanthus Taub. ex Harms var. *somala* Chiov. = **E. melanacantha** subsp. **somala**

mendesii Torre = **E. baumii**

mossambicensis Sim = **E. abyssinica**

pelligera Fenzl = **E. abyssinica**

platyphylla Bak. f. = **E. abyssinica**

princeps A. Dietr. = **E. humeana**

problematica P. Duvign. & Rochez = **E. mildbraedii**

raja Meisn. = **E. humeana**

rosenii Pax = **Crotalaria**

rotundato-obovata Bak. f. = **Erythrina melanacantha** subsp. **melanacantha**

sandersonii Harv. = **E. latissima**

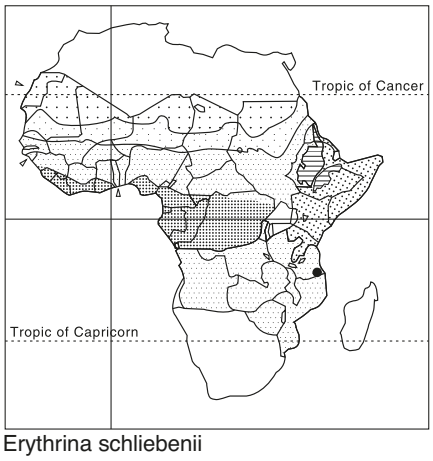
seretii De Wild. = **E. excelsa**

sigmoidea Pobég. = **E. sigmoidea** Hua

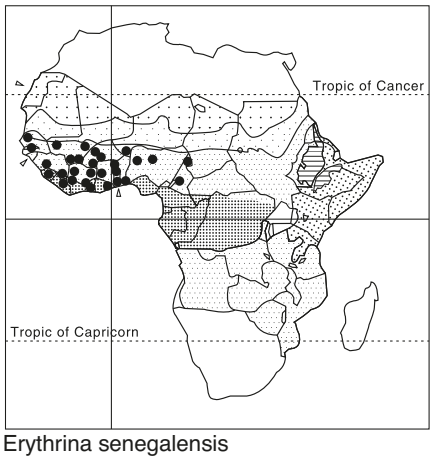
sp. 1 of F. White = **E. abyssinica**

suberifera Welw. ex Baker = **E. abyssinica**

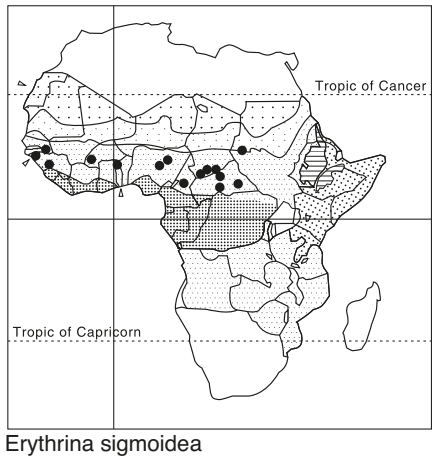
sudanica Bak. f. = **E. sigmoidea**



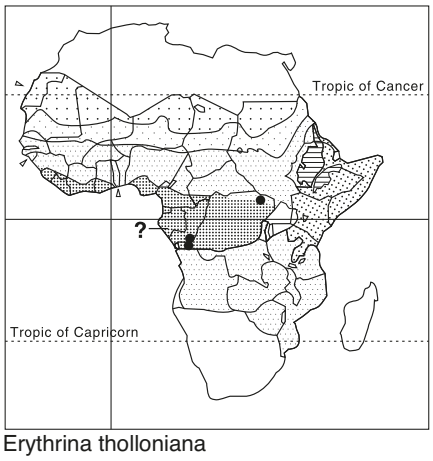
Erythrina schliebenii



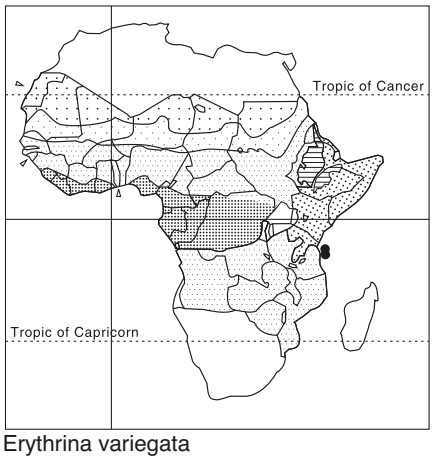
Erythrina senegalensis



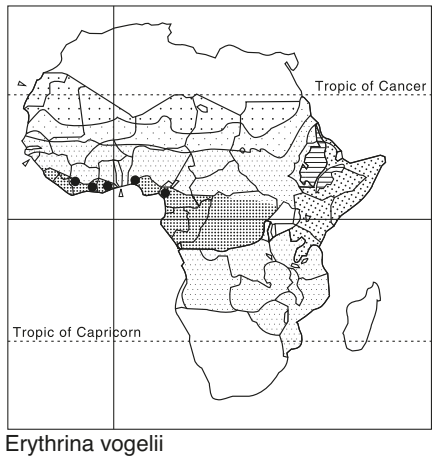
Erythrina sigmoidea



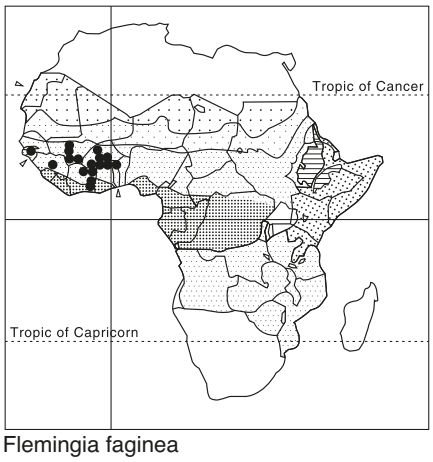
Erythrina tholloniana



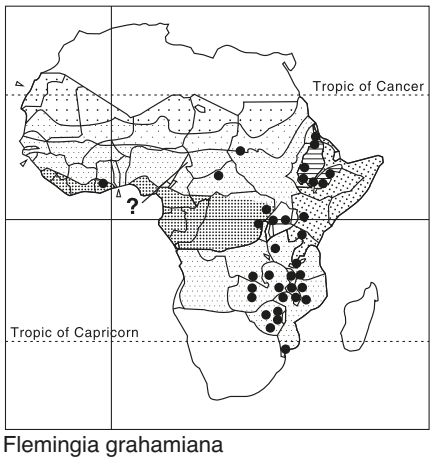
Erythrina variegata



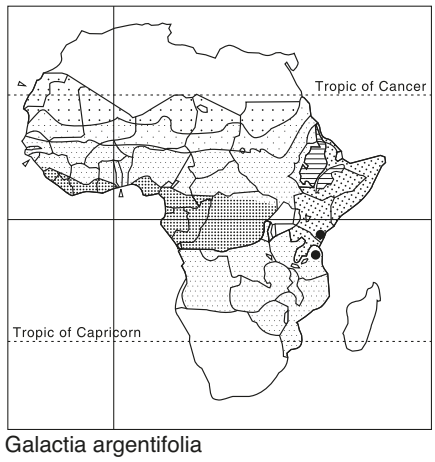
Erythrina vogelii



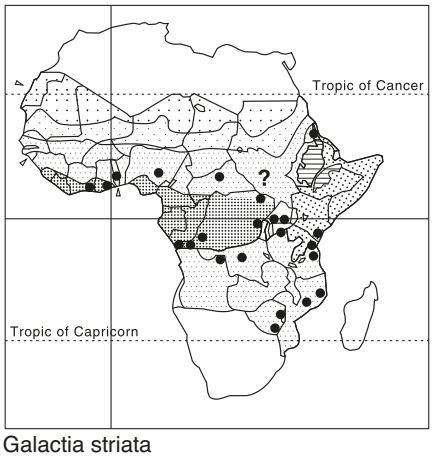
Flemingia faginea



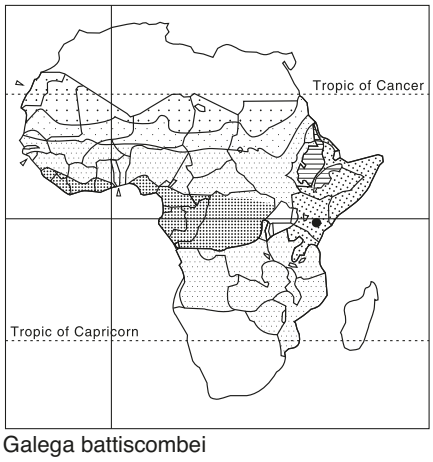
Flemingia grahamiana



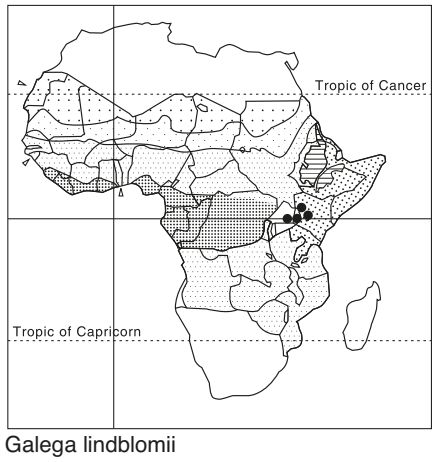
Galactia argentifolia



Galactia striata



Galega battiscombei



Galega lindblomii

ERYTHRINA

tomentosa R. Br. ex A. Rich. incl. var. *longicauda* Bak. f. = **E. abyssinica**

viarum Tod. = **E. caffra**

vignei Burtt Davy, nom. = **E. vogelii**

warneckei Bak. f. = **E. abyssinica**

webberi Bak. f. p.p. (inflor.) = **E. abyssinica**

webberi Bak. f. p.p. (fol.) = **E. sacleuxii**

FLEMINGIA / *2*

A predominantly Asiatic genus (30-50 species).

Flemingia faginea (Guill. & Perr.) Bak.

bas.: *Rhynchosia faginea* Guill. & Perr.

Erect shrub or bushy tree 0,7-3 m tall; branchlets chestnut-brown or rufous-tomentose.

River banks in savanna forest; edge of forest gallery; humid places in forests.

F. grahamiana Wight & Arn.

syn.: *F. rhodocarpa* Bak.; *Eriosema erythrocarpon* Beck; *Moghania rhodocarpa* (Bak.) Hauman, incl. var. *glabrescens* Hauman and var. *hockii* (De Wild.) Hauman; *Flemingia hockii* De Wild.; *Moghania hockii* (De Wild.) Hui Lin Li; *M. grahamiana* (Wight & Arn.) Kuntze

Herb or scarcely woody subshrub, erect or occasionally subscandent, 0,3-1,8 m tall; stems at first silky greyish or fulvous hairy, later glabrescent.

Grassland, grassland with scattered trees; *Brachystegia* woodland; sometimes near swamps and streams; common in places; rocky places; mushitu vegetation; lake shore margins; dambo; miombo; chipya woodlands; hillsides; termite mounds; disturbed ground at roadsides; 480-2100 m alt.

S. Africa, Swaziland; India.

A revision of the Asiatic species of *Flemingia* is needed; in India *F. grahamiana* is often close to *F. macrophylla* (Willd.) Kuntze ex Merr.

SYNONYMS :

Flemingia hockii De Wild. = **Flemingia grahamiana**

macrocalyx Bak. f. = **Rhynchosia clivorum** subsp. **pycnantha**

oblongifolia Baker = **Eriosema ellipticum** subsp. **ellipticum**

rhodocarpa Baker = **Flemingia grahamiana**

GALACTIA / *2*

A pantropical, but predominantly New World genus (50-80 species).

Galactia argentifolia S. Moore

Erect or sometimes rather straggling herb or subshrub 0,75-1,5 m tall; stems densely velvety with silvery or greyish hairs above, pubescent below; extreme tips sometimes showing climbing tendencies.

Grassland; grassland with scattered trees; 0-450 m alt.

It is perhaps a subspecies of **G. striata** (? hybrids, intermediate specimens).

G. striata (Jacq.) Urb.; Darwiniana 16 : 715 and tab. 16, 17, 1971; Fl. Zambes. 3(5) : 41, 2001 (fig. of var. **villosa)**.

bas.: *Glycine striata* Jacq.

Perennial climbing or trailing herb 0,6-3,6 m long from a woody rootstock; stems slender, finely pubescent to velvety.

Grassland; woodland; coastal bushland; sisal plantations; fallow land; 60-2000 m alt.

Comprises 4 vars. in the world : – var. **striata** (U.S.A., South America); – var. **crassirachis** Burkart (Argentina); – var. **tenuiflora** (Klein ex Willd.) Burkart [bas.: *Glycine tenuiflora* Klein ex Willd.; syn.: *Teramnus tenuiflorus* (Klein ex Willd.) Sprengel; *Galactia dubia* DC.; *G. obcordata* (Baill.) Verdc.; *G. kisantuensis* De Wild.; *G. tenuiflora* (Klein ex Willd.) Wight & Arn., incl. var. *biflora* Schweinf. (Asia, Madagascar, South America)]; – var. **villosa** (Wight & Arn.) Verdc. [bas.: *Galactia villosa* Wight & Arn.; syn.: *G. tenuiflora* var. *villosa* (Wight & Arn.) Benth. (Africa to New Guinea, etc)].

Extremely difficult species. Var. **tenuiflora** is perhaps identical with var. **villosa ;** the differences are only in the indumentum. The true identity of the northeastern Australian material is questionable.

Confused with *Ophrestia hedysaroides.*

SYNONYM :

Galactia lugardii N. E. Br. = **Neorautanenia brachypus**

GALEGA / *3*

Galega battiscombei (Bak. f.) J. B. Gillett

Closely related to *G. lindblomii* but : straggling, though with stouter stems with erect, gland-tipped hairs.

Damp places in rain-forest; at the edge of camphor forest; 1800-2200 m alt.

G. lindblomii (Harms) J. B. Gillett

Short-lived erect perennial or perhaps sometimes annual herb to 1,5 m tall, almost glabrous when mature but usually weakly and sparsely pilose when young.

Grassland; forest margins; bambo thickets; 2000-3000 m alt.

G. somalensis (Taub. ex Harms) J. B. Gillett

Woody herb; stem erect, ramose, slightly pilose with very rare medifixed hairs.

Grassland; near streams and in shady places; ± 1600 m alt.

GALEGA

SYNONYMS :

Galega apollinia (Delile) Hosni & El-Karemi = **Tephrosia purpurea** subsp.

colutea Burm. f. = **Indigofera**

linearis Willd. = **Tephrosia linearis**

lupinifolia Burch. = **T. lupinifolia**

maxima L. = **T. maxima**

pentaphylla Roxb. = **T. pentaphylla**

pumila Lam. = **T. pumila**

purpurea (L.) L. = **T. purpurea**

villosa (L.) L. = **T. villosa**

(GLYCINE)

SYNONYMS:

Glycine abyssinica Hochst. ex A. Rich. = **Teramnus labialis** subsp. **labialis** var. **abyssinica**

albidiflora De Wild. = **Neonotonia wightii** subsp. **wightii** var. **longicauda**

andongensis Welw. ex Baker = **Teramnus uncinatus** subsp. **ringoetii**

angulata Desv. = **T. uncinatus** subsp. **uncinatus**

axilliflora Kotschy = **T. uncinatus** subsp. **axilliflorus**

bequaertii De Wild. = **Pseudoeriosema andongense**

biflora Schumach. & Thonn. = **Macrotyloma biflorum** var. **biflorum**

borianii (Schweinf.) Baker = **Pseudoeriosema borianii** subsp. **borianii**

botrydium (Schott) Walp. = **Teramnus uncinatus** subsp. **uncinatus**

buettneri Harms = **Teramnus**

bujacia Benth. = **Neonotonia wightii** subsp. **wightii** var. **longicauda**

caribaea Jacq. = **Rhynchosia**

claessensii De Wild. = **Neonotonia wightii** subsp. **wightii** var. **longicauda**

cordifolia Harms = **Desmodium**

cyanea De Wild. = **Teramnus micans** var. **cyaneus**

debilis Ait. = **T. labialis** subsp. **labialis** var. **labialis**

densiflora Roth = **Rhynchosia**

dentata Schumach. & Thonn. = **Pseudovigna argentea**

digitata Harms = **Ophrestia**

discolor Mart. & Gal. = **Teramnus uncinatus** subsp. **uncinatus**

dolichoides Desv. = **T. labialis** subsp. **labialis** var. **labialis**

elliptica Mart. & Gal. = **T. uncinatus** subsp. **uncinatus**

gampsonychia (E. Mey.) Walp. = **T. labialis** subsp. **labialis** var. **labialis**

gilletii De Wild. = **T. uncinatus** subsp. **axilliflorus**

hedysaroides Willd. = **Ophrestia**

holophylla (Bak. f.) Taub. = **Pseudoeriosema andongense**

homblei De Wild. = **P. homblei**

GLYCINE

javanica L. var. *claessensii* (De Wild.) Hauman = **Neonotonia wightii** subsp. **wightii** var. **longicauda**

var. *longicauda* (Schweinf.) Baker = **Neonotonia wightii** subsp. **wightii** var. **longicauda**

var. *mearnsii* (De Wild.) Hauman = **N. wightii** subsp. **petitiana** var.

subsp. *micrantha* (Hochst. ex A. Rich.) F. J. Herm. = **N. wightii** subsp. **wightii** var. **longicauda**

var. *longicauda* (Schweinf.) F. J. Herm. = **N. wightii** subsp. **wightii** var.

var. *moniliformis* (A. Rich.) F. J. Herm. = **N. wightii** subsp. **wightii** var. **longicauda**

subsp. *pseudojavanica* (Taub.) Hauman = **N. wightii** subsp. **pseudojavanica**

javanica sensu E. G. Baker in Leg. Trop. Afr. = **N. wightii** subsp. **wightii** var. **longicauda**

javanica sensu Hauman in Fl. Congo Belge 6 = **N. wightii** subsp. **petitiana** var. **mearnsii**

javanica sensu Hepper in F.W.T.A., Ed. 2 = **N. wightii** subsp. **pseudojavanica**

javanica sensu J. G. Baker in F.T.A. 2 = **N. wightii** subsp. **wightii** var. **longicauda**

labialis L. f. = **Teramnus**

lanceolifoliolata De Wild. = **T. uncinatus** subsp. **ringoetii**

longicauda Schweinf. = **Neonotonia wightii** subsp. **wightii** var. **longicauda**

longipes Harms = **Pseudoeriosema**

malacophylla Spreng. = **Rhynchosia**

maranguensis Taub. = **Macrotyloma**

mearnsii De Wild. = **Neonotonia wightii** subsp.

meyeri Benth. = **Teramnus labialis** subsp. **labialis** var. **labialis**

micans Welw. ex Baker = **Teramnus micans** var. **micans**

micrantha Hochst. ex A. Rich. = **Neonotonia wightii** subsp. **wightii** var. **longicauda**

moeroense De Wild. = **Pseudoeriosema**

mollis Hook. = **Rhynchosia malacophylla**

mollis Willd. = **Cajanus scarabaeoides**

moniliformis Hochst. ex A. Rich. = **Neonotonia wightii** subsp. **wightii** var. **longicauda**

parviflora Lam. = **Teramnus labialis** subsp. **labialis** var. **labialis**

pentandra Spreng. 1802 = **T. labialis** subsp. **labialis** var. **labialis**

pentandra Spreng. 1826 = **Ophrestia hedysaroides**

petitiana (A. Rich.) Schweinf. = **Neonotonia wightii** subsp.

var. *dembianensis* Chiov. = **N. wightii** subsp. **petitiana** var. **petitiana**

pseudojavanica Taub. = **N. wightii** subsp.

radicosa (A. Rich.) Bak. f. = **Ophrestia**

repens Taub. = **Teramnus**

ringoetii De Wild. = **T. uncinatus** subsp.

rufa Schumach. = **Eriosema laurentii**

schimperi Hochst. & Steud., nom. = **Rhynchosia**

schliebenii Harms = **Ophrestia radicosa** var. **schliebenii**

var. *enneaneura* Hauman = **O. radicosa** var. **radicosa**

var. *rufescens* Hauman = **O. radicosa** var. **radicosa**

GLYCINE

senegalensis DC. = **Teramnus labialis** subsp. **labialis**

sp. A in F.T.E.A. Legum. 4(2) Papil.: 533 = **Neonotonia verdcourtii**

striata Jacq. = **Galactia striata** var. **striata**

sublobata Schumach. = **Rhynchosia**

subterranea L. = **Vigna**

tenuiflora Klein ex Willd. = **Galactia**

totta Thunb. = **Rhynchosia totta** var. **totta**

uncinata (L.) Macbride = **Teramnus uncinatus** subsp. **uncinatus**

unifoliolata Bak. f. = **Ophrestia**

upembae Hauman = **Ophrestia**

vanderystii De Wild. = **Eriosema**

viscosa Roth = **Rhynchosia**

wightii (Wight & Arn.) Verdc. = **Neonotonia wightii**

subsp. *petitiana* (A. Rich.) Verdc. = **N. wightii** subsp.

var. *mearnsii* (De Wild.) Verdc. = **N. wightii** subsp. **petitiana** var.

subsp. *pseudojavanica* (Taub.) Verdc. = **N. wightii** subsp.

subsp. *wightii* var. *longicauda* (Schweinf.) Verdc. = **N. wightii** subsp. **wightii** var. **longicauda**

HAPLORMOSIA / *1*

FARIDAH HANUM, I. (2001). A systematic study of the Ormosia group (Leguminosae: Papilionoideae). *In:* SAW, L. G. & al., Eds., *Taxonomy: The cornerstone of biodiversity. Proceedings of the fourth international Flora Malesiana Symposium 1998:* 107-121. Forest Research Institute Malaysia, Kuala Lumpur.

Haplormosia monophylla (Harms) Harms

bas.: *Crudia monophylla* Harms

syn.: *Ormosia monophylla* (Harms) Harms; *Haplormosia ledermannii* Harms

Shrub or tree 6-35 m tall with clear bole, irregular, bossed, soon branched 0,7-1,2 m Ø, sometimes buttressed; young shoots sparsely pubescent; branchlets purplish, glabrous, slightly angular and compressed; first branches drooping; crown compact with ascending branches; young foliage brilliant red.

Swampy forest; brooksides with *Rhizophora, Avicennia;* shrub formations; directly on the coast along creeks, rivers, lagoons; apparently always in fresh water; on sandy river banks it may be abundant.

HAYDONIA / *3*

In African floras usually treated under *Vigna.*

Haydonia juncea (Milne-Redh.) Maréchal (incl. *Vigna juncea* Milne-Redh. var. *major* Milne-Redh. and var. *corbyi* Pasquet).

Perennial climbing or trailing herb from a narrow horizontal or vertical woody rootstock 4-18 x 0,4-1,2 cm; flowering stems erect, leafless 15-50 cm tall; stems glabrous.

Brachystegia, Uapaca, Parinari woodland; miombo woodland; grassland subject to fire; grassy savanna on red-clayey soil; 900-1800 m alt.

HAYDONIA JUNCEA

Although agreeing with typical *Vigna* species in a number of ways this species is undoubtedly aberrant (Verdcourt); for inclusion in genus *Vigna* see Fl. Zambesiaca 3(5): 152, 2001.

H. monophylla (Taub.) R. Wilczek

syn.: *Vigna ostinii* Chiov.; *Dolichos gardneri* Bak. f.

Erect, climbing or trailing herb 14-60 cm tall, with slender often woody fusiform tuberous roots to 7 × 1,5 cm; stems angled, glabrous or with sparse hairs.

Grassland; grassland with scattered trees; *Brachystegia* woodland; often on waterlogged clay soils; 840-2400 m alt.

Botswana.

H. triphylla (R. Wilczek) Verdc.

Prostrate herb 0,6-1,8 m long; stems slender, glabrous, usually ± winged; seeds known!

Fallow land; miombo woodland; edge of riverine forest; disturbed places; damp meadows; along wooded thickets near lake; sometimes sporadic; peat; 1300-2000 m alt.

HEDYSARUM / *1*

CHOI, BYOUNG-Hee & H. OHASHI (2003). Generic criteria and an infrageneric system for Hedysarum and related genera (Papilionoideae-Leguminosae). *Taxon* 52: 567-576.

Hedysarum argyreum Greuter & Burdet; Sendtnera 8: 49, 2002; Charco, Guía de los árboles y arbustos del norte de África: 448, 2001.

Very ramose shrub 1-3(-5) m tall with appressed very dense, silvery pubescence; old branches with corky bark; bole woody becoming rather stout; young branches villose on the ribs.

Hamadas partially covered by barkhanes or sandy deposits; sebkhet krebs; 25-80 m alt.

Morocco.

Often much browsed and used for fire wood.

Resists covering by drifting sand, and is a potential dune fixer (sand binder).

SYNONYMS:

Hedysarum adscendens Sw. = **Desmodium**

aquaticum Bojer, nom. nud. = **Aeschynomene cristata** var. **cristata**

australe Willd. = **Desmodium umbellatum**

barbatum L. = **D. barbatum**

caespitosum Poir. = **D. adscendens**

cuneifolium Roth = **Taverniera cuneifolia**

deltoides Poir. = **Desmodium velutinum**

deltoideum Schumach. & Thonn. = **D. velutinum**

dichotomum Willd. = **D. dichotomum**

diffusum Willd. = **D. dichotomum**

diversifolium Poir. = **D. salicifolium**

ecastaphyllum L. = **Dalbergia**

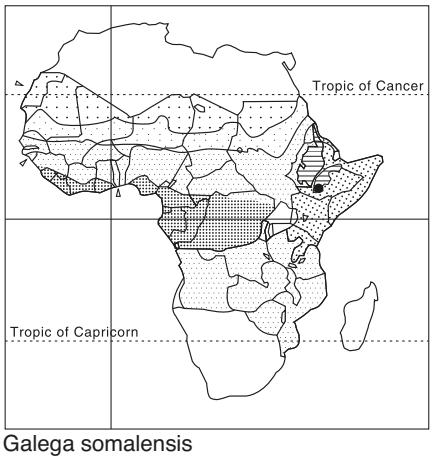
fruticulosum Desv. = ? **Desmodium ramosissimum**

fruticulosum Schumach. & Thonn. = ? **D. ramosissimum**

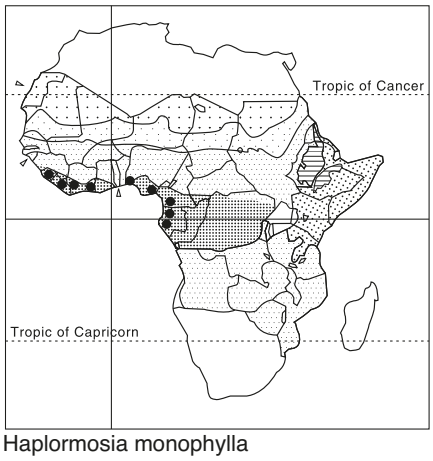
gangeticum L. = **Desmodium gangeticum**

gibsonii Graham = **Taverniera cuneifolia**

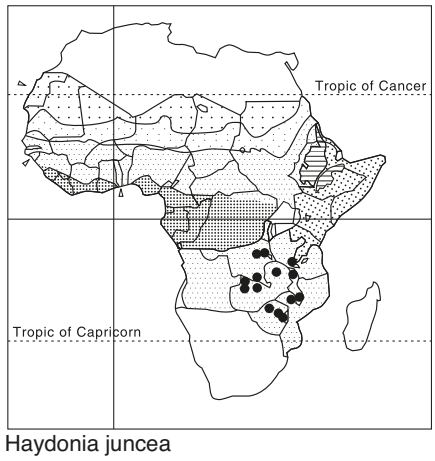
glumaceum Vahl = **Alysicarpus**



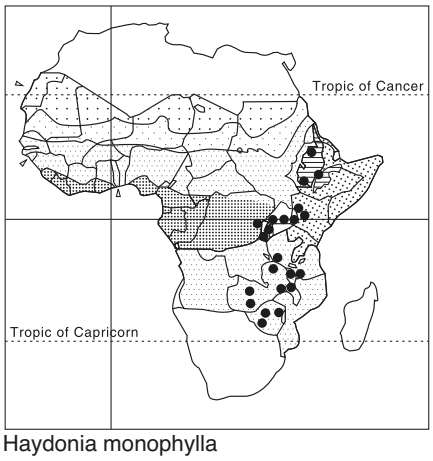
Galega somalensis



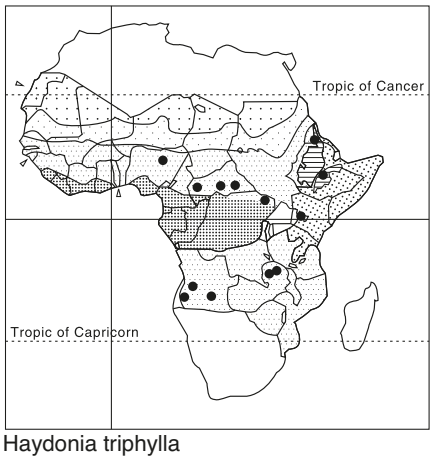
Haplormosia monophylla



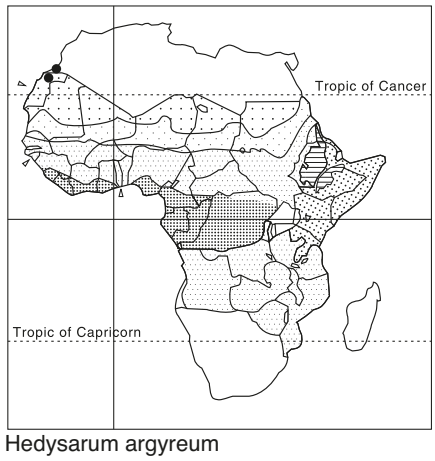
Haydonia juncea



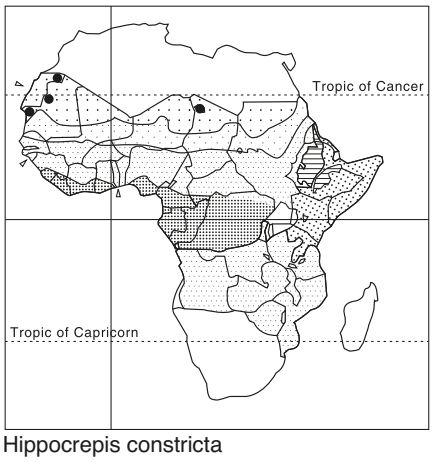
Haydonia monophylla



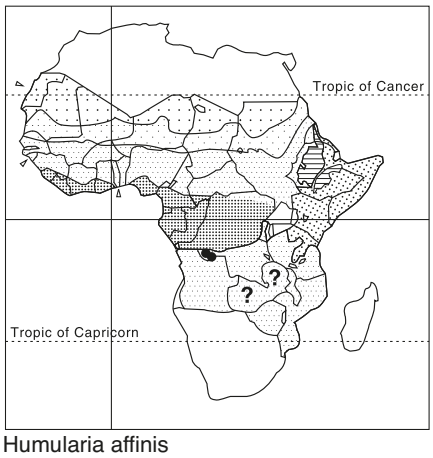
Haydonia triphylla



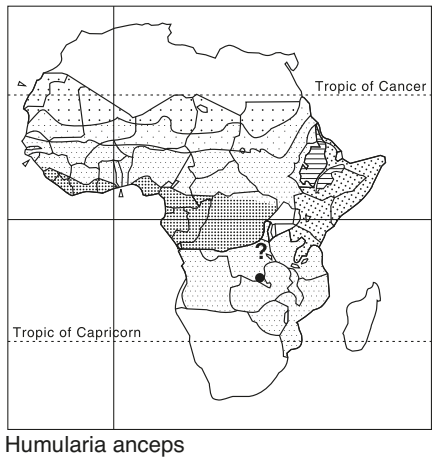
Hedysarum argyreum



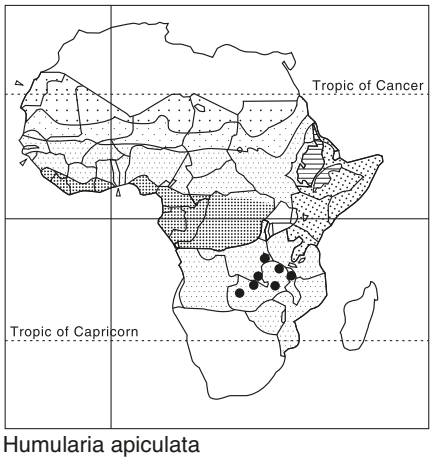
Hippocrepis constricta



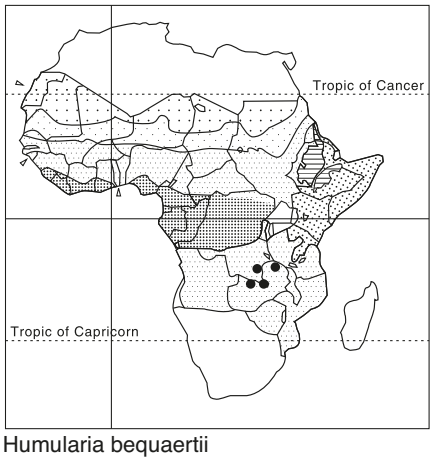
Humularia affinis



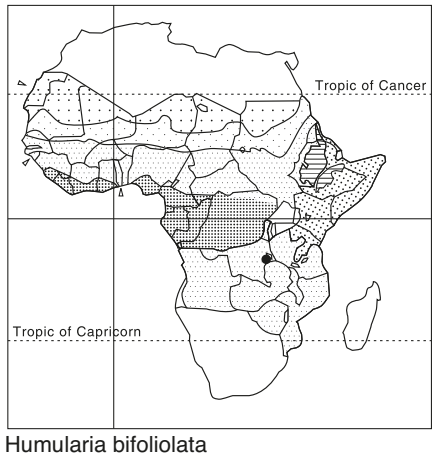
Humularia anceps



Humularia apiculata



Humularia bequaertii



Humularia bifoliolata

HEDYSARUM

granulatum Schumach. & Thonn. = **Desmodium triflorum**

heterocarpon L. = **D. heterocarpon**

incanum Sw. = **D. heterocarpon**

intortum Mill. = **D. intortum**

lanceolatum Schumach. & Thonn. = **D. gangeticum**

lappaceum Forssk. = **Taverniera**

lasiocarpum P. Beauv. = **Demodium velutinum**

latifolium Roxb. & Ker-Gawl. = **D. velutinum** subsp. **velutinum**

linifolium L. f. = **Indigofera**

lutescens L. f. = **Pycnospora**

maculatum L. = **Desmodium gangeticum**

madagascariense Desv. = **D. incanum**

var. *lanceolatum* Desv. = **D. salicifolium**

micranthum Poir. (“micranthos”) = **Aeschynomene brevifolia**

nummulariifolium L. = **Indigofera**

ovalifolium Schumach. = **Alysicarpus**

pictum Jacq. = **Uraria**

polycarpon Poir. = **Desmodium heterocarpon**

purpureum Mill. = **D. tortuosum**

repandum Vahl = **D. repandum**

rugosum Willd. = **Alysicarpus**

salicifolium Poir. = **Desmodium salicifolium**

scorpiurus Sw. = **D. scorpiurus**

sennoides Willd. = **Ormocarpum**

styracifolium sensu Poir., non L. = **Desmodium gangeticum**

tetraphyllum Thunb. = **Zornia capensis** subsp. **capensis**

tortuosum (Sw.) DC. = **Desmodium tortuosum**

triflorum L. = **D. triflorum**

umbellatum L. = **D. umbellatum**

uncinatum Jacq. = **D. uncinatum**

vaginale L. = **Alysicarpus**

velutinum Willd. = **Desmodium velutinum**

violaceum Forssk., non L. = **Alysicarpus glumaceus** subsp. **glumaceus** var. **glumaceus**

HIPPOCREPIS / *1*

Hippocrepis constricta G. Kunze – Icon.: L. Boulos, Fl. Egypt 1: 304, 1999.

syn.: *H. multisiliquosa* L. subsp. *constricta* (G. Kunze) Maire and subsp. *eilatensis* Zohary

Annual herb 10-35 cm long, glabrous ; stems angular, erect to procumbent, branched from the base and above.

Hollow in the reg ; sandy-muddy soil.

Madeira ; Canary Isl.; Mediterranean Region, Egypt, Palestine, Arabia, Iran, Pakistan.

Comprises 2 vars.

HUMULARIA / *32*

A genus confined to Africa ; formerly included in *Geissaspis* Wight & Arn., an Asiatic genus.

Many African species are insufficiently known : stipules not known for 1 species (= 3 %, *H. multifoliolata)*, and no flower seen for 1 species and 1 variety (= 3 + 3 %) and no fully developed flower for 1 species (= 3 %) ; pods unknown for 8 + 1? species + 1 variety (= 28 %), and seeds unknown for 5 + 1? species (= 15 %), and no ripe seeds known for another species (= 3 % ; together = 18 %) ; the ecology not recorded for 9 species (= 28 %) ; 11 species and the 2 varieties of another species are known only from the type (= 37 %).

Humularia affinis (De Wild.) P. A. Duvign.

Shrub to 1,5 m tall and more ; stems erect, woody, blackish, ± compressed, very stout, with short and scattered pubescence of very short and very soft hairs (but pilosity very variable, sometimes with tubercular-based hairs).

Open forests ; savannas.

Some specimens are certainly hybrids (**H. affinis** x **H. kassneri, H. affinis** x **H. lundaensis)**.

Introgressions possible.

H. anceps P. A. Duvign.

Subshrub 15-30 cm tall, dark-green becoming brown when dry ; stems erect, ± compressed, rather slender, slightly woody, glabrous or nearly so ; pod and seeds unknown.

Ecology unknown.

Near **H. apiculata.**

H. apiculata (De Wild.) P. A. Duvign.

Erect subshrub 0,3-2 m tall ; stems usually many from a woody base, branched, glabrous or scabrid with tubercular-based hairs.

Brachystegia woodland ; grassland ; 900-2100 m alt.

H. bequaertii (De Wild.) P. A. Duvign.

Subshrub 0,6-1,5 m tall ; stems erect, mostly much-branched, often flattened, purplish-brown, glabrous to very glandular with tubercular-based hairs, or glandular-setulose particularly on younger stems.

Brachystegia woodland ; *Brachystegia, Protea, Julbernardia, Uapaca* woodland ; grassy bushland ; swampland ; 1050-1660 m alt.

Comprises 2 vars.: – var. **bequaertii ;** – var. **purpureocoerulea** (P. A. Duvign.) Verdc.

H. bifoliolata (Micheli) P. A. Duvign. – Icon.: Bull. Soc. Roy. Bot. Belg. 36 : tab. 3, 1897.

Subshrub ± 50 cm tall with erect subcylindrical, rather stout, woody, brownish stems, rather densely hirsute with tubercular-based hairs, scaberulous ; pod and seeds unknown.

Ecology unknown.

Only known from the type collected ante 1898.

H. callensii P. A. Duvign.

Subshrub ± 50 cm tall ; stems erect, ± compressed, rather slender, brown-black, densely setulose with tubercular-based hairs.

Ecology unknown.

Only known from the type.

H. chevalieri (De Wild.) P. A. Duvign.

Erect, woody shrub to 2 m tall; stems glabrous, ramose; branches with brownish bark ± scaling off with age, ± erect, ± ramose.

Stream sides, near falls.

The only *Humularia* with bidentate bracts (sect. *Bidentatae* P. A. Duvign.).

H. ciliato-denticulata (De Wild.) P. A. Duvign.

Subshrub ±40 cm tall, glandular, becoming brownish when dry; stems erect, cylindrical, rather stout, woody, brown, densely scabrid with tubercular-based hairs; pod and seeds unknown.

Wooded savanna on moist soils.

Has been confused with **H. submarginalis.**

H. corbisieri (De Wild.) P. A. Duvign.

syn.: *Geissaspis kapandensis* De Wild.

Subshrub 10-25 cm tall, very pale green; stems numerous, erect, subcylindrical, very slender, subherbaceous, whitish or straw-yellow, slightly ramose, glabrous or nearly so from slender woody rhizomes.

Ecology unknown.

H. descampsii (De Wild. & Th. Durand) P. A. Duvign.

bas.: *Geissaspis descampsii* De Wild. & Th. Durand

Subshrub 0,4-1,5 m tall; stems erect, cylindrical, rather stout, woody, yellow-greyish or brown, slightly scabrid with tubercular-based hairs.

Brachystegia woodland; grassland with scattered trees; sometimes in rocky places or on termite mounds; grassy savannas; often on sandy soils; 480-1800 m alt.

Comprises 3 vars.: – var. **descampsii** with fa. **descampsii** and fa. **pilosa** P. A. Duvign.: – var. **abercornensis** P. A. Duvign. (syn.: *H. descampsii* var. *nyassica* P. A. Duvign. and ? var. *acuta* P. A. Duvign.); – var. **kundelunguensis** P. A. Duvign.

H. drepanocephala (Bak.) P. A. Duvign.

bas.: *Geissaspis drepanocephala* Bak.

syn.: *Geissaspis ringoetii* De Wild. (non *Smithia ringoetii* De Wild.).

Erect herb or subshrub 20-40 cm tall; stems tufted, woody, ± densely pubescent with hairs which are not or scarcely bulbous-based, but glabrescent towards the base; rootstock massive, woody.

Grassland; scattered *Protea* grassland; *Brachystegia, Uapaca* woodland; open *Brachystegia* woodland often in very stony places subject to regular fires; grassland at forest edges; 930-2400 m alt.

Comprises 4 vars.: – var. **homblei** (De Wild.) P. A. Duvign. with 2 forms.

H. duvigneaudii Symoens – Icon.: Publ. Univ. Elisabethv. 1: 193, 195, 1961 (Contr. Fl. Katanga 1).

Subshrub 45-80 cm tall; branches erect, cylindrical, densely pubescent, but glabrescent near the base; fruit and seeds unknown.

Open forest with *Marquesia, Monotes, Uapaca;* wooded steppe with *Monotes, Parinari, Uapaca;* dambo on sandy soil with humus; 1380-±1600 m alt.

Near **H. elisabethvilleana, H. drepanocephala, H. luentensis;** the specimen Desenfans 3294 sub *H.* cf. *drepanocephala* from Kiongwe is a true **H. duvigneaudii.**

H. elegantula P. A. Duvign.

Subshrub 30-40 cm tall; branches erect, slender, subcompressed, yellowish or brownish, glabrous.

Grassy steppe on sand; very abundant.

Only known from the type.

Very near **H. mendoncae.**

H. elisabethvilleana (De Wild.) P. A. Duvign.

Erect subshrub 1-2 m tall; stems glabrous or with very few scattered tubercular-based hairs; seeds unknown.

By a brook; open forest; savanna with *Loudetia arundinacea; Brachystegia* woodland; 840-1500 m alt.

H. kapiriensis (De Wild.) P. A. Duvign.

bas.: *Geissaspis welwitschii* (Taub.) Bak. var. *kapiriensis* De Wild.

Subshrub 0,6-2,1 m tall with erect or prostrate stems, ramose or subsimple, flattened, rather stout, ± woody, light brown or straw-yellow, glabrous, or densely covered with stiff tubercular-based short hairs.

Open forest; "steppes" on sandy plateau; dry sandy plateau grassland; evergreen vegetation; swampy grassland; sometimes very abundant; 1500 m alt.

Comprises 3 vars.

H. kassneri (De Wild.) P. A. Duvign.

Subshrub 80-90 cm tall, brownish when dry, very glandular; stems erect, cylindrical, stout, woody, very hirsute with bulbous-based hairs.

Rather humid soils in open forests, near brook; grassy savanna with *Protea;* swamp edges in *Brachystegia* woodland; 1200 m alt.

Extremely variable; comprises 4 vars.

H. katangensis (De Wild.) P. A. Duvign., *excl.* var. *glabrescens* P. A. Duvign. (= **H. apiculata)**.

Subshrub with ± straggling stems, flexuous, to 60 cm long, reddish, hirsute with bulbous-based hairs, scabrid.

Open forests.

Not in Zambia (= **H. apiculata)**.

H. ledermannii (De Wild.) P. A. Duvign.

Subshrub, ± woody at least at the base, 0,8-1,2 m tall; branches erect, ± zigzag, glabrous when full-grown, scabrous when young, longitudinally striate; fruit unknown?

Wooded savanna; 1200-1400 m alt.

Very variable.

Type (Ledermann 5460, 6.10.1909) probably destroyed; photograph probably existing.

H. magnistipulata Torre

Rhizomatous subshrub, glabrous, ± 1,5 m tall, ramose near the apex; bark longitudinally striate; stipules 2-5,5 × 1,4-5 cm.

Ecology unknown; 1200 m alt.

Only known from the type collected in 1937.

H. mendoncae (Bak. f.) P. A. Duvign.

bas.: *Geissaspis mendoncae* Bak. f.

Subshrub 15-30 cm tall, white-pruinose with erect, slender, compressed, yellowish-brown, glabrous stems.

"Nas chanas" (plain, open country).

HUMULARIA MENDONCAE

Comprises 2 vars.; the fruit of var. **mendoncae** is unknown; the flower of var. **integribracteata** P. A. Duvign. is unknown; each variety is only known from the type.

H. meyeri-johannis (Harms & De Wild.) P. A. Duvign.

Subshrub with erect stems, cylindrical, rather stout, woody, brown, shortly hirsute with bulbous-based hairs, scabrous; corolla and ovary unknown.

Ecology unknown.

Confused with **H. apiculata.**

Type probably destroyed, and only known from a photograph.

H. minima (Hutch.) P. A. Duvign.

Woody subshrub 0,3-0,5 m tall with several diverging branched stems from a woody rootstock; young stems with a few very short stout bristles but otherwise glabrous or rather densely covered with very short tubercular-based hairs, purplish and usually with a whitish bloom.

Brachystegia bushland; open woodland; grassland; open ground on sandy soil; *Brachystegia* woodland on Kalahari sand; 1442-1800 m alt.

Comprises 2 subspp.

H. multifoliolata Verdc.

Erect willowy shrub *presumably* several m in height; stems red, sticky and rough with extremely dense aromatic tubercular-based hairs; stipules soon falling, thus unknown.

Open *Uapaca, Parinari, Protea* woodland; 1590 m alt.

Only known from the type collected in 1959.

H. pseudaeschynomene Verdc.

Rhizomatous suffrutex with creeping stems 15-40 cm long which are burnt back every year, glabrous or densely covered with rather short tubercular-based glandular hairs; fruit unknown.

Watershed grassland on Kalahari sand, Congo-Zambesi divide; 1200-1500 m alt.

Only known from the type collected in 1952.

H. renieri (De Wild.) P. A. Duvign.

Shrub to 1,25 m tall, very glandular with erect, fasciculate stems, very slightly compressed at the extremity, very stout, woody, brown, hirsute with bulbous-based hairs, sparsely verrucose when full-grown.

"Steppe" on sand.

H. rosea (De Wild.) P. A. Duvign.

bas.: *Geissaspis rosea* De Wild.

syn.: *Geissaspis rosea* var. *divergentiloba* De Wild.; *G. incognita* De Wild., incl. var. *latifoliolata* De Wild.; *G. subscabra* De Wild.; *G. robynsii* De Wild. – All of var. **rosea.**

Subshrub with straggling stems, more than 1 m long, rather slender, purplish-brown, reddish or greyish, hirsute with bulbous-based hairs, scaberulous.

Brachystegia woodland/dambo edges; rocky places on red sandy soil; deciduous woodland; 1350-1800 m alt.

Comprises 2 vars.: – var. **rosea** (syn.: *H. rosea* var. *denticulata* P. A. Duvign.); – var. **reptans** (Verdc.) Verdc.

HUMULARIA

H. submarginalis Verdc.

Subshrub 45-90 cm tall; stems at first scabrid with short tubercular-based hairs which wear off on older stems; ripe seeds unknown.

Wooded grassland; *Marquesia-Brachystegia* woodland; 1300 m alt.

Confused with **H. ciliato-denticulata.**

H. sudanica P. A. Duvign.

Shrub with stout brownish branches, hirsute with bulbous-based hairs.

Ecology unknown (near river).

Near **H. ledermannii.**

Only known from the type.

H. tenuis P. A. Duvign.

Subshrub ± 70 cm tall; stems erect, cylindrical, divaricately ramose, slender, slightly woody, pale-brown when dry, very sparsely hairy with bulbous-based hairs; fruit and fully developed flowers unknown.

Ecology unknown.

Only known from the type.

H. upembae P. A. Duvign.

Subshrub ± 70 cm tall; stems erect, cylindrical, slender, woody, yellowish, nearly glabrous; fruit unknown.

Savanna.

Only known from the type.

H. welwitschii (Taub.) P. A. Duvign.

syn.: *Damapana welwitschii* (Taub.) Hiern

Erect shrub or subshrub 0,15-1 m tall; stems mostly robust and woody, branched, subcylindrical, glabrous, pubescent or densely scabrous with tubercular-based hairs, viscid-glandular.

Rocky thickets (abundant but found in only one spot); floodplains; semi-dambo grassland; woodland on Kalahari sand; *Cryptosepalum* woodland on sand; *Monotes* scrubland; grassy plains; edaphic grassland; sandy savanna; 1050-1600 m alt.

Comprises 3 vars.: – var. **welwitschii;** – var. **gossweileri** (Bak. f.) P. A. Duvign.: – var. **lundaensis** (P. A. Duvign.) Verdc. [syn.: *Geissaspis castroi* Bak. f.; *G. megalophylla* (Harms) Bak. f.].

H. wittei P. A. Duvign.

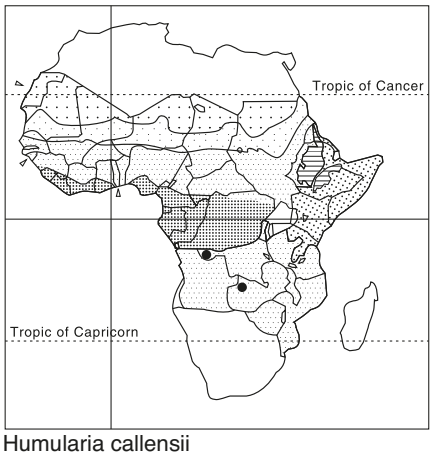
Subshrub 20-30 cm tall; stems erect, cylindrical, rather slender, slightly woody, brown or black, hairy with bulbous-based hairs; fruit unknown.

Ecology unknown.

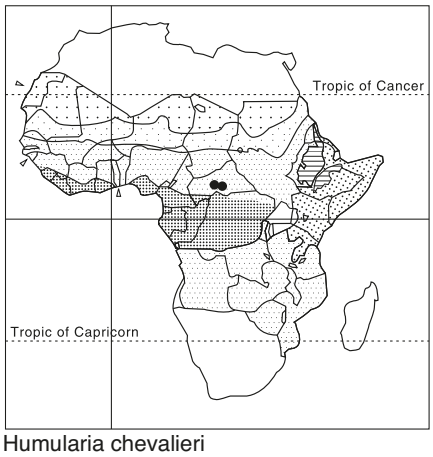
Only known from the type.

SYNONYMS :

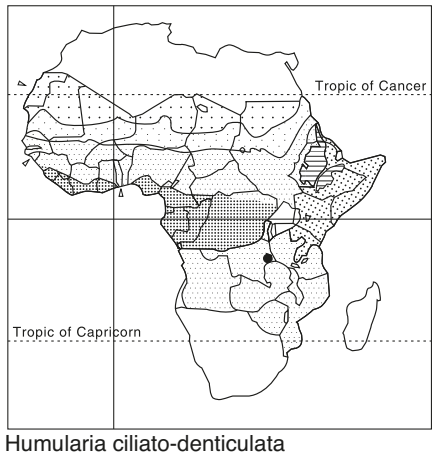
Geissaspis affinis = **Humularia affinis**
apiculata De Wild. = **H. apiculata**
bakeriana De Wild. = **H. apiculata**
bequaertii De Wild. = **H. bequaertii**
bifoliolata Micheli = **H. bifoliolata**
castroi Bak. f. = **H. welwitschii** var. **lundaensis**
chevalieri De Wild. = **H. chevalieri**



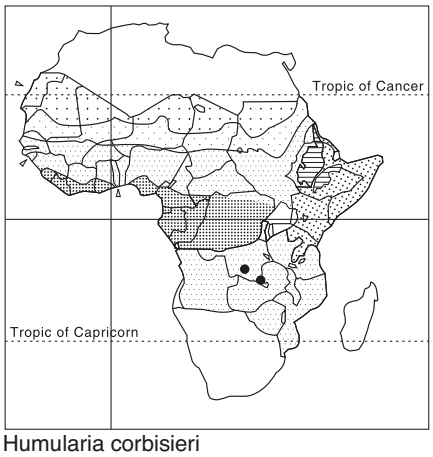
Humularia callensii



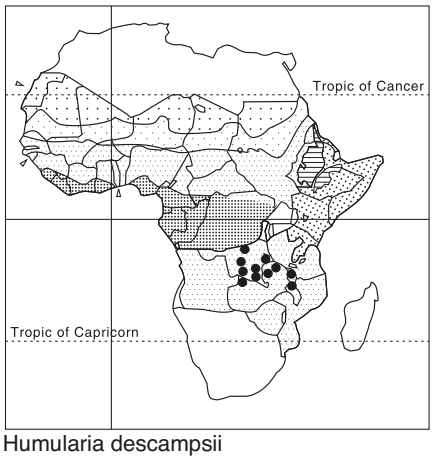
Humularia chevalieri



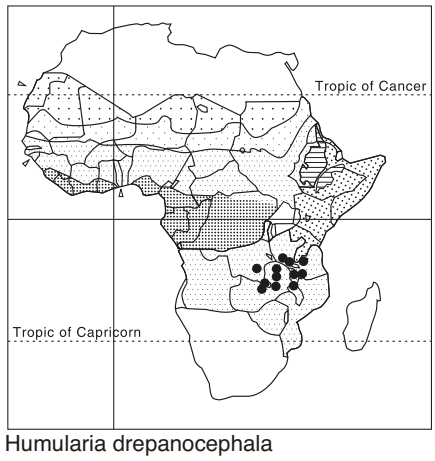
Humularia ciliato-denticulata



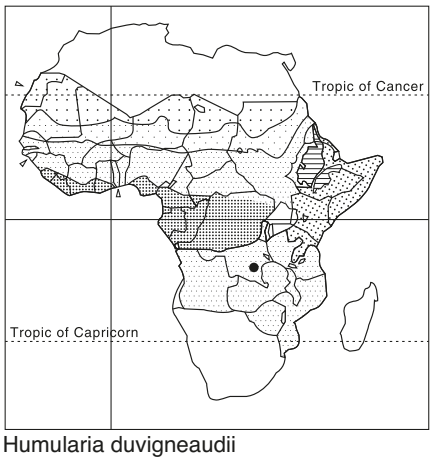
Humularia corbisieri



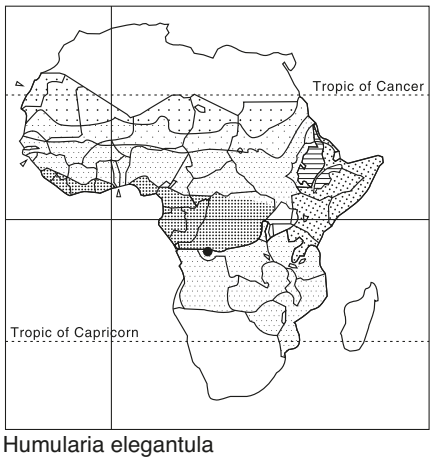
Humularia descampsii



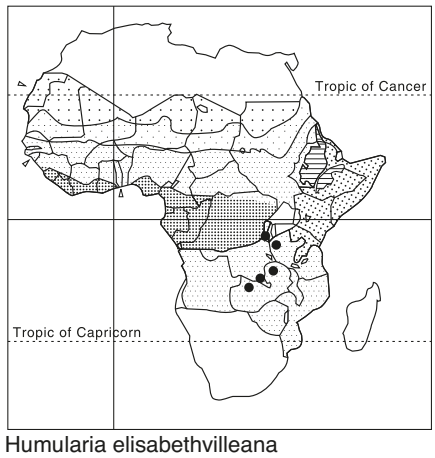
Humularia drepanocephala



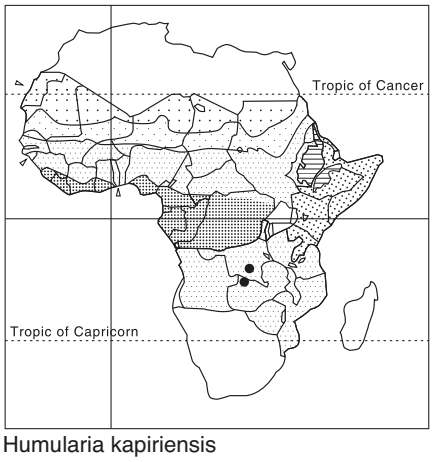
Humularia duvigneaudii



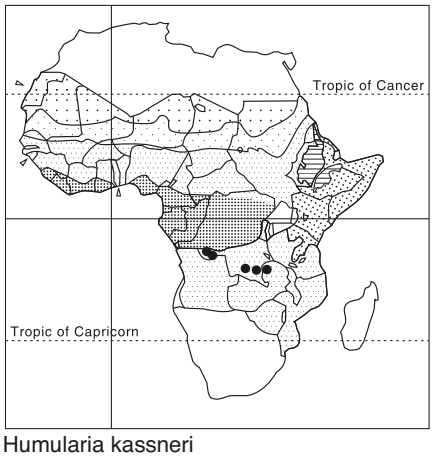
Humularia elegantula



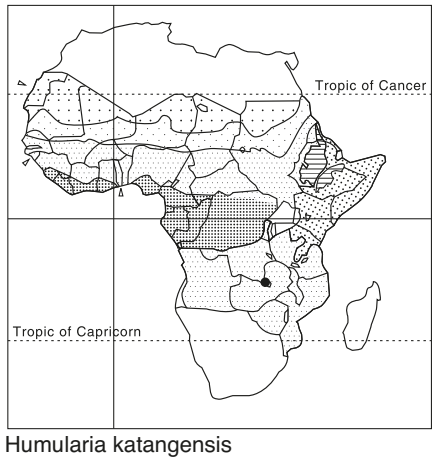
Humularia elisabethvilleana



Humularia kapiriensis



Humularia kassneri



Humularia katangensis

(HUMULARIA) GEISSASPIS

chiruiensis R. E. Fr. = **Aeschynomene rubrofarinacea**
ciliato-denticulata De Wild. = **H. ciliato-denticulata**
clevei De Wild. = **Aeschynomene rubrofarinacea**
corbisieri De Wild. = **Humularia corbisieri**
descampsii De Wild. & Th. Durand = **H. descampsii**
drepanocephala Baker = **H. drepanocephala**
elisabethvilleana De Wild. = **H. elisabethvilleana**
emarginata Harms = **H. drepanocephala** var.
gossweileri Bak. f. = **H. welwitschii** var.
homblei De Wild. = **H. drepanocephala** var.
incognita De Wild. incl. var. *latifoliolata* De Wild. = **H. rosea**
kapandensis De Wild. = **H. corbisieri**
kassneri De Wild. = **H. kassneri**
katangensis De Wild. = **H. katangensis**
ledermannii De Wild. = **H. ledermannii**
luentensis De Wild. = **H. apiculata**
maclouniei De Wild. = **Aeschynomene rubrofarinacea**
megalophylla (Harms) Bak. f. = **Humularia welwitschii** var. **lundaensis**
mendoncae Bak. f. = **H. mendoncae**
meyeri-johannis Harms & De Wild. = **H. meyeri-johannis**
minima Hutch. = **H. minima**
renieri De Wild. = **H. renieri**
ringoetii De Wild. = **H. drepanocephala**
robynsii De Wild. = **H. rosea** var. **rosea**
rosea De Wild. = **H. rosea**
var. *divergentiloba* De Wild. = **H. rosea**
rubrofarinacea (Taub.) Bak. f. = **Aeschynomene rubrofarinacea**
scott-elliotii De Wild. = **A. rubrofarinacea**
subscabra De Wild. = **Humularia rosea** var. **rosea**
vanderystii De Wild. = **H. kassneri** var.
welwitschii (Taub.) Bak. f. = **H. welwitschii**
var. *kapiriensis* De Wild. = **H. kapiriensis**
Humularia bakeriana (De Wild.) P. A. Duvign. = **Humularia apiculata**
bianoensis P. A. Duvign. = **Aeschynomene pararubrofarinacea**
descampsii (De Wild. & T. Durand.) P. A. Duvign. var. *acuta* P. A. Duvign. = **Humularia descampsii** ? var. **abercornensis**
var. *nyassica* P. A. Duvign. = **H. descampsii** var. **abercornensis**
cf. *drepanocephala* (Baker) P. A. Duvign. = **H. duvigneaudii**
flabelliformis P. A. Duvign. = **H. minima** subsp.
katangensis (De Wild.) P. A. Duvign. var. *glabrescens* P. A. Duvign. = **H. apiculata**
luentensis (De Wild.) P. A. Duvign. = **H. apiculata**
lundaensis P. A. Duvign. = **H. welwitschii** var.
maclouniei (De Wild.) P. A. Duvign. = **Aeschynomene rubrofarinacea**
megalophylla (Harms) P. A. Duvign. = **Humularia welwitschii** var. **lundaensis**
purpureocoerulea P. A. Duvign., incl.? var. *gigantea* P. A. Duvign. = **H. bequaertii** var. **purpureocoerulea**
reptans Verdc. = **H. rosea** var.
rosea (De Wild.) P. A. Duvign. var. *denticulata* P. A. Duvign. = **H. rosea** var. **rosea**
rubrofarinacea (Taub.) P. A. Duvign. = **Aeschynomene**

(INDIGASTRUM)

Species cited under **Indigofera ;** list of synonyms given at the end of this genus, p. 114.

INDIGOFERA / *288*

One of the largest genera in *Fabaceae* with about 700 species widespread in warm and dry parts of the world, but not reported from the Mediterranean region. Its major diversity is primarily in tropical Africa.

Many species yield a blue dye, the most important being *I. arrecta* and *I. tinctoria.*

* * *

An odd leaf structure is seen in *I. brevicalyx, I. ogadensis, I. pellucida, I. scopiformis* (blisters or glandular mucrones on leaflets and tips of calyx-lobes) ; viscid leaflet margins in *I. elwakensis, I. tanganyikensis ;* tubercles in *I. phymatodea.* – The very spectacular *I. peltata* is the only Leguminosae with peltate leaves. – Vegetative reproduction by root-suckers is only reported for *I. thikaensis* (not previously reported in the genus).

I. platyspira has pods much resembling the fruits of *I. rautanenii* Bak. f. (Namibia) or *Medicago orbicularis.*

I. scopiformis, I. ogadensis, I. pellucida consitute a very natural group of closely related species with vicarious distributions in the Horn of Africa. – A few species present a disjunct distribution : *I. disjuncta* (= *Microcharis)*, *I. oblongifolia, I. trigonelloides. I. atriceps* reaches the highest altitude : 3200 m.

* * *

Twenty-one (+ 1?) species are known only from the type (= >7%). No ecology is recorded for 14 species (= <5%), and for further 7 species (= >2%) the ecology is uncertain. No fruit has been seen in 10 species (= 3,5%), and no *ripe* fruit in further 7 species (= >2%). Seeds are unknown in 2 species (= <1%).

The corolla is unknown for *I. sebyngweensis,* no petals have been seen in *I. cuitoensis,* and the flower is known only in bud (stamens seen on fruit) in *I. curvirostrata*.

* * *

BALFOUR-PAUL, J. (1997). *Indigo in the Arab world.* Curzon Press, Richmond/Surrey. XX + 283 pp. *[Indigofera* spp., *Lonchocarpus cyanescens].*

CORTÉS-BURNS, H. & al. (2004). A taxonomic revision of Socotran Indigofereae (Leguminosae-Papilionoideae) with insights into the phytogeographical links of the Socotran Archipelago. *Nord. J. Bot.* 22 : 693-711.

SCHRIRE, B. D. & J. R. SIMS (1997). A re-evaluation of pollen morphology and taxonomy in the tribe Indigofereae (Leguminosae-Papilionoideae). *Kew Bull.* 52 : 841-878 *[Indigofera, Cyamopsis, Microcharis, Rhynchotropis].*

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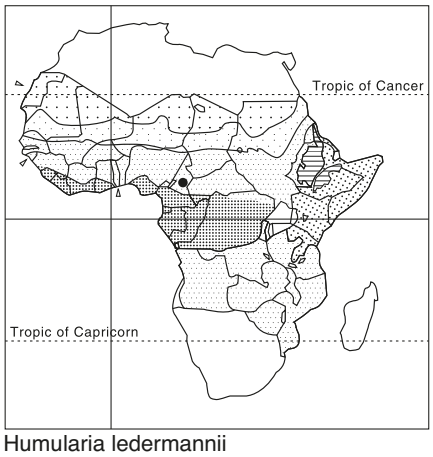
SEEFELDER, M. (1994). *Indigo : Kultur, Wissenschaft und Technik.* Ed. 2. Ecomed, Landsberg. 101 pp.

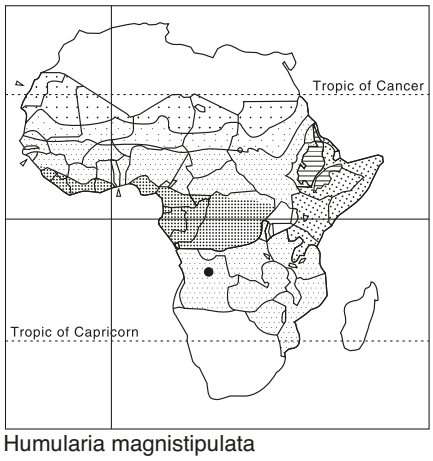
SEEFELDER, M. (1994). *Indigo in culture, science and technology.* 2nd rev. ed. Ecomed, Landsberg. 101 pp.

TISSERANT, C. (1931). Révision des Indigofera Ouest-Africains de l'herbier du Muséum. *Bull. Mus. Nat. Hist. Nat., Sér. 2,* 3 : 258-272.

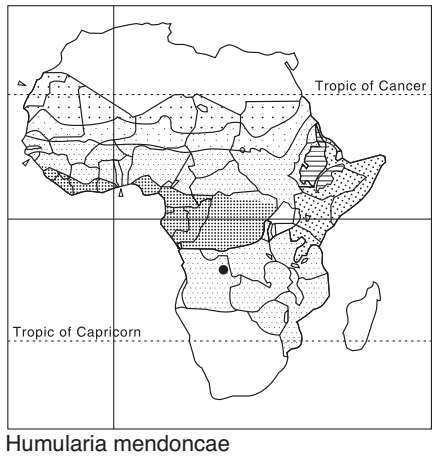
[WILSON, P. G. & R. ROWE (2004). A revision of the Indigofereae (Fabaceae) in Australia. 1. Indigastrum and the simple or unifoliolate species of Indigofera. *Telopea* 10 : 651-682.]



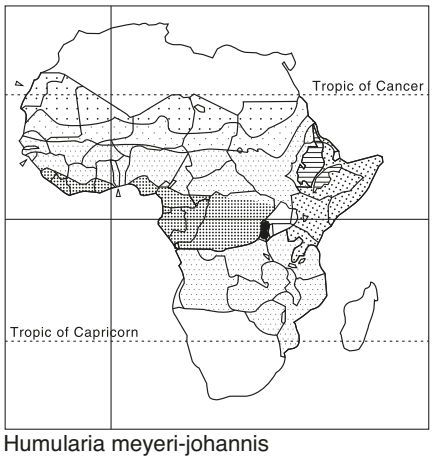
Humularia ledermannii



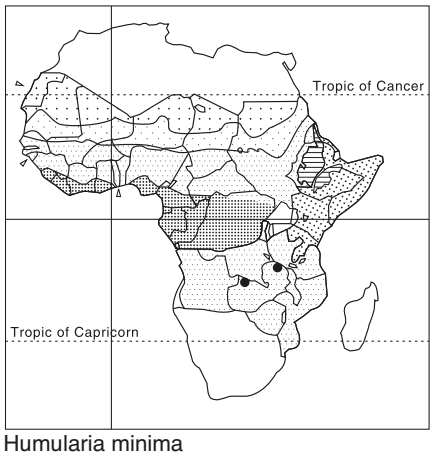
Humularia magnistipulata



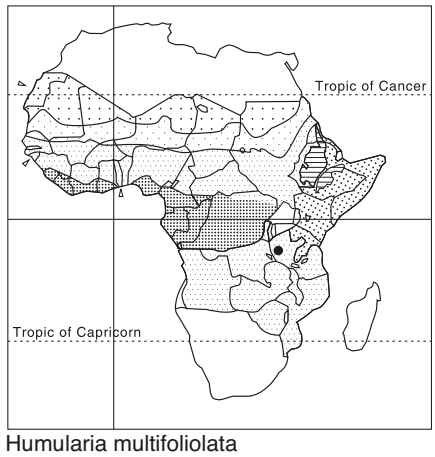
Humularia mendoncae



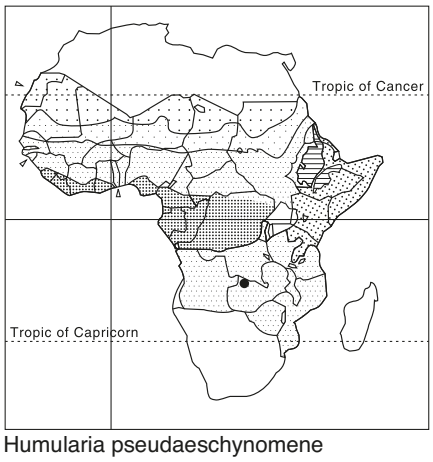
Humularia meyeri-johannis



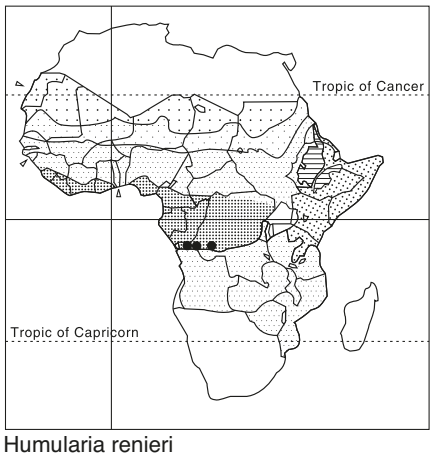
Humularia minima



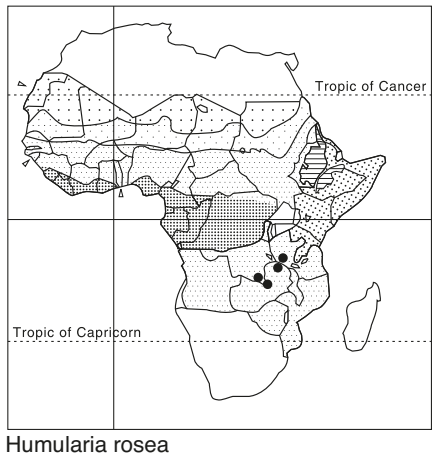
Humularia multifoliolata



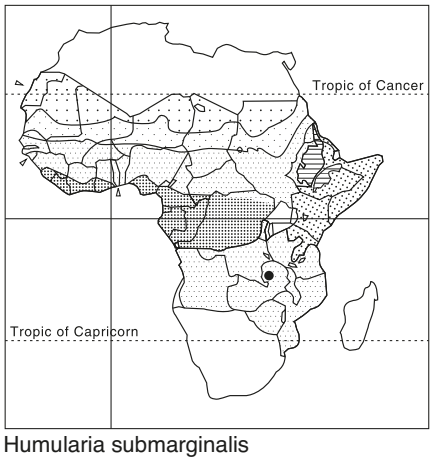
Humularia pseudaeschynomene



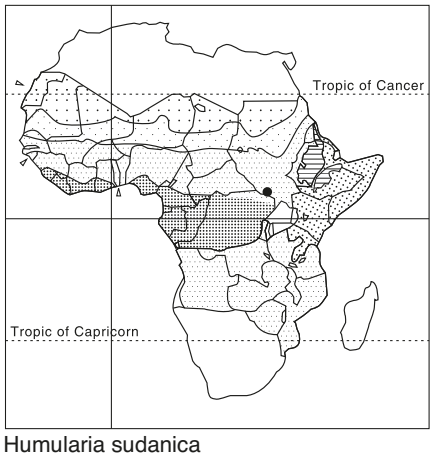
Humularia renieri



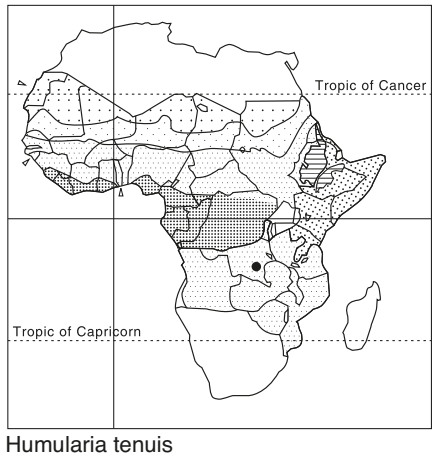
Humularia rosea



Humularia submarginalis



Humularia sudanica



Humularia tenuis

Indigofera achyranthoides Taub.

Perennial herb with woody rhizome and several prostrate, or sometimes weakly, ascending ± flattened stems from the base, 15-60 cm tall; fruit unknown.

Open or partly wooded savanna.

Near *I. bongensis, I. hundtii.*

I. adenoides Bak. f.

Perennial shrublet from a woody rootstock; stems covered with glandular hairs.

Ecology unknown in Zimbabwe? (grassland, usually on rocky slopes in S. Africa).

Near *I. viscidissima.*

I. alternans DC., incl. var. *macra* Bak. 1871, non *I. macra* E. Mey. 1836, nec Bak. 1897.

syn.: *I. exigua* Eckl. & Zeyh.; *I. arenaria* E. Mey. 1836, non A. Rich. 1847 (= *I. hochstetteri)*; *I. effusa* R. Mey.

Prostrate, ± argenteo-canescent herb, copiously branched at the crown of the root and upwards with stems to 30 cm long (sometimes suberect, 30-60 cm long, much more robust).

Sandhills, among species of leafless *Euphorbia* and *Zygophyllum,* rather frequent; sea-sands; river banks.

S. Africa, Namibia.

I. ambelacensis Schweinf.

syn.: *I. pauciflora* De Wild. 1923, non Eckl. & Zeyh. 1836; *I. wildemanii* Bak. f.; *I. conradsii* Bak. f.

Erect or spreading annual herb, branching from the base, 20-80 cm tall, from a taproot.

Grassy and rocky places; roadsides and a weed in cultivation; woodland; open savanna; 750-1900 m alt.

Not in W. Africa.

I. amorphoides Jaub. & Spach

syn.: *I. abyssinica* Hochst. nom.; *I. alta* Schweinf.

Shrubby herb to 0,7-1 m tall; stems slightly ridged.

Woodland; roadsides; arable land; *Acacia-Commiphora* open bushland; 400-2500 m alt.

Arabia (Yemen).

I. ancistrocarpa Thulin

Shrublet with numerous erect slender brown stems to 60 cm tall from a thick woody base.

A dominant species along a rocky ridge, presumably of sandstone; in the area a rich *Acacia-Commiphora* bushland including bushes of *Calliandra gilbertii* and the largest tree *Bottegoa insignis;* 450-500 m alt.

Related to *I. marmorata* Balf. f. from Socotra (not in Gillett's revision).

I. andrewsiana J. B. Gillett

Annual branching herb ± 45 cm tall; stem and branches rigid, angular, silvery pilose.

Sticky black soils of grassy plains; weed in cultivated land; black cotton soil with stones; 380-750 m alt.

I. antunesiana Harms

syn.: *"I. endecaphylla* Jacq. form with large leaflets" sensu Hiern, Cat. Welw. Afr. Pl. 1: 215, 1896; *I. stenophylla* Guill. & Perr. var. *nyassae* Bak. f.; *"I. trimorphophylla* Taub. a close ally" sensu Bak. f., J. Bot. 46: 102, 1928.

Stems stout, stiffly erect, to 60 cm tall from a perennial woody base.

Brachystegia woodland; wooded thickets; 1300-1525 m alt.

I. arabica Jaub. & Spach

Perennial herb, ± woody at base; stems 15-30 cm long, diffusely branched, especially at base, silvery-strigose.

Rocky ground; *Acacia* woodland and bushland; to ± 1260 m alt.

Egypt (Sinai), Arabia (Yemen).

I. arenophila Schinz

syn.: *I. antennulifera* L. Bolus; *Lotononis omahekensis* Dinter ex A. Schreiber, nom. nud. in syn.

Densely grey-villose slender annual, diffuse or suberect herb; stems rounded to 25 cm long; with a long tap-root; with antenna-like glands which terminate stipules, leaflets, calyx segments, very similar to those of *Rhynchosia antennulifera.*

Sand; to 915 m alt.

Namibia.

Near *I. kuntzei.*

I. argentea Burm. f., 1768, non L. 1771 (= **I. tinctoria** var. **tinctoria)**. – Cortés-Burns & al. (2004): 699.

syn.: *I. semitrijuga* Forssk. var. *tetrasperma* DC.; *"I. semitrijuga* Forsk." sensu Bak., non Forssk.; *I. burmannii* Boiss.; *I. arenaria* A. Rich. var. *strigosa* A. Terracc.

Annual herb (or shrub?) 20-50 cm tall, copiously and diffusely branched, densely silvery-canescent, prostrate or with ascending stems, sparsely glandular-hairy (glandular hairs very short, and readily overlooked).

Dunes (sometimes abundant); sandy plains; "nebkas"; rocks; component of 'Gizu Grass' (Sudan) growing up in the early part of the dry season (good grazing); 60 m alt. and more.

Algeria (Hoggar), Egypt; Socotra; Arabia, southern Iran, India (Sind, Punjab).

Not in E. Africa (= **I. brachynema, I. coerulea)**.

I. arrecta Hochst. ex A. Rich. 1847, non Benth. ex Harv. 1862 (= *I. pretoriana* Harms, S. Africa).

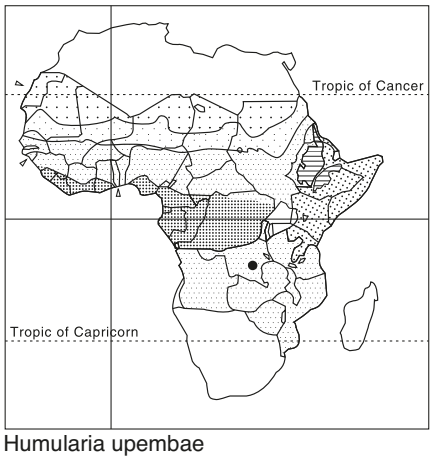
syn.: *I. kisantuensis* De Wild. & Th. Durand; *I. scopa* De Wild. & Th. Durand; *I. umbonata* Welw. ex Bak.; *I. tinctoria* L. var. *arrecta* Berhaut

Stout rather woody herb 0,3-2(-3) m tall; stems somewhate ridged, white and brown strigulose.

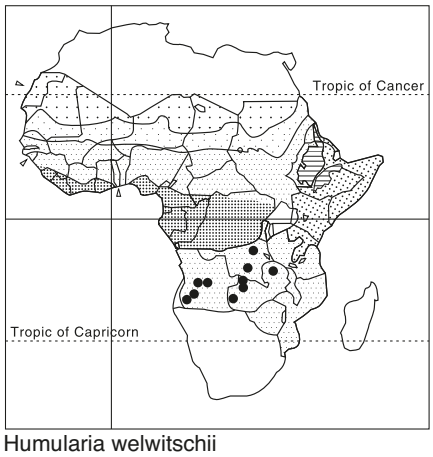
Deciduous and evergreen bushland; mixed woodland; areas of cultivation and secondary growth; forest margins; (*Hyparrhenia)* grassland; roadsides; flood plains; pans; termitaria; waste ground; 200-2700 m alt.

S. Africa (Transvaal, Natal), Swaziland; S Arabia; Madagascar; SE Asia.

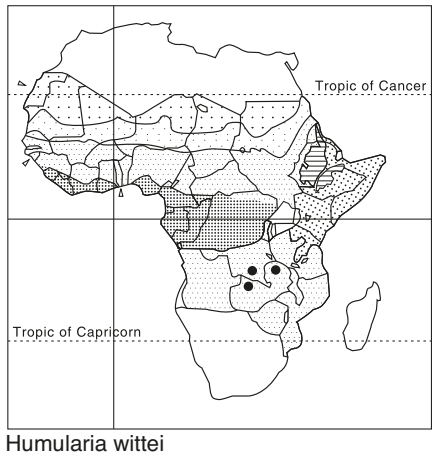
Cultivated in the whole of tropical Africa and in SE Africa. Range greatly extended by cultivation for indigo. Often hardly separable from *I. tinctoria* in W. Africa, more distinct in E. Africa.



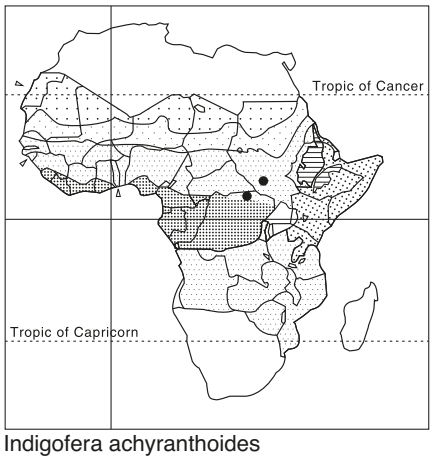
Humularia upembae



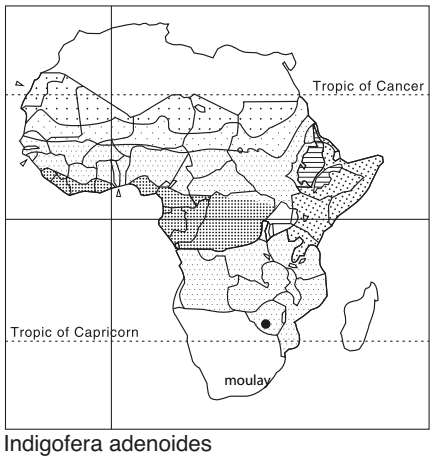
Humularia welwitschii



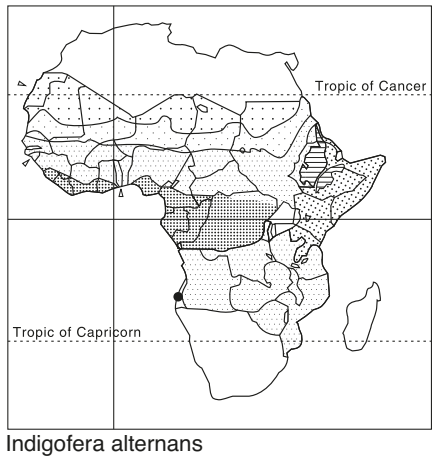
Humularia wittei



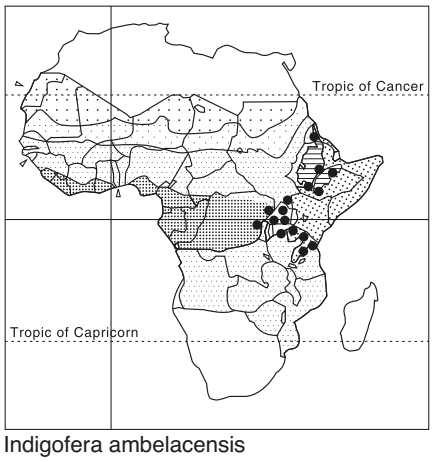
Indigofera achyranthoides



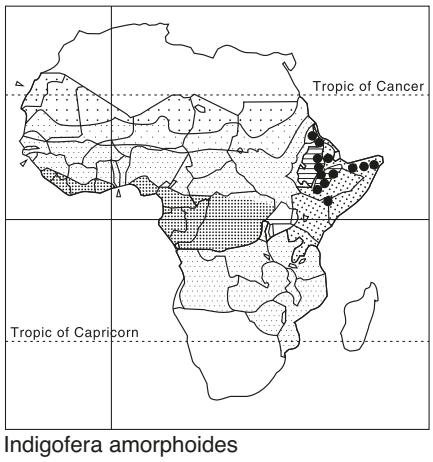
Indigofera adenoides



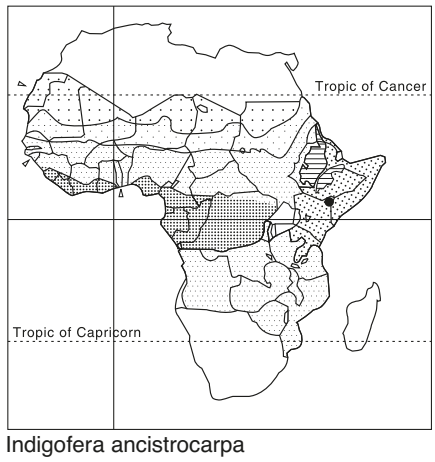
Indigofera alternans



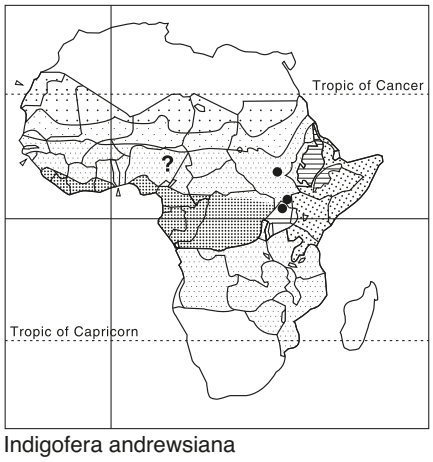
Indigofera ambelacensis



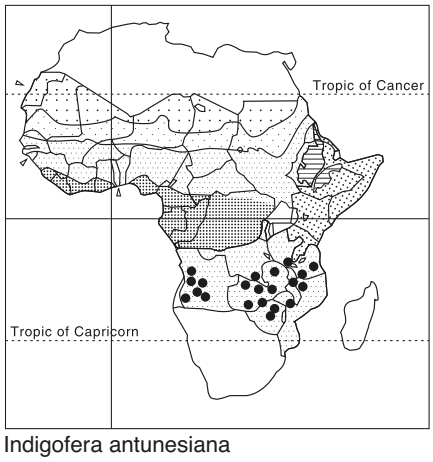
Indigofera amorphoides



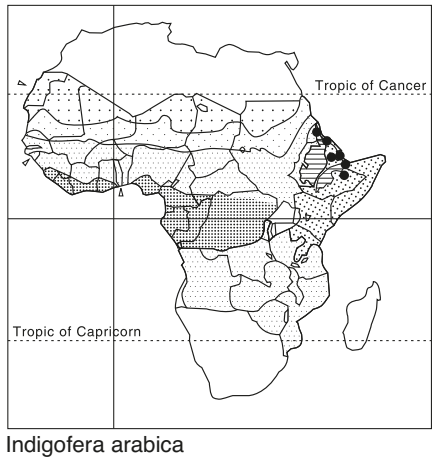
Indigofera ancistrocarpa



Indigofera andrewsiana



Indigofera antunesiana



Indigofera arabica

INDIGOFERA ARRECTA

LEMMENS, R. H. M. J. (2002). Indigofera arrecta Hochst. ex A. Rich. *In :* OYEN, L. P. A. & R. H. M. J. LEMMENS, eds., *Ressources végétales de l'Afrique tropicale. Précurseur :* 107-111. [Translation of: Plant Resources of Tropical Africa. Precursor.] Programme PROTA, Wageningen.

WILSON, P. G. & B. D. SCHRIRE (2003). Correcting confusion in Indigofera confusa (Fabaceae). *Taxon* 52 : 589-590.

Not mapped.

I. articulata Gouan – Cortés-Burns & al. (2004) : 701.

syn.: *I. glauca* Lam.

Shrub 0,5-1,2 m tall, densely silvery-strigose, with branched stems.

Grassland, bushland ; roadsides ; ± 1350-2700 m alt.

Egypt ; Arabia, Jordan to Pakistan ; Socotra ; Caribbean (introduced).

Not in E. Africa (= **I. coerulea)**.

I. aspera Perr. ex DC.

syn.: *I. linearis* DC., non Guill. & Perr. ; *I. tenella* Schumach.

Erect, diffuse annual herb, 20-80 cm tall.

Sandy grounds ; dunes on schist ; reg with quartzitic gravel, sandstone and ferrugineous ± clayey sand.

Not in Angola (= **I. charlieriana)**.

I. asterocalycina Gilli

Shrubby herb to 3 m tall ; young branches purplish, densely covered with short white hairs spreading at the tips.

Bushland with *Dodonaea, Hyparrhenia ;* 530 m alt.

Only a form of **I. wildiana** ?

I. astragalina DC.

Erect or straggling grey herb ± 25-70 cm tall.

Sandy grounds ; muddy sand ; sand on sandstone ; often ruderal ; rocaille ; waste or cultivated ground ; heavely grazed grassland ; to 1800 m alt.

S. Africa ; Namibia ; India, Burma, Pakistan, Sri Lanka. Introduced in the West Indies.

Confused with **I. hirsuta.**

I. atricephala Gilli

Erect annual or short-lived perennial herb to 1 m tall, appressed brown and white strigose.

Grassland ; 1600-2100 m alt.

Closely related to **I. schliebenii.**

Mozambique ?

I. atriceps Hook. f.

Coarse branching usually erect herb to 2 m tall (or straggling half woody) ; strigose, some or many of the hairs being brown or black, except on the leaflets ; glandular hairs always present on pods, usually on stems, inflorescence and leaf-rhachis.

Grassland ; forest margins ; often with *Pteridium ;* along rivers ; swampy grassland ; abandoned cultivations ; *Brachystegia* woodland ; bushland ; damp peaty situations ; among rocks in grassland ; rocky area with grassland and scattered, low ericaceous scrub, low subshrubs and herb in rock crevices ; rain-forest with

INDIGOFERA ATRICEPS

Albizia, Macaranga, Croton, Ocotea ; Loudetia arundinacea grassland with scattered trees ; or on very shallow soil ; 800-3200 m alt. – The subsp. **atriceps** reaches to as high altitudes as any species of *Indigofera* in Africa (3200 m).

A most variable species comprising at least 7 subspp. (for further synonyms, See Enum. 2 : 92, 1992) : – subsp. **atriceps** [syn.: *I. alboglandulosa* Engl. ; *I. masukuensis* Bak.] ; – subsp. **glandulosissima** (R. E. Fries) J. B. Gillett [syn.: *I. sousae* Exell] ; – subsp. **kaessneri** (Bak. f.) J. B. Gillett [syn.: *I. secundiflora* Poir. var. *holstii* Bak. f. ; *I. holstii* (Bak. f.) Bak. f.] ; – subsp. **ramosa** (Cronquist) J. B. Gillett ; – subsp. **rhodesiaca** J. B. Gillett ; – subsp. **setosissima** (Harms) J. B. Gillett [syn.: *I. elskensii* De Wild.] ; – subsp. **ufipaensis** J. B. Gillett – Each subspecies is itself variable and between them intermediates occur.

I. auricoma E. Mey., incl. var. *cuneata* Bak. f.

? Annual, herbaceous, procumbent, wholly albo-strigose herb ; stems kneebent, angular, many from the root crown, subsimple, very flexuous, 15-30 cm tall.

Stony hills in S. Africa.

Namibia, S. Africa.

Angola (fide Lock) ; Zambia ? – Not mapped.

I. bainesii Bak.

syn.: *I. variabilis* N. E. Br. 1903, non De Wild. 1904 (= **Microcharis welwitschii)**.

Shrubby, copiously branched bush 0,2-1 m tall ; branches woody, the ultimate branchlets subtetragonous, thinly silvery.

Ecology not precised (cf. Timberlake & al. in Kirkia 18 : 83-110, 2002).

Namibia, Botswana, S. Africa.

I. bangweolensis R. E. Fries

Herb with long trailing rather zigzag branches, densely covered (leaf-rhachides, peduncles, calyces, fruits) with multicellular hairs ; short white medifixed hairs also present.

Sandy roadsides and lake-shores ; abandoned cultivations ; 1310-2100 m alt.

Comprises 2 vars.

I. barteri Hutch. & Dalziel

Branching slightly woody herb to 45 cm tall ; glandular hairs absent on fruits and leaflets, rather sparse elsewhere.

Rock crevice, appearing after rains.

Near *I. colutea, I. secundiflora.*

Sudan ?

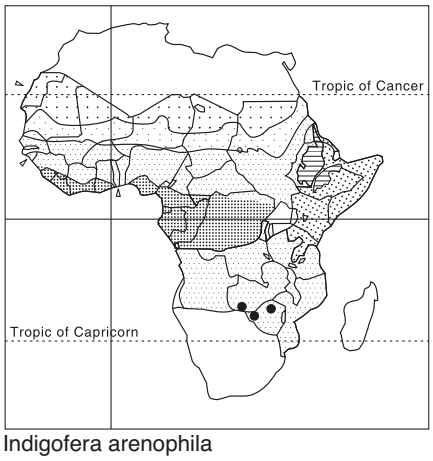
I. basiflora J. B. Gillett

Shrublet to 70 cm tall ; inflorescence-spines not exceeding 15 mm lenght.

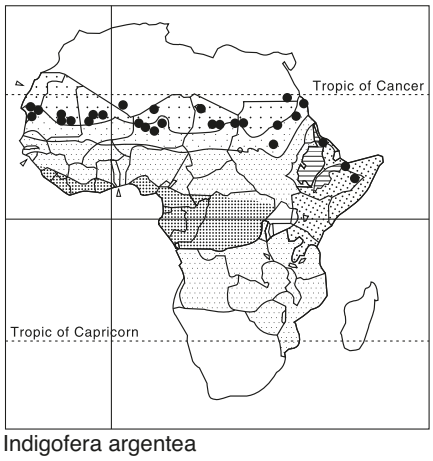
Thin rocky soil ; over-grazed area in dry grassland ; 450-1900 m alt.

Near *I. spinosa.*

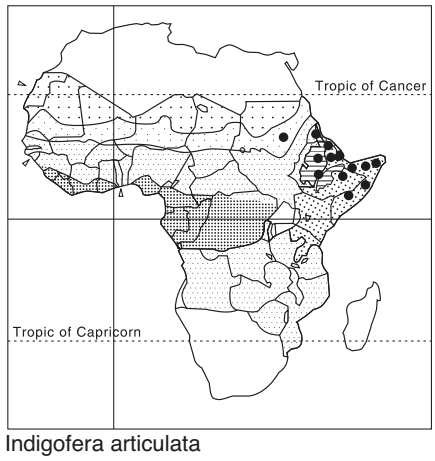
This species seems to be increasing, probably as a result of intensified grazing.



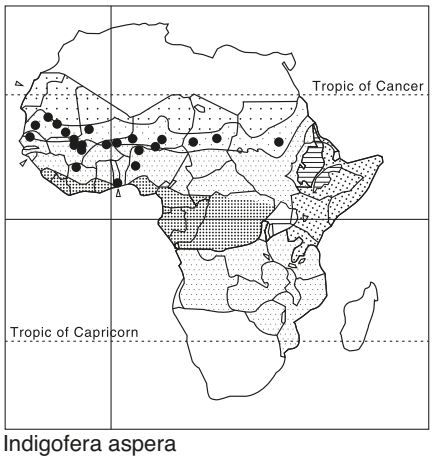
Indigofera arenophila



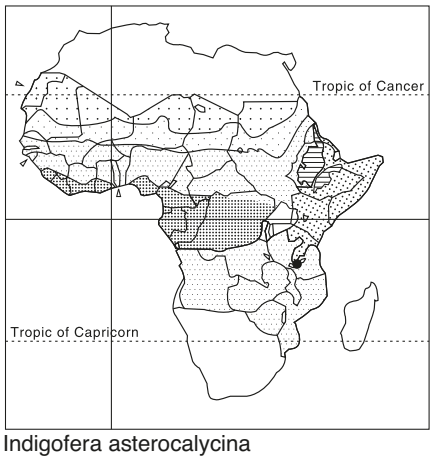
Indigofera argentea



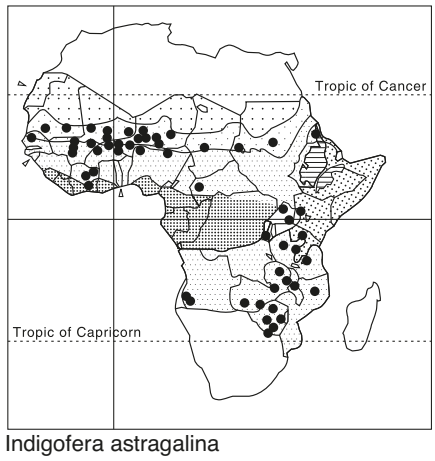
Indigofera articulata



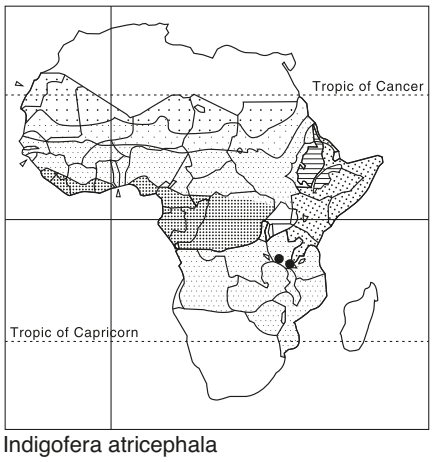
Indigofera aspera



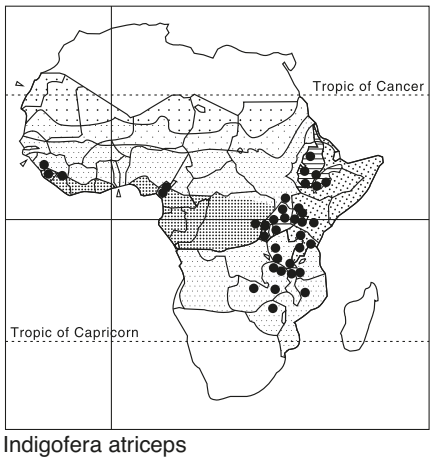
Indigofera asterocalycina



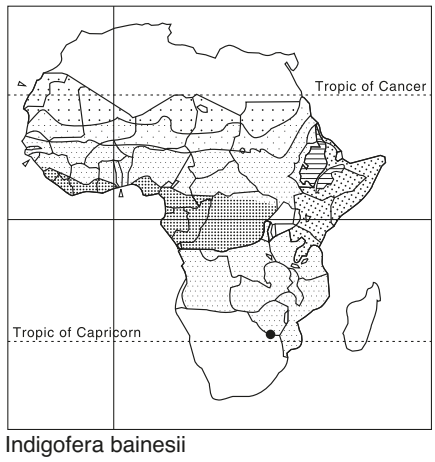
Indigofera astragalina



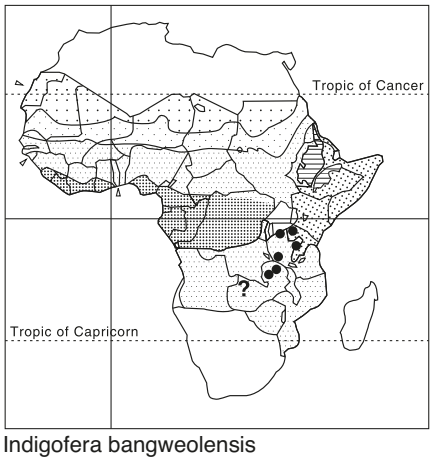
Indigofera atricephala



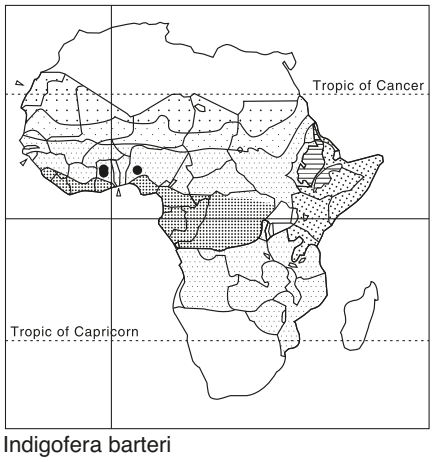
Indigofera atriceps



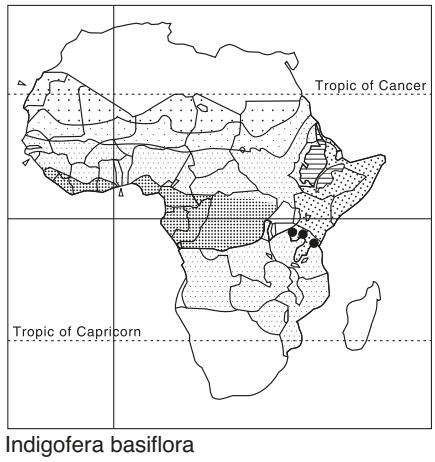
Indigofera bainesii



Indigofera bangweolensis



Indigofera barteri



Indigofera basiflora

I. baumiana Harms, *excl.* var. *paucijuga* R. E. Fries, var. *roseo-violacea* De Wild. and var. *hocki* De Wild. (all = **I. sutherlandioides)**; Kew Bull. 52: 155, 1997.

Shrub to 1 m tall; branchlets villous-pubescent.

Open wood on sand; xerophilous wood; in herb-grown thickets; mixed open thickets; sometimes common; open seasonally waterlogged areas, in sand often near rivers or associated with granite outcrops; *Brachystegia, Cryptosepalum* woodland; 1000-1400 m alt.

Namibia.

I. bayensis Thulin

Annual or short-lived perennial subprostrate herb; stems much branched, to 50 cm long, fairly densely to sparsely pubescent with ± spreading to subappressed hairs, green, subterete.

Deciduous *Acacia-Commiphora* bushland or mixed deciduous and semi-evergreen bushland on quartzite gravel or orange soil; 95-325 m alt.

I. benguellensis Bak.

Argenteous trailing perennial herb with slender terete stems >30cm long, with copious ascending curved branches.

See-sands not far from the ocean; river mouth.

I. berhautiana J. B. Gillett

Herb ± woody; branches rounded, sericeous, 15-40 cm long; sometimes prostrate.

Sandy places; sandy meadows; sometimes frequent.

I. biglandulosa J. B. Gillett

Annual (? always) herb, with spreading pilose branches; petiole with 2 glands on stalks ± 0,7 mm long, in its lower part.

Sands, especially near lake shores; 775-900 m alt.

I. binderi Kotschy – Icon.: T. Kotschy, Plantae Binderianae in Akad. Wiss. Wien Sitzungsber., Math. – Naturwiss. Kl. 51 (1): pl. 6b, 1865.

Softly woody shrub to 2 m tall, with rather slender cylindrical or only very slightly 3-angled stems; indumentum everywhere appressed, that on the calyx so dense that it seems white.

Semi-evergreen bushland; dry evergreen forest; stream banks; wooded grassland; rocky hillsides; 1050-1900 m alt.

I. garckeana Vatke should perhaps be treated as one of its forms.

I. bogdanii J. B. Gillett

Intricate shrublet to 50 cm tall; stems cylindrical, rather densely appressed strigulose (like leaf-rachides and inflorescences).

Rocky and saline places; overgrazed pastures; roadsides; *Acacia-Themeda* grassland; 1400-2200 m alt.

Comprises 2 vars.

Most closely related to the S. African **I. cryptantha** Harv.

I. bongensis Kotschy & Peyr., non *I. congolensis* var. *bongensis* (Bak. f.) J. B. Gillett – Icon.: Kotschy & Peyritsch, Pl. Tinn. 8: pl. 4, 1867.

Perennial herb with many stems in rainy season, prostrate or decumbent, not or slightly ramose, 15-50 cm long, slender, angular, thinly appressed-silky, from a woody rootstock. Stems erect in dry season.

Open savanna.

I. boranica Thulin

Slender erect shrublet to 1-2 m tall; bark on old stems *dark purple* with circular lenticels; young branchlets strigose, hairs appressed or slightly spreading at the tips, white, sometimes intermingled with scattered short multicellular dark hairs; fruit and seed known!

Acacia-Commiphora bushland or woodland on limestone or sandstone; also shallow soil over limestone; ± 450-1450 m alt.

I. brachynema J. B. Gillett

Erect annual herb to 35 cm tall, covered with a sparse or dense indumentum of white, ± appressed hairs; also rather short erect multicellular gland-tipped hairs nearly always present (never found on the leaflets).

Dry grassland, *Acacia-Commiphora* bushland; margins of cultivations; on sand or on dunes; 0-1250 m alt.

Variation considerable.

I. bracteolata DC.

Annual, much-branched shoots 15-50 cm tall, with a woody base; ramose from the base; with a woody perennial rootstock.

Sandy ground; sometimes temporarily flooded; in savanna.

Greatly variable species.

Specimens showing only simple leaves are readily confused with **I. leptoclada.**

I. brassii Bak.

Erect, softly woody herb; stems shrubby, copiously branched; branches densely clothed with grey spreading pubescence.

Ecology unknown.

? Only known from the type. Extreme variant of **I. pulchra**?

I. brevicalyx Bak. f.

Branches prostrate from a woody perennial taproot, ± sparsely appressed strigulose, to 35 cm long; leaflets with a *blister at each side and another beneath the tip.*

Short grassland; semi-evergreen bushland on limestone plateau; 900-2400 m alt.

I. brevifilamenta J. B. Gillett

Annual herb to 40 cm tall, with rather sparse indumentum of ± appressed white hairs and also numerous rather long slender erect yellowish or reddish multicellular hairs, which may or may not be obscurely gland-tipped.

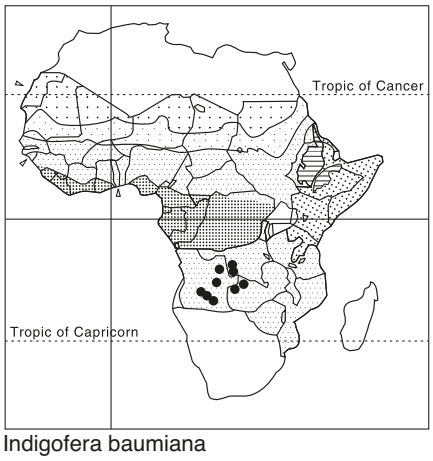
Grassland with scattered *Acacia;* especially on sandy soil; on granite sand; grassy plains with laterite soils; on laterite; ± 600-1400 m alt.

I. breviracemosa Torre

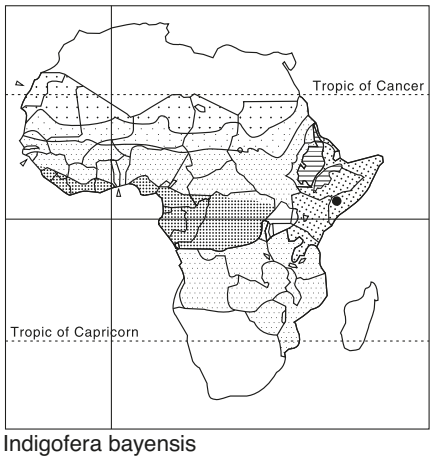
Ramose shrub, ± 50 cm tall; stem glabrous or glabrescent with fissured bark, slightly reddish; branches rounded, canescent, with appressed, dense indumentum; ripe seeds unknown.

Torrential river sides.

Only known from the type collected in 1937.



Indigofera baumiana



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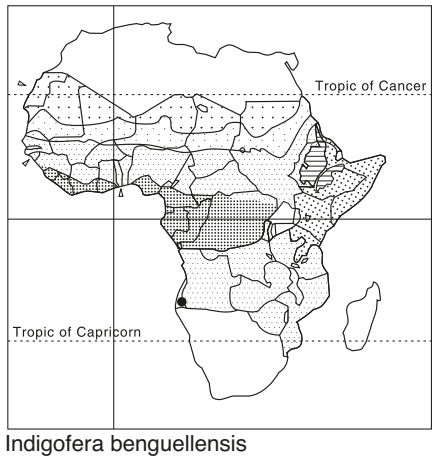

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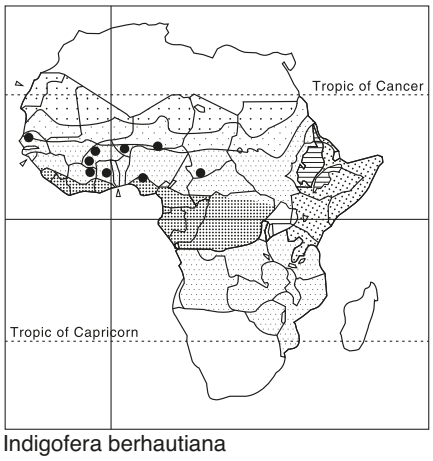
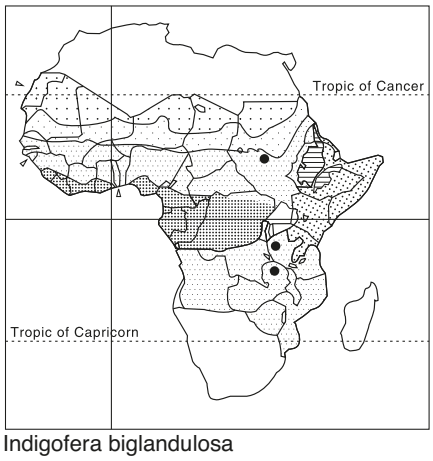
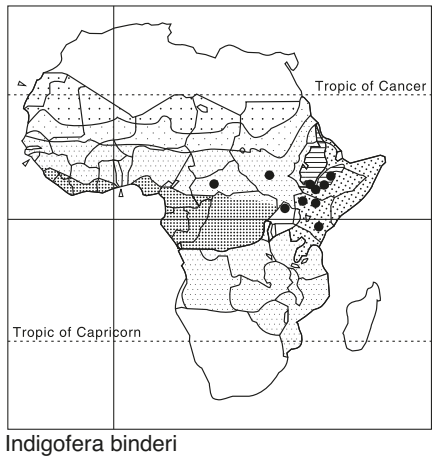


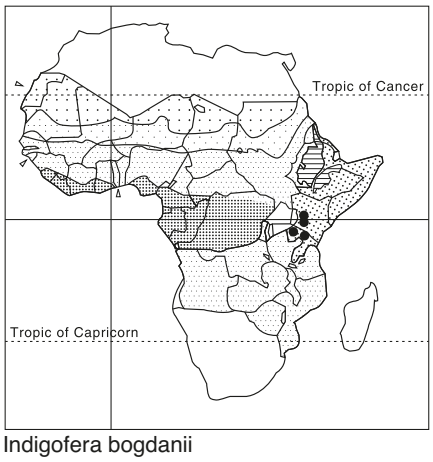
Indigofera berhautiana



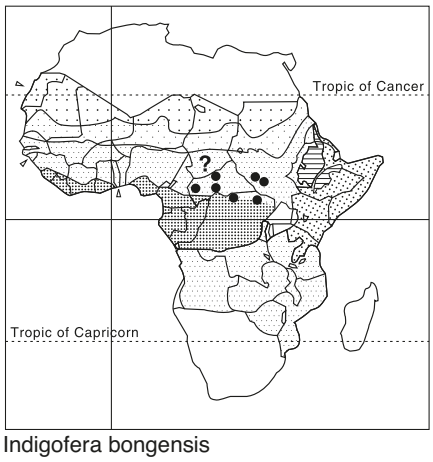
Indigofera biglandulosa



Indigofera binderi



Indigofera bogdanii



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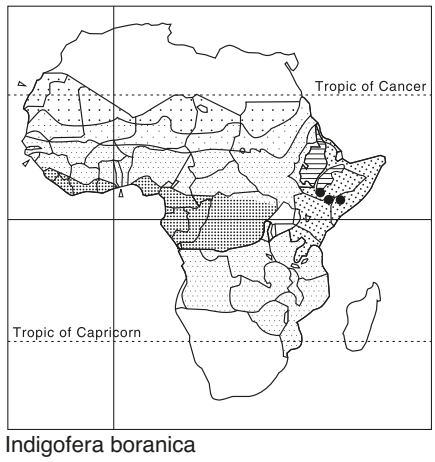

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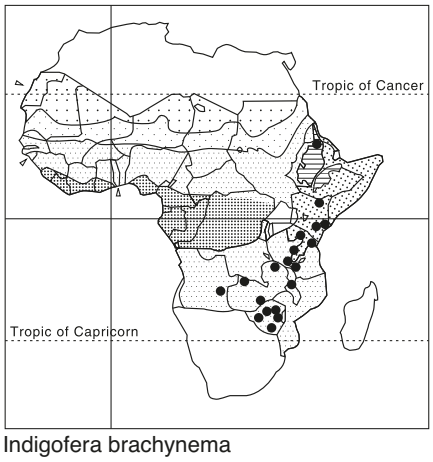
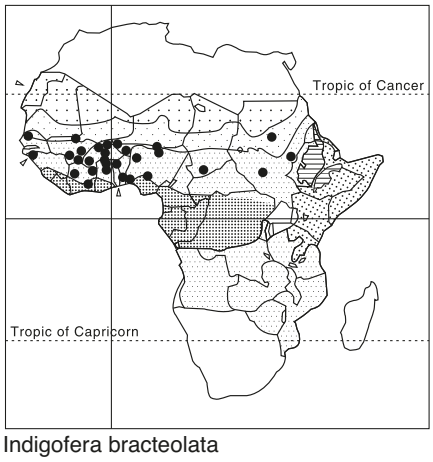
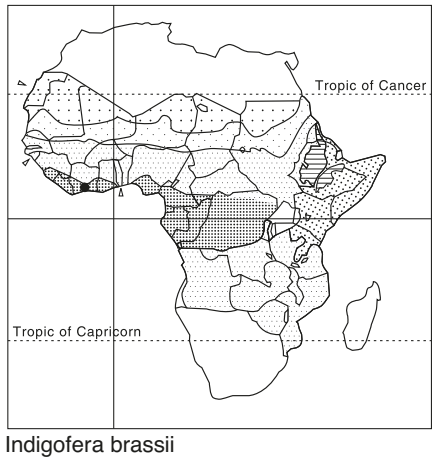


Indigofera brachynema



Indigofera bracteolata



Indigofera brassii

INDIGOFERA

I. breviviscosa J. B. Gillett

Annual herb with often prostrate branches ; white biramose appressed hairs, rather sparse ; erect, multicellular, glandulous hairs numerous.

Roadsides in damp soil ; muddy peat among tall grass ; sand dunes ; sandy roadside ; deep sand ; well-drained sandy woodland ; 1050-1200 m alt.

Confused with *I. dyeri* var. *congesta.*

I. burttii Bak. f.

Semi-woody perennial bushy herb to 35 cm tall from a woody rootstock, covered with fine silky subsimple hairs to 3 mm long, which ± hide the shorter, stiffer, medifixed hairs ; shoots sometimes very different at first sight : old slowly grown shoots in which the leaves are densely crowded, or soft lax quickly grown shoots.

Deciduous woodland and grassland especially on sand ; 1200-1800 m alt.

I. bussei J. B. Gillett

Ramose herb with diffuse stems to 60 cm long, scattered appressed pilose.

Ecology unknown.

Only known from the type collected in 1903.

I. capitata Kotschy – Icon.: T. Koschy, Plantae Binderianae in Akad. Wiss. Wien Sitzungsber., Math.-Naturwiss. Kl. 51(1) : pl. 6a, 1865.

Erect, rather woody, branching annual herb, 20-120 cm tall, from a taproot ; plant rather densely appressed strigulose.

Thin vegetation on shallow soil ; ferrugineous plateau ; dry ground ; hollows ; wooded savanna on sand ; esobe and savanna on sandy soils.

I. cavallii Chiov.

Bushy herb or subshrub to 1 m tall with tomentose stems.

Along watercourse ; roadside in a limestone valley (in area with *Acacia-Commiphora* bushland with scattered trees of *Sterculia, Terminalia* etc.) ; sometimes in large quantities in place along road (Kenya) ; 240- ± 400 m alt.

First collected in 1913 ; second collection in 1978.

I. cecilii N. E. Br.

Herb 30-45 cm tall, with stem 3 mm Ø, striate.

Ecology unknown ; 600-2100 m alt.

I. charlierana Schinz, incl. var. *charlierana* and var. *sessilis* (Chiov.) J. B. Gillett (bas.: *I. linearis* DC. var. *sessilis* Chiov.; syn.: *I. relaxata* N. E. Br.).

Slender, spreading strigulose annual herb to 20 cm tall.

Sandy grassland ; abandoned cultivations ; sandy coastal grassland ; in sand by lagoon ; 0-230 m alt.

Botswana, Namibia, S. Africa.

The (possible) var. **scaberrima** (Schinz) J. B. Gillett occurs only in Namibia and N Central Cape ; var. **lata** J. B. Gillett in Namibia.

I. chevalieri Tiss.

Stems erect, ramose, 30-50 cm tall from a woody root ; branches cylindrical, ± flattened, striate ; hairs appressed ; fruit unknown.

Savanna.

INDIGOFERA CHEVALIERI

Only known from the type collected in 1903.

Closely related to **I. conjugata** var. **schweinfurthii** but leaflets (1-2 mm) narrower, leaf rachis shorter (2 mm), inflorescence often longer (to 18 cm).

I. chirensis Cufod. ex J. B. Gillett

syn.: *I. ervoides* A. Rich. 1847, non Meisn. 1844.

Annual herb with prostrate radiating branches, appressed pilose with long hairs.

Short grassland on damp sandy soil ; 1500-2100 m alt.

I. circinella Bak. f.

syn.: *I. spirocarpa* Harms

Procumbent herb with a stout perennial taproot, much resembling certain forms of *I. spicata* (stems numerous, slender, 5-40 cm long, strigose).

Short grassland, especially on poor shallow soils ; wooded savanna ; meadows ; roadsides ; 50-2100 m alt.

I. circinnata Benth. ex Harv.

Shrublet, rigid, very spiny (spines axillary, fulvous, horizontal, to 2,5 cm) ; branches villoso-canescent, virgate ; axis of inflorescence a brown spine, less than 2 cm long.

Ecology unknown.

Botswana, S. Africa.

I. cliffordiana J. B. Gillett

Shrublet ± 50 cm tall ; branchlets densely appressed silvery strigose.

Acacia-Commiphora scrub ; semi-desert ; dry grassland and bushland ; especially on sand ; 100-1450 m alt.

I. coerulea Roxb. – Cortés-Burns & al. (2004) : 702-703.

Stout shrubby semi-woody herb or shrub to 1 m tall, with slightly angled, densely appressed silvery, strigulose or pubescent stems.

Subdesert and open *Acacia-Commiphora* bushland ; sandy-clayey hollows, humid or flooded ; dry grassland ; roadsides ; coastal arid plains ; 200-2700 m alt. Sometimes cultivated.

Egypt ; Arabia, Socotra ; Mauritius (? introduced) ; India, Sri Lanka, Pakistan ; Algeria (? cultivated).

Comprises 2 vars.

Much confused with *I. articulata* Gouan

I. colutea (Burm. f.) Merrill – Cortés-Burns & al. (2004) : 699.

bas.: *Galega colutea* Burm. f.

syn.: *Indigofera consanguinea* Klotzsch ; *I. junodii* N. E. Br.; *I. seticulosa* Harv.

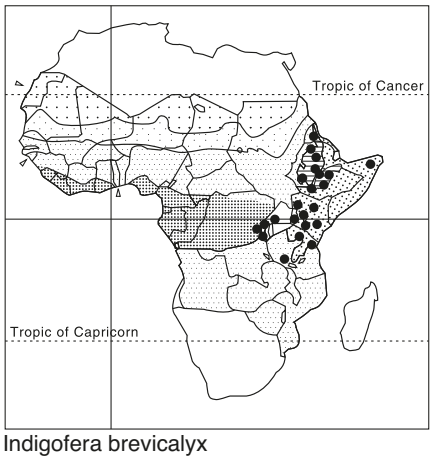
Erect or spreading annual or short-lived perennial herb, 10-90 cm tall, covered (not densely) with white appressed or spreading hairs and with erect multicellular glandular hairs (aromatic).

Grassland ; cultivations ; open spots in bushland ; especially on sandy soil ; sandy-muddy soil ; grassy formation with *Schoenefeldia gracilis ;* rocky places ; deciduous woodland or bushland ; 0-1500 m alt.

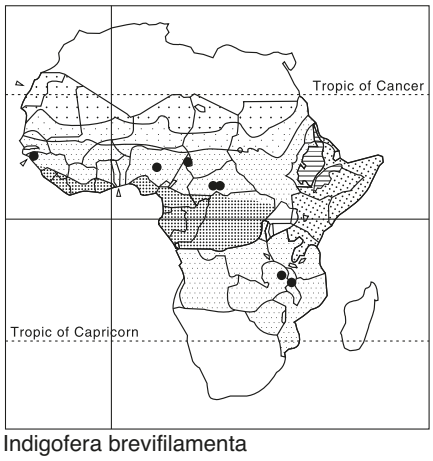
S. Africa, Namibia ; Cape Verde Isl.; Socotra, Arabia, Pakistan, India, Sri Lanka ; Indonesia ; Australia ; N. America (USA), Caribbean (probably introduced for dye). – Weedy species.

Comprises 3 vars.

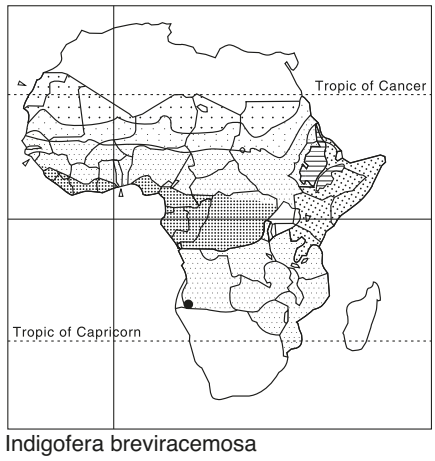
Confused with **I. hewittii.**



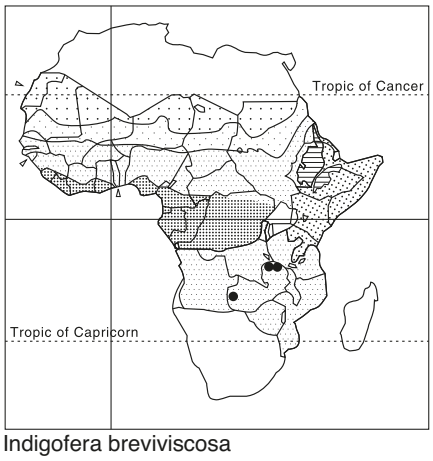
Indigofera brevicalyx



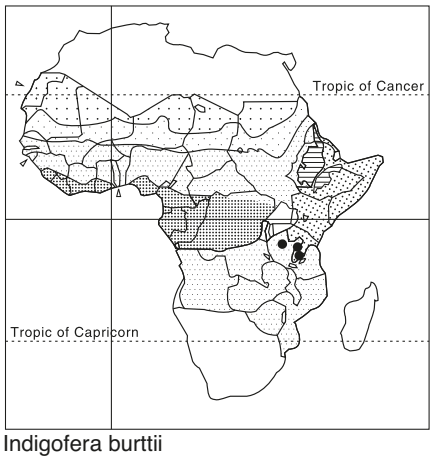
Indigofera brevifilamenta



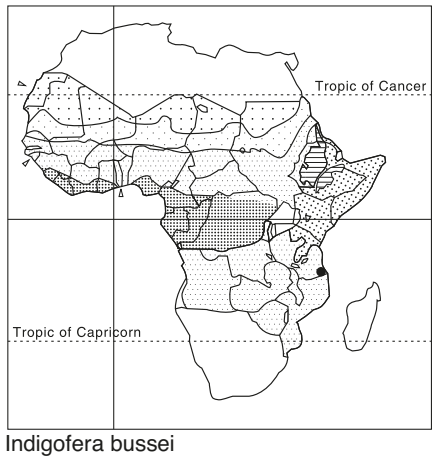
Indigofera breviracemosa



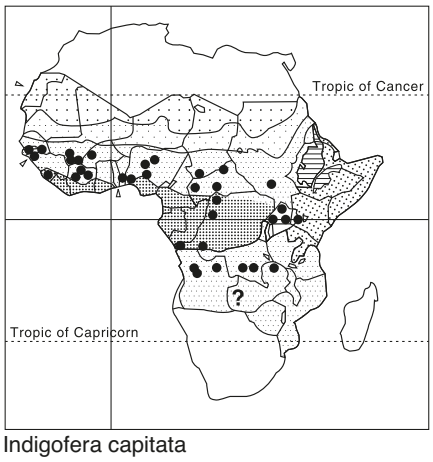
Indigofera breviviscosa



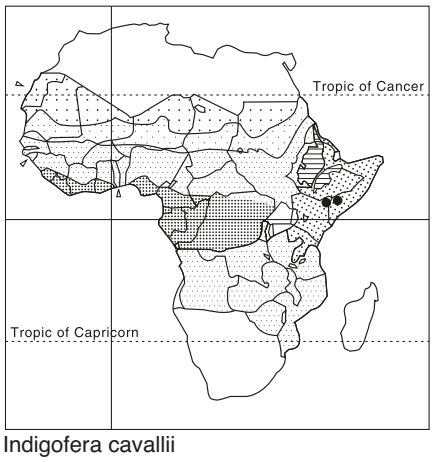
Indigofera burttii



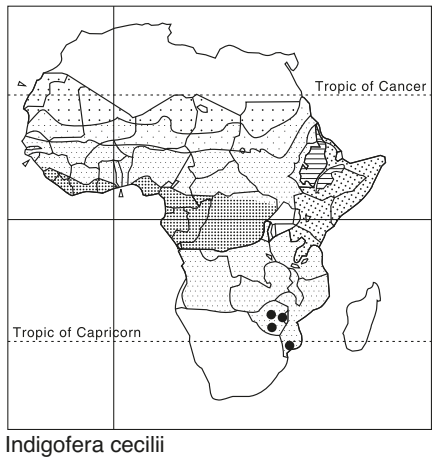
Indigofera bussei



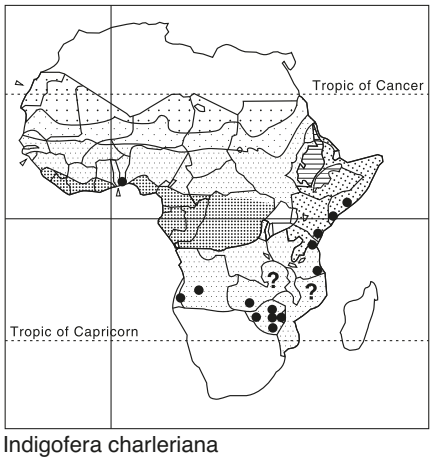
Indigofera capitata



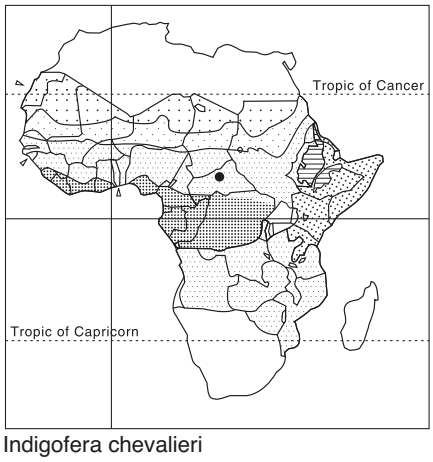
Indigofera cavallii



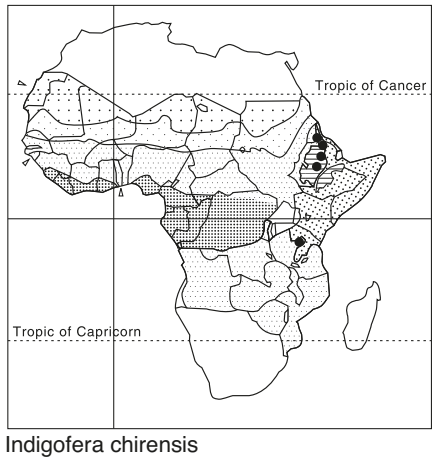
Indigofera cecilii



Indigofera charleriana



Indigofera chevalieri



Indigofera chirensis

I. concinna Bak.

syn.: *I. mossambicensis* Bak. f.

Annual or perennial herb ; stems herbaceous 15-22 cm long, copiously and diffusely branched from the base, the branches very slender, angular, only thinly hairy upwards.

Roadsides etc.; 0-500 m alt.

I. conferta J. B. Gillett

Grey branching herb to ± 80 cm tall ; with glandular hairs on stems and leaf rhachis ; inflorescence compact, not above 5 mm long, sessile in the axils of the leaves (very particular among the African *Indigofera* with glandular hairs).

Rocky soil after rain ; savanna woodland with *Isoberlinia, Afzelia, Detarium, Burkea* above and *Loudetia* covering the ground.

I. congesta Welw. ex Bak., incl. var. *flamans* Bak. f.

Erect branching, semi-woody herb to 90-180 cm tall from a taproot ; stems strigulose or pubescent.

Grassland ; seasonal swamps ; old cultivations ; sandy ground on rice-field edge ; wooded savanna with *Isoberlinia doka ;* sandy thickets ; among high grasses near source ; 0-1700 m alt.

I. congolensis De Wild. & Th. Durand

Slender, erect, very ramose annual herb from a taproot, 10-70 cm tall ; branches white-strigulose.

Savanna ; swampy places ; fallow land ; sand ; thin vegetation on laterite ; to 1100 m alt.

Comprises 2 vars.

Has been much confused with **I. geminata**

I. conjugata Bak.

syn.: *I. dalzielii* Hutch., incl. var. *congolensis* Bak. f. ex De Wild.

Perennial herb with a stout woody rootstock ; stems appressed strigulose, procumbent, erect or spreading, to 50 cm long.

Short grassland ; roadsides ; cultivated areas ; wooded grassland with *Combretum* etc.; sand or sandy soils ; bush after burning ; 800-1800 m alt.

Comprises 4 vars.

I. corallinosperma Torre

Shrub 1-2 m tall, ramose ; stems and branches ± striate ; hairs dense or sparce, appressed.

Deciduous forest ; 1800-2000 m alt.

I. cordifolia Heyne ex Roth – Cortés-Burns & al. (2004) : 703-704.

Annual or perennial herb, prostrate, diffusely branched, or simple and erect 10-35 cm long, clothed with long, white hairs.

Thin clayey-stony soils ; rocks ; wadi beds ; sands ; dry grassland or scrub ; gravelly places ; to 1000 m alt.

Leaves variable : cordate on rocky, stony, gravelly soils ; ovate (25x13 mm) on sand.

Cape Verde Isl.; Egypt ; Socotra ; Afghanistan, Pakistan, India, Timor ; Java (probably adventive) ; N Australia (perhaps introduced from Timor ; see Telopea 10 : 673, 2004).

Good soil binder.

I. costata Guill. & Perr.

syn.: *Indigastrum costatum* (Guill. & Perr.) Schrire

Annual herb to 60 cm tall ; stems ridged, strigulose.

Grassland ; woodland ; limestone ground ; sand or sandy places ; 100-2100 m alt.

Namibia, S. Africa ; Yemen.

Comprises 4 subspp.: – subsp. **costata ;** – subsp. **goniodes** (Hochst. ex Bak.) J. B. Gillett [syn.: *Indigastrum macrostachyum* Jaub. & Spach ; *Indigastrum costatum* (Guill. & Perr.) Schrire subsp. *goniodes* (Hochst. ex Bak.) Schrire ; *Indigofera macrostachya* Vent.]; – subsp. **macra** (E. Mey.) J. B. Gillett [syn.: *Indigofera goniodes* var. *rhodesica* Bak. f.; *Indigastrum costatum* subsp. *macrum* (E. May.) Schrire]; – subsp. **theuschii** (O. Hoffm.) J. B. Gillett [syn.: *Indigofera heptaphylla* Hiern ; *Indigastrum costatum* subsp. *theuschii* O. Hoffm.) Schrire].

I. cryptantha Benth. ex Harv. var. **cryptantha**

Much-branched shrublet to 50 cm tall with a few erect stems from a woody rootstock ; branches angular and furrowed.

Ecology unknown in Zimbabwe ; grassland and bushveld in S. Africa.

Namibia [var. **cryptantha** and var. **occidentalis** Bak. f.]; Madagascar [var. **desmodioides** (Bak.) J. B. Gillett ; syn.: *I. cryptantha* subsp. *desmodioides* (Bak.) Du Puy & Labat, Legum. Madag.: 489, 2002].

I. cuitoensis Bak. f.; Kew Bull. 24 : 465-467, 1970.

Perennial with a many-headed rootstock ; stems prostrate, radiately spreading, purple coloured ; leaves sub-fleshy ; ripe fruit unknown ; petals unknown.

Grassy slopes ; rare ; 1300 m alt.

Only known from the type.

I. cuneata Bak.

syn.: *I. latibracteata* Harms

Erect or spreading, branching annual to 40 cm tall ; stems pubescent or pilose when young, glabrescent when older.

Scattered tree grassland ; cultivations ; especially on sand ; 0-1500 m alt.

I. cunenensis Torre

Perennial, ramose, prostrate herb with several stems, ± 50 cm long, rounded and glabrous like branches ; young branches white appressed pilose ; seeds unkown.

Sandy stream banks, at mouth.

I. curvata J. B. Gillett

Annual herb, ± erect, 20-60 cm tall ; branches reddish, rather closely covered with short erect brown glandular hairs as well as longer white appressed hairs.

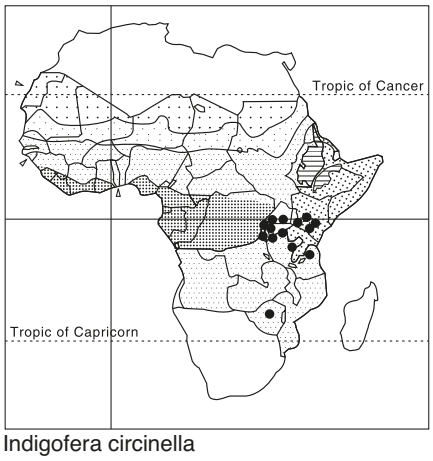
Sandy open places in *Acacia, Commiphora* bushland ; 1200-1400 m alt.

I. curvirostrata Thulin

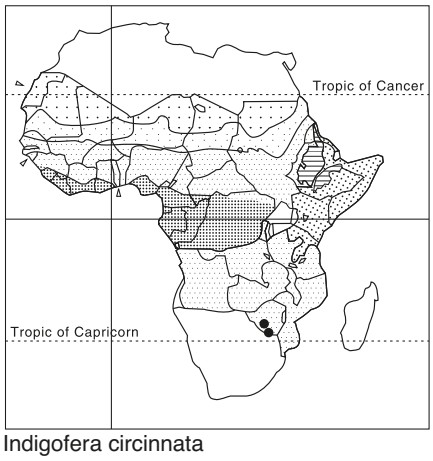
Shrub to 2 m tall, with hard wood ; young stems covered by short, closely appressed hairs ; old stems glabrescent, dark purplish brown ; flowers only known in bud ; stamens seen on fruit.

Woodland-bushland on rocky limestone slopes ; ± 900 m alt.

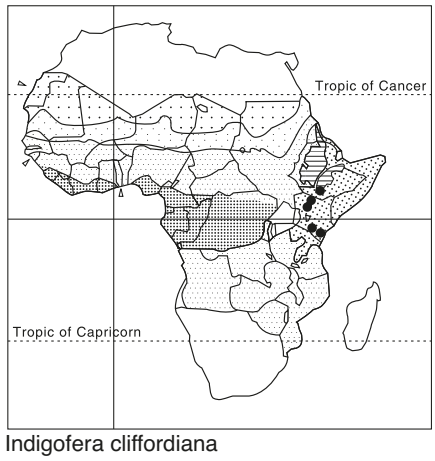
Collected twice : in 1983 and 1986.



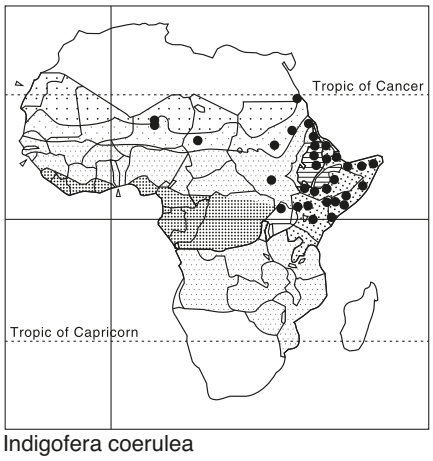
Indigofera circinella



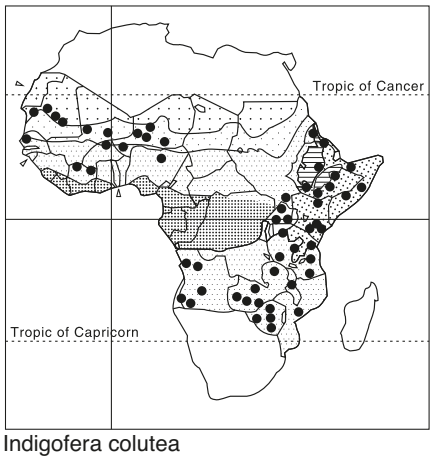
Indigofera circinnata



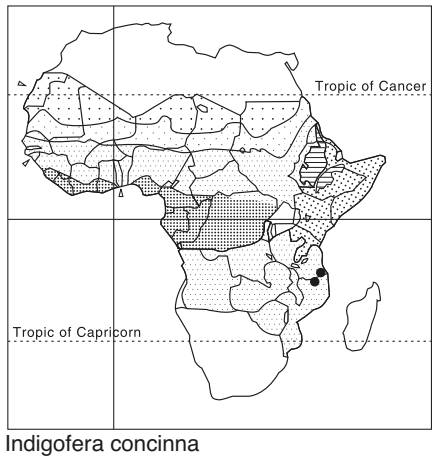
Indigofera cliffordiana



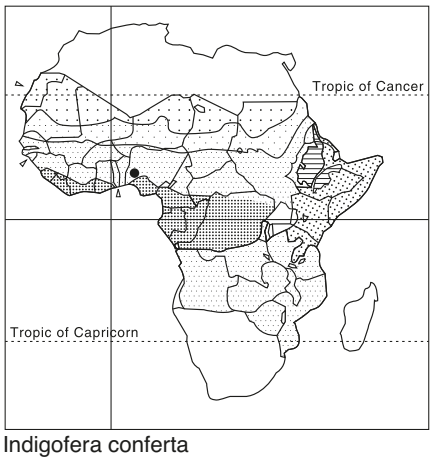
Indigofera coerulea



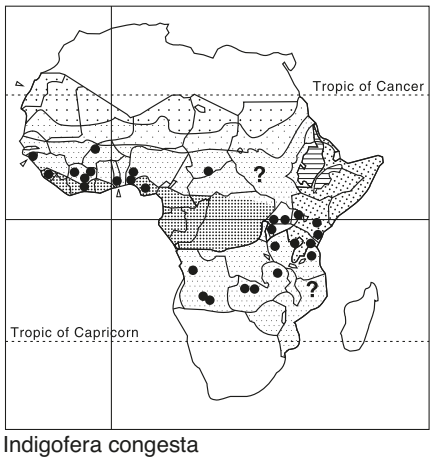
Indigofera colutea



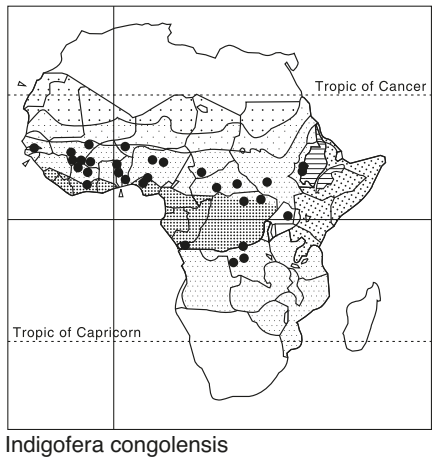
Indigofera concinna



Indigofera conferta



Indigofera congesta



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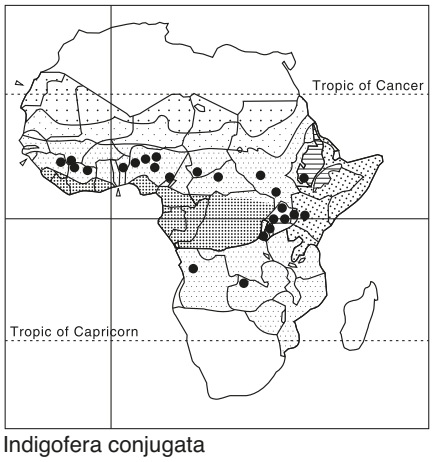

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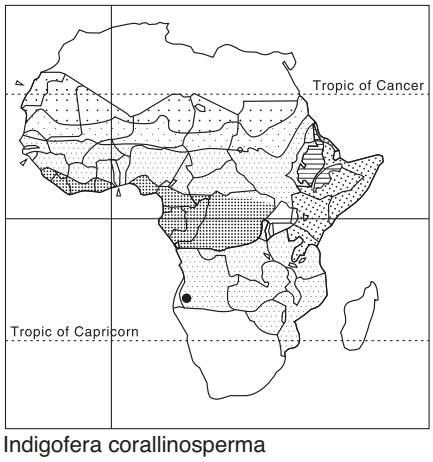
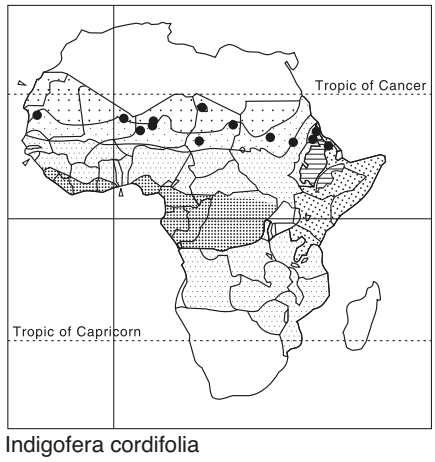


Indigofera corallinosperma



Indigofera cordifolia

I. daleoides Benth. ex Harv.

Perennial herb with ± prostrate stems, terete, subsimple or branched near the base, densely covered with white hairs ; branches flexuous ; rootstock many-headed.

Sea-sands at the mouth of river (Angola : var. **gossweileri)**.

Namibia, Botswana, S. Africa.

Comprises 2 vars.: – var. **daleoides** (syn.: *I. dodecaphylla* Ficalho & Hiern ; *I. daleoides* var. *dammarensis* Bak. f.) ; – var. **gossweileri** Bak. f. (syn.: *I. hololeuca* Benth. ex Harv. var. *angolensis* Bak. f.).

I. dasyantha Bak. f. var. **dasyantha,** *excl.* specim. Milne-Redh. & Taylor 9792 (= *I. nyassica)*, *excl.* var. *brevior* J. B. Gillett, nom. non rite publ. (= *I. nyassica* var. *brevior)*, *excl.* var. *viscidior* J. B. Gillett (= *I. nyassica* var. *viscidior* (J. B. Gillett) J. B. Gillett (vide Kew Bull. 24 : 497-498, 1970). – Type : A. Whyte s.n., Malawi : Kondowe to Karonga, p.p.

Probably perennial plant with erect, striate stems ; calyx-lobes linear-lanceolate, almost as long as the stamens and pods without multi-cellular glandular hairs.

Ecology unknown ; alt. to ?1830 m.

Only known from the type.

I. dasycephala Bak. f.

Straggling herb ; stems perennial, erect, pubescent ; fruit unknown.

Ecology unknown.

I. dauensis J. B. Gillett

Spreading strigose herb, annual or short-lived perennial, with decumbent branches to 25 cm long.

Acacia-Commiphora open bushland on limestone soils ; 150-850 m alt.

Probably different from **I. kelleri.** Not in Somalia (= **I. gypsacea)**.

I. deflersii Bak. f.

Prostrate or decumbent herb with stems to 20 cm long.

Open deciduous bushland with *Acacia, Commiphora* on rocky slopes ; ± 500 m alt.

Collected twice : Arabia (Yemen, Hadramaut) in 1890 ; in Somalia ± 1990.

Related to **I. spiniflora** Boiss. – A specimen from Eritrea is probably near **I. deflersii** (See Opera Bot. 68 : 95, 1983).

I. deightonii J. B. Gillett

Weak spreading herb, to 45-50 cm long, forming a carpet or large clumps.

Waste places on a farm ; along pathsides ; rock outcrops ; on a rock among grasses and with *Ipomoea, Tephrosia, Hibiscus ;* sandy soil beside road ; flood plain ; in long grass on sandy plain ; sometimes in shade ; humid meadow ; 30-1200 m alt.

Comprises 2 vars.

I. delagoaensis Bak. f. ex J. B. Gillett

Prostrate or semi-prostrate perennial herb ; branches with dense medifixed, crisped hairs and multicellular, glandular, erect, short ± sparse hairs.

Along hills ; sandy soil ; *Acacia* forest ; sometimes abundant or very frequent ; 30-60 m alt.

The Zimbabwean specimens may represent a distinct taxon (not mapped).

I. dembianensis (Chiov.) J. B. Gillett

Erect or spreading annual herb to 25 cm tall, appressed strigose and in most parts also with erect multicellular glandular hairs.

Poor grassland ; hillsides ; ± 1500-2000 m alt.

I. demissa Taub.

Procumbent annual, or perhaps sometimes perennial herb ; forming dense mats 10-100 cm Ø ; hairs biramous, fine, appressed, on slender stems much branched, radiating from the central rootstock.

Open places such as pathsides ; sandy soil ; also ruderal ; 0-2600 m alt.

Namibia ; Madagascar.

I. dendroides Jacq.

syn.: *I. multijuga* Bak. ; *I. palustris* Vatke ; *I. sesbaniifolia* A. Chev. ; *I. dalabaca* A. Chev., nom. ; *I. kengeleensis* De Wild. ; *I. gilletii* De Wild. & Th. Durand

Elegant, erect, wiry, ± branched annual herb 0,2-1,5 m tall ; sparsely appressed strigulose ; hairs often brown, especially on the inflorescence ; branches slender, branchlets rather patent ; general appearence of a *Phyllanthus.*

Grassland ; cultivated ground ; seasonal swamps and flood plains ; scrub ; sparingly grassy slopes ; pathsides ; savanna ; neglected *Cedrela* plantation with regenerating mixed woodland with *Combretum collinum, Stereospermum kunthianum, Acacia hockii, Albizia grandibracteata ;* wooded hollow with sand on hard-pan ; sand dune ; sandstone screes ; clayey soil ; gravelly places ; 0-1500 m alt.

Morphological variation considerable.

I. desertorum Torre

Prostrate shrublet ; stems 30-50 cm long, glabrous ; bark ± brown, longitudinally fissured ; young branches densely clothed with white appressed hairs ; fruit unknown.

Desert.

Only known from the type collected in 1956.

I. dimidiata Vogel ex Walp., incl. var. *laxior* Bak. f.

Slender, perennial herb, herbaceous, decumbent, very sparsely strigillose ; stems subsimple, 30-60 cm long.

Probably in grassland ; 2100-2200 m alt.

S. Africa.

Very distinct from all other tropical African *Indigofera* by the almost glabrous corolla.

I. diphylla Vent.

Semi-woody, spreading or hoary erect grey herb 30-60 cm tall ; leaflets 2 very unequal-sized.

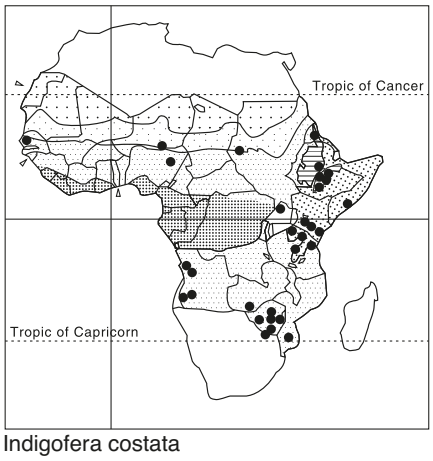
Sandy ground ; sand ; its presence is a sign of degradation of the soil ; sand-dune area with *Aristida mutabilis.*

I. dissitiflora Bak.

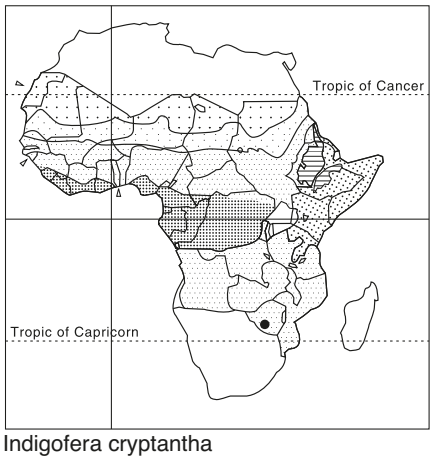
Plant with erect, woody stem with copious, very slender erecto-patent branches (shrubby habit), sparingly appressed strigose.

Grassland, on sandy soil in secondary deciduous woodland ; 1100-1500 m alt.

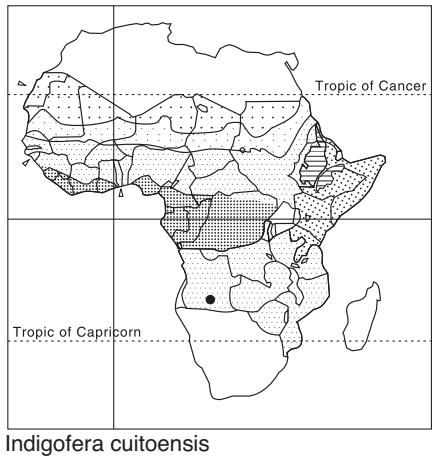
Perhaps not different from **I. tenuis.**



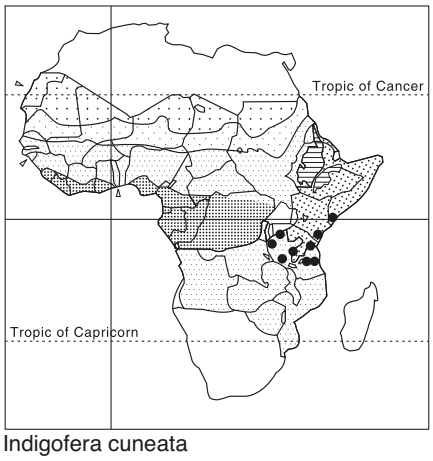
Indigofera costata



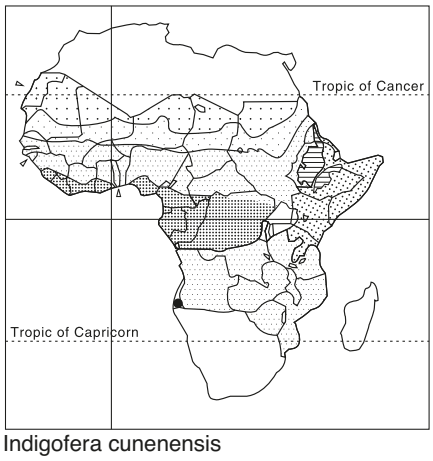
Indigofera cryptantha



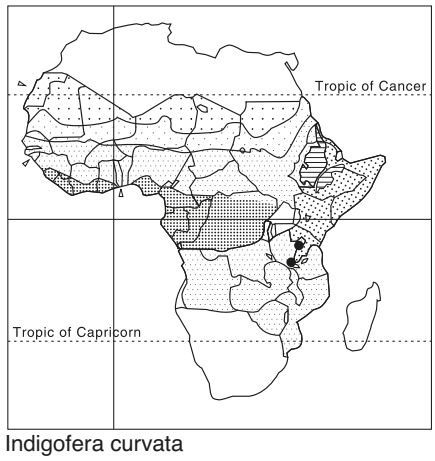
Indigofera cuitoensis



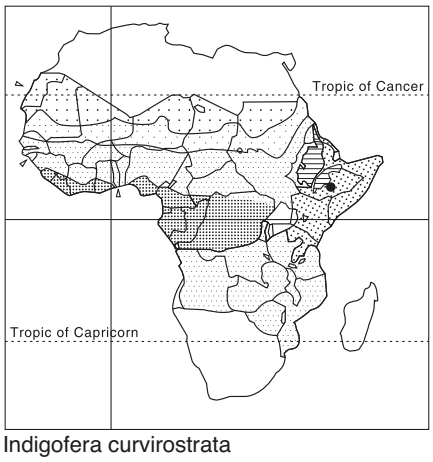
Indigofera cuneata



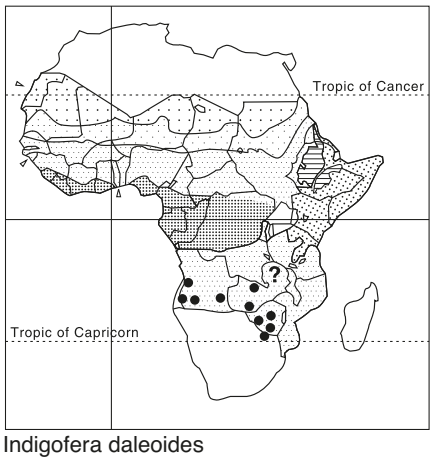
Indigofera cunenensis



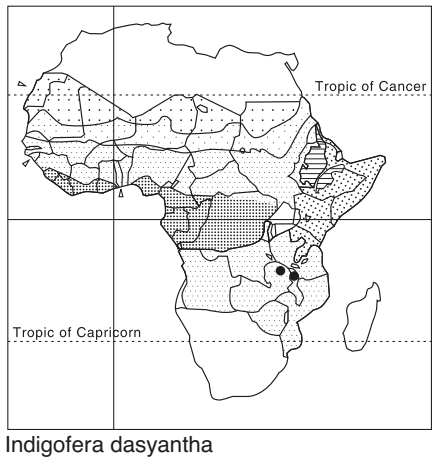
Indigofera curvata



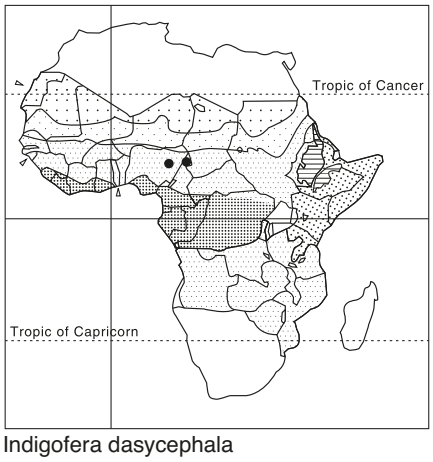
Indigofera curvirostrata



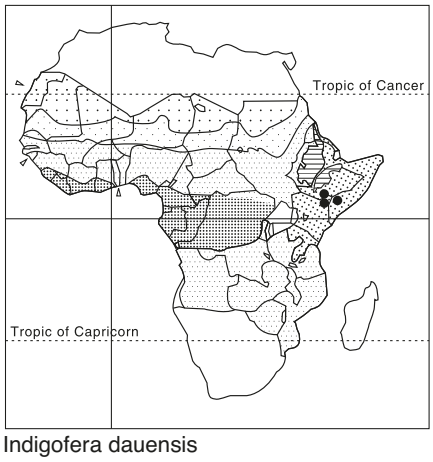
Indigofera daleoides



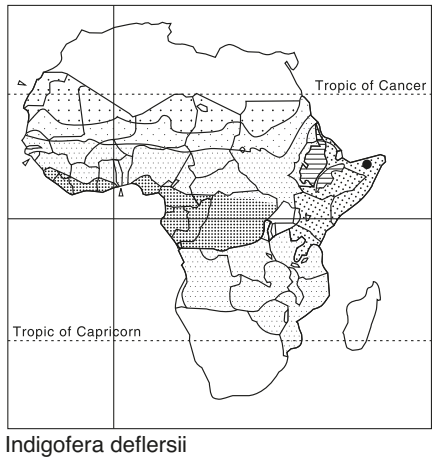
Indigofera dasyantha



Indigofera dasycephala



Indigofera dauensis



Indigofera deflersii

I. drepanocarpa Taub.

syn.: *I. erythrogrammoides* De Wild.

± Procumbent perennial herb, sometimes rooting at the nodes and forming a mat; much resembling *I. nummulariifolia;* stems 40-80 cm long, subcylindrical to quadrangular.

Open places; savannas; dry places, sandy or rocky; 400-1650 m alt.

Variation considerable.

I. dyeri Britten

syn.: *I. macra* Bak. 1897, non E. Mey. 1836 (= *I. costata); I. nematopoda* Bak. f.

Annual, erect branching herb to 30 cm tall; stems slender, covered with ± appressed white biramous hairs, and usually also having a few rather long erect multicellular hairs.

Granite rocks; mixed *Acacia* woodland; fallow field; bare soil by stream; sandy soil at roadside in *Colophospermum mopane* woodland; weed of sandy ridge gardens, gregarious; rocky soils; moist depression in mopane woodland; sometimes common in colonies; 0-1500 m alt.

S. Africa.

Polymorphic with 4 vars.

I. elliotii J. B. Gillett

Softly woody bushy parennial herb 1-1,5 m tall.

Offshore bar.

I. elwakensis J. B. Gillett

Perennial herb with a woody corky-barked base and procumbent pubescent branches to ± 30 cm long.

Acacia-Commiphora open bushland; 250-400 m alt.

I. emarginella Steud. ex A. Rich.; Schrire in Kew Bull. 53 : 660, 1998.

syn.: *I. coluteifolia* Jaub. & Spach, nom. superfl.; *I. cameronii* Bak.; *Crotalaria emarginella* De Wild.

Softly woody shrub 0,25-1-2 (-4) m tall; stems ribbed, minutely brown strigulose or puberulent, usually ascending, almost unbranching from a perennial base at ground level. General aspect of *Amorpha (Fabaceae).*

Grassland; *Brachystegia* woodland; forest margins; savannas; *Loudetia arundinacea* grassland with scattered trees; *Acacia abyssinica* woodland; red sandstone and loam soils; rather thick undergrowth in gorge; open bush and open woodland; with *Protea* and *Thymelaeaceae;* streambanks, seasonally wet areas or rocky outcrops, on laterite, sand or gravel, sometimes at termite mounds; 100-2130 m alt.

Comprises 3 vars.: – var. **emarginella;** – var. **longifoliolata** ("longefoliolata") J. B. Gillett (endemic to Mbale area, Zambia, open woodland or bush among grass, c. 1400-1500 m alt.); – var. **marrupaensis** Schrire l.c. (only one collection known, Mozambique, Niassa, degraded *Brachystegia* woodland, c. 700-900 m alt.; with *long racemes,* 6-14 cm, twice as long as leaves, densely *60-110-flowered, bracts long lanceolate-acuminate.*

I. emarginelloides J. B. Gillett

Shrub 0,3-1 m tall; old branches with grey bark; floriferous stems usually less than 1 mm wide, not or hardly ridged, usually short shoots from an older stem; dark buds of next year's shoots obvious in fruiting specimens.

Plateau woodland; rocky gorge clothed with *Burttia, Brachystegia holstii,* etc.; red soil; *Brachystegia* woodland on sand; Kalahari sand woodland transitional to *Hyphaene* flats; rocky hillsides; streambanks; bush among grass; 700-1800 m alt.

I. eremophila Thulin

Slender shrublet to 50 cm tall, silvery strigose with appressed or somewhat spreading hairs; older stems becoming purplish brown; mature pods and seeds known!

Open plains with sparsely scattered *Acacia;* ground cover dominated by small shrublets; on the type locality (35 km S of Geladi, Ethiopia) *I. eremophila* forms a high proportion of coverage with *I. ogadensis* another endemic of this area; *Acacia-Commiphora* bushland on sandy soils; semi-desert scrub; ± coastal dunes; 5-550 m alt.

Variable species.

I. erythrogramma Welw. ex Bak., incl. var. *pauciflora* Bak. f. & Martin ex De Wild.

Annual or sometimes perennial herb with a taproot and ± procumbent branches; stems to 1,5-2 mm Ø, copiously branched 15-50 cm long, clothed with short spreading grey pubescence; flowers splendidly scarlet-red.

Sands desintegrated from a red conglomerate; plains; savannas; hilly sandy places; forest margins; damp meadows; sometimes frequent; deciduous or dry evergreen woodland, especially on rocky ground; 240-900 m alt.

I. exellii Torre

Annual, very ramose herb with subangular stems, diffuse, procumbent, ± 5 cm long with appressed hairs.

Ecology unknown (? savanna).

Only known from the type collected in 1937.

I. eylesiana J. B. Gillett

syn.: *I. sericea* Benth. ex Bak. fa. *australis* Bak. f.

Prostrate herb with slender stems to 1 mm Ø.

Sand.

Perhaps identical with *I. procumbens.*

I. fanshawei J. B. Gillett

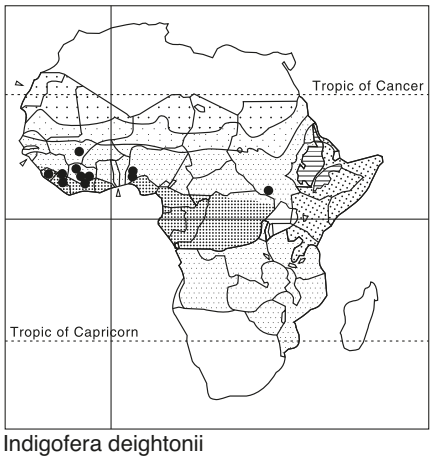
Thin, ramose herb, subwoody at the base, to ± 30 cm tall; branches green becoming black-brown with appressed rigid, flavescent hairs becoming white or blackish.

Plateau woodland; open woods amongst *Glumaceae;* open grass-grown *Julbernardia gossweileri* woods; 120 m alt.

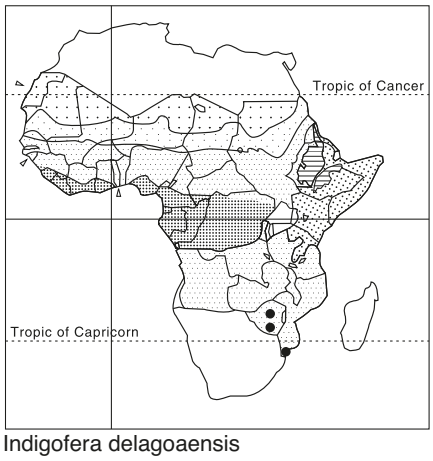
I. faulknerae J. B. Gillett

Annual herb with green, pilose, spreading and often decumbent stems, to 25 cm long.

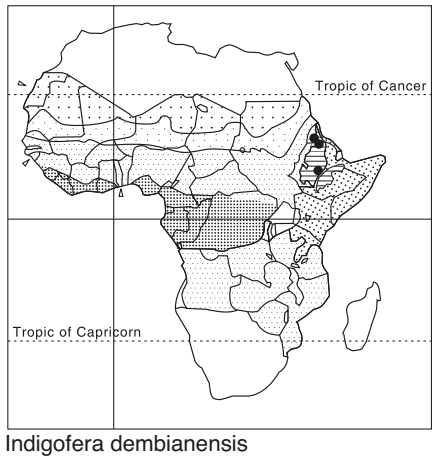
Edge of forest among grasses; stony slopes; ± 300 m alt.



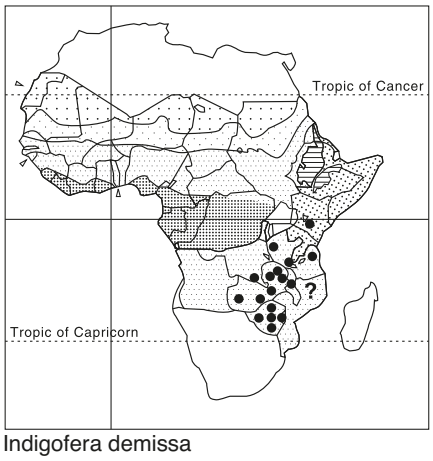
Indigofera deightonii



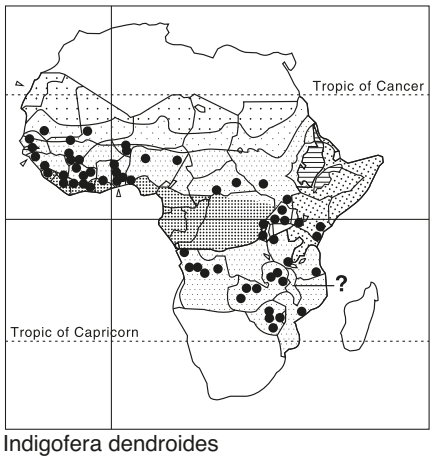
Indigofera delagoaensis



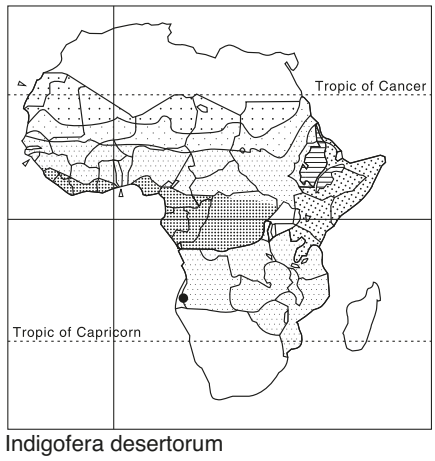
Indigofera dembianensis



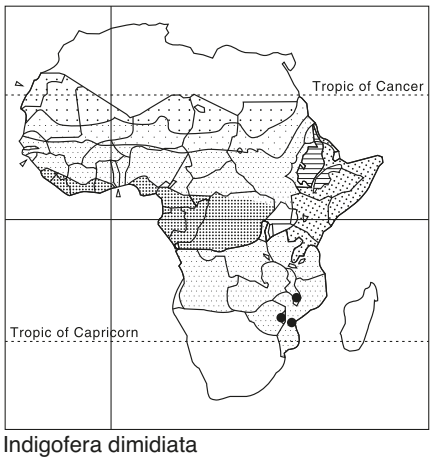
Indigofera demissa



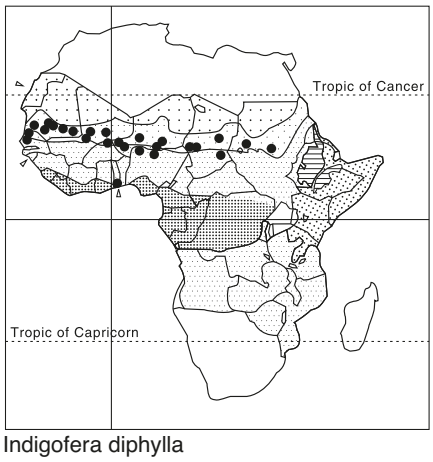
Indigofera dendroides



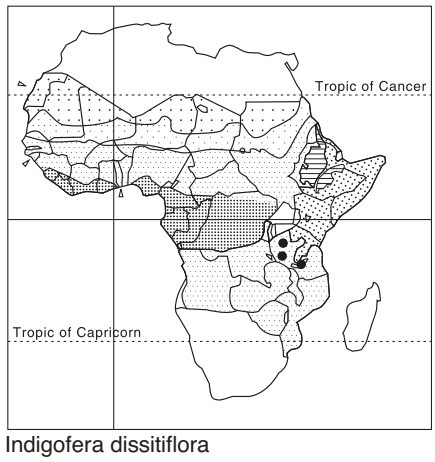
Indigofera desertorum



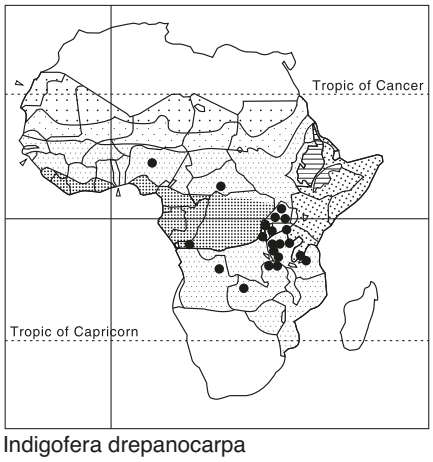
Indigofera dimidiata



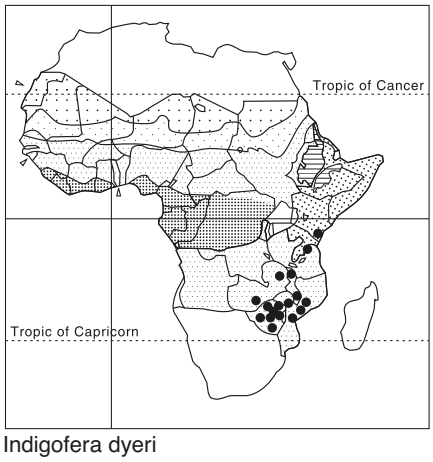
Indigofera diphylla



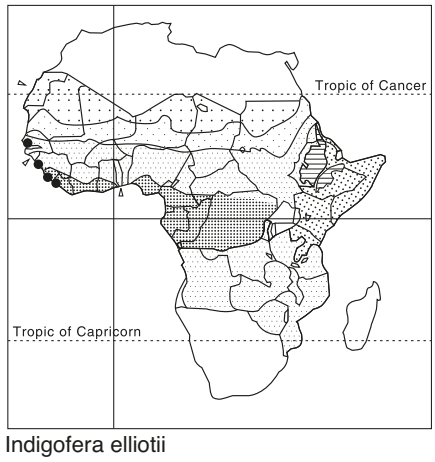
Indigofera dissitiflora



Indigofera drepanocarpa



Indigofera dyeri



Indigofera elliotii

I. filipes Benth. ex Harv. – Icon.: Fabian & Germishuizen, Wild Flow. N. S. Africa: 191, 1997.

Very slender, annual, erect, branching, thinly strigillose herb; with many angular and furrowed branches; to 30-45 cm tall.

Ecology unknown for Zimbabwe (sandy soils in grassland and open woodland in S. Africa).

Namibia, Botswana.

I. flavicans Bak.; Brown, Bull. Misc. Inf. Kew 1909: 102.

Perennial herb with herbaceous, subterete stems, densely clothed with spreading or deflexed yellowish-grey silky hairs; stems spreading, creeping over the soil.

Weed in cultivation; sand; 1250 m alt.

Namibia, Botswana; S. Africa.

I. fulgens Bak. subsp. **fulgens**

syn.: *I. longiflora* Taub.

Softly woody shrub to 3 m tall; stems often slightly zigzag, velvety-pubescent at first, then glabrescent.

Thickets on sandy soils; 0-500 m alt.

The subsp. **brachybotrys** (Bak.) J. B. Gillett occurs in Madagascar.

I. fulvopilosa Brenan

syn.: *I. pilosa* Poir. var. *multiflora* Bak. f.

Erect or prostrate branching annual or short-lived perennial herb 0,3-1 m tall from a taproot, covered with long hairs, which are mostly brownish and erect but white and ± appressed on the leaf-surfaces.

Roadsides; grassland; forest margins; land regenerating after cultivation; thalweg at edge of forest gallery; big rocky scree, in deep shade; *Brachystegia* woodland savannas; 900 (? and less)-1700 m alt.

I. fuscosetosa Bak.

Annual or short-lived perennial herb 0,3-0,8 m tall; with several decumbent to suberect stems, hispid-setulose with brown hairs.

Open- or wooded grassland; 1400-2135 m alt.

I. gairdnerae Hutch. ex Bak. f. (description totally inadequate!).

Annual herb to 20 cm tall with slender, yellow, spreading branches; ripe fruit unknown.

Island in the flooded Zambesi.

Only known from the type.

I. garckeana Vatke

Softly woody shrub 1-3 m tall, but sometimes flowering on much shorter coppiced shoots; stems 3-4-angled or winged, strigulose or pubescent.

Scattered-trees grassland; deciduous, *Brachystegia* woodland; wooded savanna or open forest on sand; under light shade on tamped soil; bushland; 550-1950 m alt.

Very near **I. binderi.**

I. geminata Bak.

Semiwoody or herbaceous, branching, erect annual herb 20-40 cm tall.

Lateritic hard-pan; grassy savanna; hollow; river banks.

Confused with *I. congolensis.*

Not in Ethiopia (= *I. brevicalyx)*.

I. glaucifolia Cronquist

? Shrub or woody herb, ± 0,75 m tall with strigulose white branches; fruit known!

Pasture; edge of evergreen shrubs, in shade.

I. gloriosa Cronquist

Perennial plant with woody and stout rhizome and many stems, ± 30 cm tall, hispid-spreading with brown hairs; fruit unknown.

Ecology unknown.

Only known from the type collected in 1930.

I. graniticola J. B. Gillett

Annual herb with greenish or reddish branches, which are shortly white pubescent and also carry long straight spreading hairs; ripe fruit unknown.

Shallow soil in crevices of granite rocks; 900 m alt.

I. griseoides Harms

Branching wiry shrublet or woody annual 0,2-0,5 m tall, softly pubescent but hairs rather stiff and more appressed on upper leaf-surface.

Sandy soils in *Brachystegia* woodland; locally common; 1200-1700 m alt.

Not in Somalia (= *I. colutea)*.

I. guerrana Torre

syn.: *Indigastrum guerranum* (Torre) Schrire

Annual herb, very ramose with stem ± 25 cm long, branches subprostrate with appressed hairs.

Hollow in desert.

Namibia.

I. gypsacea Thulin

syn.: *I. dauensis* sensu Thulin, Nord. J. Bot. 8: 468, 1988 quoad specim. Thulin & Warfa 4639, non J. B. Gillett

Perennial herb, apparently fairly short-lived; stems prostrate, to 50 cm long, appressed strigose, sometimes angular.

Usually in open *Acacia-Commiphora* bushland, on gypsum, with *Crotalaria linearifolia,* another species with exactly the same regional disjunct distribution in two areas at ± 450 kms' distance; 140-200 m alt.

Confused with **I. dauensis.**

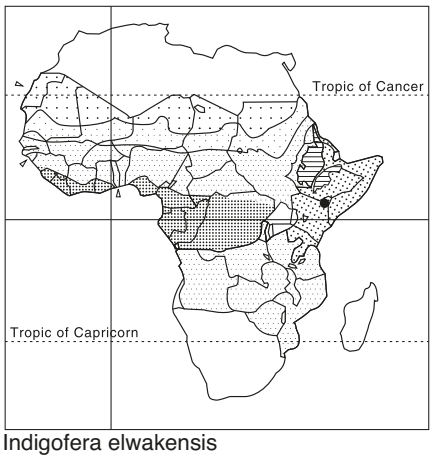
I. hedyantha Eckl. & Zeyh.

syn.: *I. goetzei* Harms; *I. inyangana* N. E. Br.

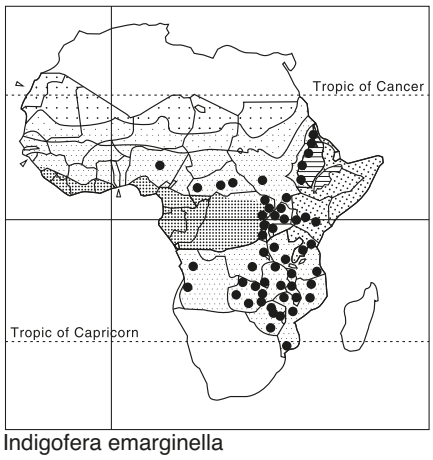
Perennial herb, that grows in little tufts, densely branched from the base, branches angular-furrowed with brown bark, 30-150 cm tall; sweet-scented; rather woody herb from a taproot; rather densely covered with short appressed white, brown or black hairs.

Grassland; 1400-2600 m alt.

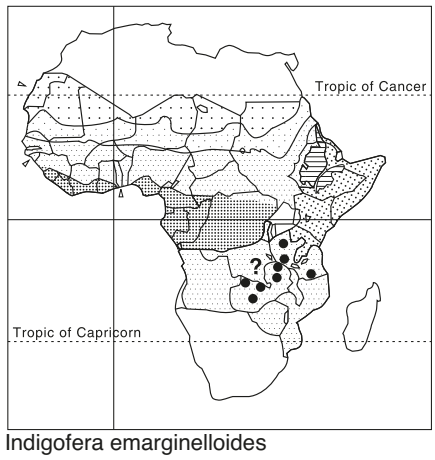
Most attractive: corolla splendid, deep crimson, densely covered outside with mainly golden-brown appressed hairs; pods dark, black strigulose; would look lovely in the garden.



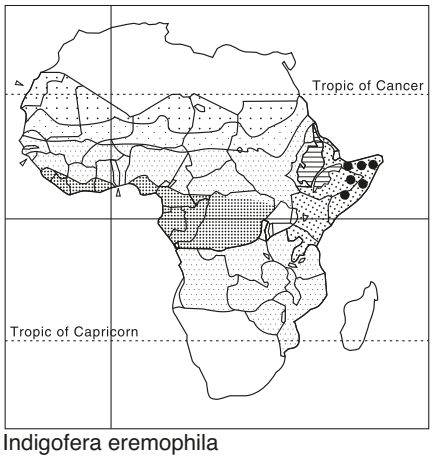
Indigofera elwakensis



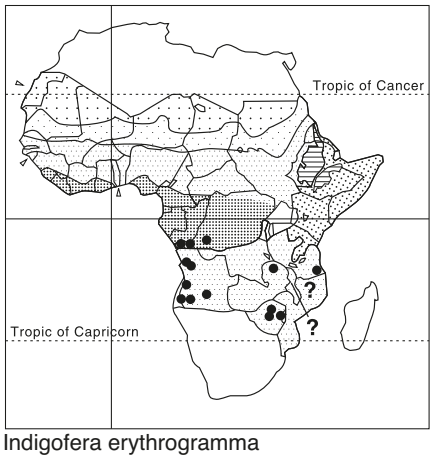
Indigofera emarginella



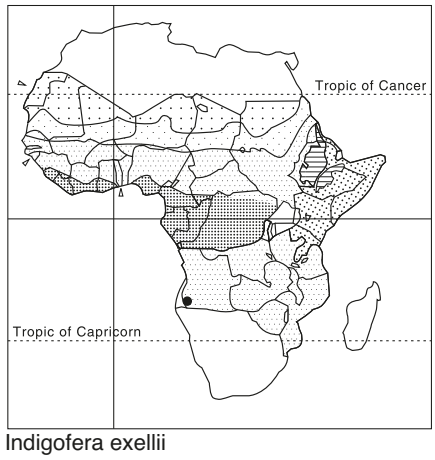
Indigofera emarginelloides



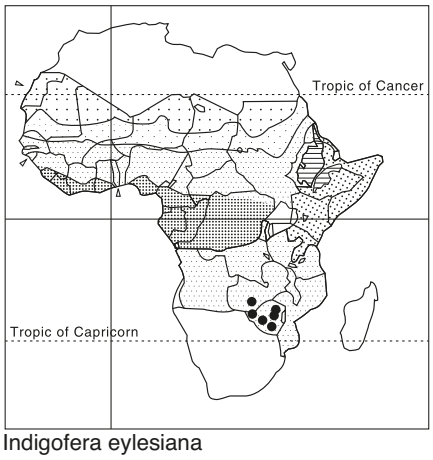
Indigofera eremophila



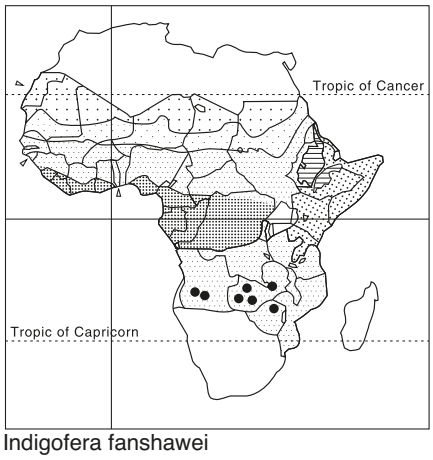
Indigofera erythrogramma



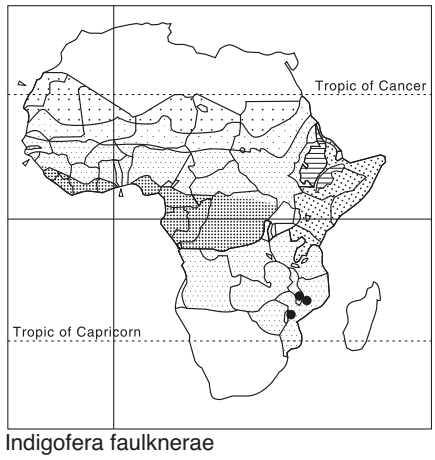
Indigofera exellii



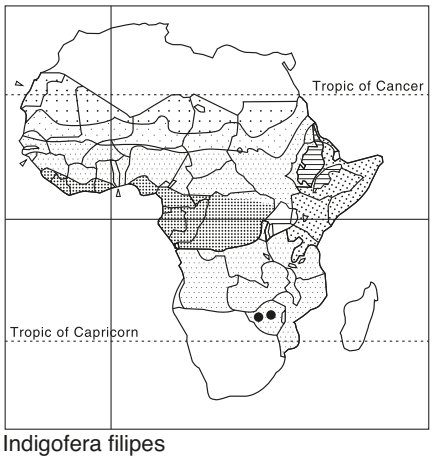
Indigofera eylesiana



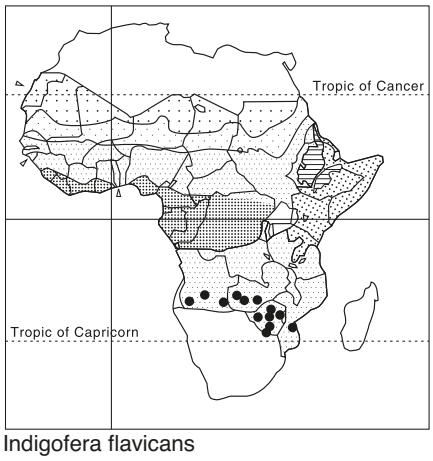
Indigofera fanshawei



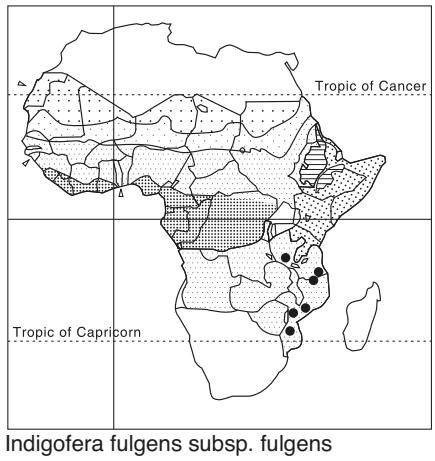
Indigofera faulknerae



Indigofera filipes



Indigofera flavicans



Indigofera fulgens subsp. fulgens

INDIGOFERA

I. hendecaphylla Jacq., incl. var. *angusta* Harvey ; Kew Bull. 48 : 727-733, 1993.

syn.: *I. "endecaphylla"* sensu Poiret et sensu auct. mult., sphalm.; *I. anceps* Vahl ex Poir.; *I. onobrychioides* Boiv. ex Baill.; *I. pectinata* Bak.; *I. bolusii* N. E. Br.; *I. spicata* sensu auct. mult., p.p. *excl. I. spicata* Forssk. sensu stricto.

Prostrate or ascending herb with a thick perennial rootstock ; stems ridged, somewhat flattened, sparingly strigulose, radiating from the central rootstock.

Disturbed grassland ; cultivated areas and waste places ; common ; 0-2700 m alt.

Very variable.

Africa, Madagascar, Mascarenes ; Middle East, S and SE Asia, Malesia and Pacific Islands. – Introduced in the New World.

Confused with **I. spicata** (See key in Kew Bull. 48 : 727, 1993).

Mapped fide selected specimens cited in Kew Bull., l.c.

I. hermannioides J. B. Gillett

Perennial herb with a woody rootstock and stout stems, reddish, hispid, erect or spreading, to 40 cm long.

Brachystegia-Uapaca woodland on red sandy soil ; 900-1050 m alt.

I. heterotricha DC., incl. var. *rhodesiana* Bak. f.

syn.: *I. rudis* N. E. Br.

Woody shrub, erect with stem, branches and peduncles densely set with horizontal, rigid, gland-tipped bristles ; stems numerous, subsimple or branched from below, rigid, 15-30(-? 100) cm tall ; stems or branches 3 mm or more Ø, the older ones brown and glabrous.

Ecology unknown in tropical Africa (? river bed or banks).

Namibia, S. Africa, Botswana.

I. heudelotii Benth. ex Bak. emend. J. B. Gillett ; excl. var. *elliottii* Bak. f. (= *I. elliotii)*.

syn.: *I. sofa* Scott-Elliot ; *I. djalonica* A. Chev. ex Hutch. & Dalziel 1928, non ex Bak. f. 1926.

Erect, branched, softly woody plant, to 1-2 m tall or more.

Margins of evergreen forest ; humid places ; marigot ; 1000-1300 m alt.

Comprises 2 vars.

I. hewittii Bak. f.

Suberect, slender, annual herb ± 25 cm tall, with slender glandular peduncles, few-flowered ; root fusiform, short, weak, slightly and shortly ramose ; stem generally ramose from the base, rounded, with dense medifixed hairs and simple, glandular ones horizontally spreading. – Cf. *I. colutea.*

Roadside ; vlei and veldt on granite quartzite soil ; 1220 m alt.

I. hilaris Eckl. & Zeyh.; Kew Bull. 24 : 476, 1970.

syn.: *I. patula* Bak.; *I. wentzeliana* Harms ; *I. moeroensis* De Wild.; *I. zigzag* De Wild.; *I. hockii* De Wild. & Bak. f.; *I. similis* N. E. Br.; *I. hybrida* N. E. Br.

Perennial, usually flowering after a fire, with a woody rootstock and several decumbent or weakly ascending stems 10-40 cm long ; stems sparsely appressed strigose with rather long (to 0,9 mm) biramous hairs ; long erect glandular or eglandular multicellular hairs are usually also present.

Grassland ; savannas ; cultivations ; 600-2200 m alt.

INDIGOFERA HILARIS

Very variable : comprising 2 vars. Plants flowering after a fire differ greatly in aspect from those which have escaped burning for two or more years.

S. Africa.

I. hiranensis Thulin

Shrub to ± 1,2 m tall with young stems fairly densely appressed pubescent ; old stems glabrescent, pale greyish brown.

Limestone (? or sandstone) escarpment ; locally frequent in *Acacia-Commiphora* bushland ; 200-300 m alt.

I. hirsuta L., *excl.* var. *polystachya* Welw. ex Bak. (= *I. longibarbata)*.

syn.: *I. lateritia* Willd., non A. Chev. nec Bertol.; *I. ferruginea* Schumach. & Thonn.; *I. fusca* G. Don

Erect or spreading annual or short-lived perennial herb 0,25-1,5 m tall ; stems ramose ; cylindrical or slightly ridged, stiffly brownish or, occasionally, white pilose ; sometimes with a thick, woody, many-headed rootstock and stems much branched from the base ; mature fruits unknown (var. **pumila** Welw. ex Bak.).

Weed of cultivated and waste places ; grassy formations ; roadsides ; humid or temporarily humid sandy soils ; stony shortly-bushy pastures ; 0-1350 m alt.

Cape Verde Isl.; Botswana ; Madagascar ; Sri Lanka, India, Burma, Indochina, Phillipines, New Guinea, N Australia ; Trop. America (probably introduced). – The range has certainly been increased by man (grown as a cover-crop, green manure, forage).

Comprises 2 vars.

Often confused with *I. astragalina.*

I. hochstetteri Bak. subsp. **hochstetteri** – Cortés-Burns & al. (2004) : 703.

syn.: *I. ornithopodioides* Hochst. & Steud. ex Jaub. & Spach 1856, non Schumach. & Thonn. 1829 (1827 ?); *I. anabaptista* Steud. ex Bak.; *I. jaubertiana* Schweinf.; *I. arenaria* A. Rich. 1847, non E. Mey. 1836 (= *I. alternans); I. semhaensis* Vierh. p.p.

Spreading annual strigose herb 10-60 cm tall, with ridged stems ramose from the base ; sometimes weakly ascendent.

Grassy savannas ; open grassland ; hard-pan ; sandy-clayey hollow, temporarily humid ; sand ; 0-2600 m alt.

Socotra, Arabia, Pakistan, India. – Subsp. **streyana** (Merxm.) A. Schreib. in Namibia.

No specimen collected in East Africa before 1926.

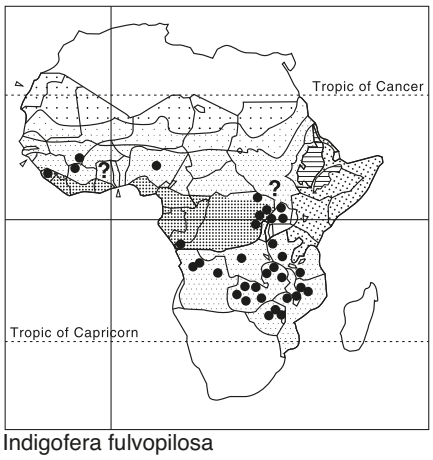
I. hofmanniana Schinz ; Schrire in Kew Bull. 53 : 666, 1998.

syn.: *I. suffruticosa* sensu J. B. Gillett, Kew Bull. Add. Ser. 1: 105, 1958, non Mill.; *I. cryptantha* sensu A. Schreib., Fl. SW Afr. 60 : 54, 1970, non Benth. ex Harv.

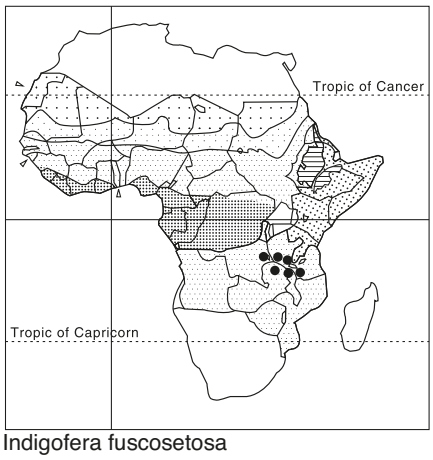
Erect annual to perennial woody herb 1-2 m tall, similar to (and often confused with) *I. suffruticosa* and *I. tinctoria,* but size of leaflets and shape of pods different.

Acacia woodland, alluvial sand in pans and riverbeds ; 700-1000 m alt.

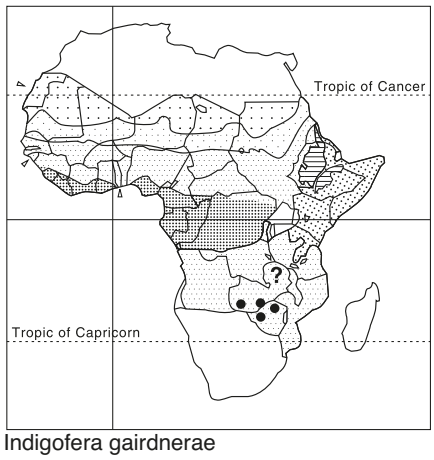
Botswana (N), Namibia (Kaokoveld, Etosha).



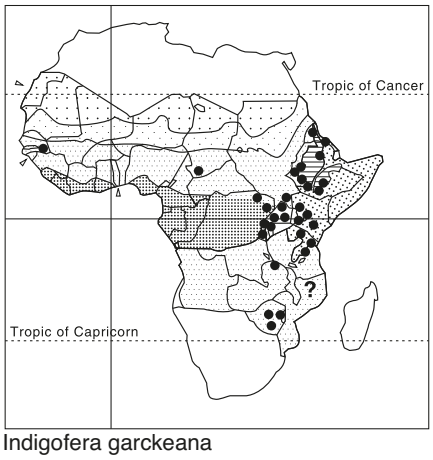
Indigofera fulvopilosa



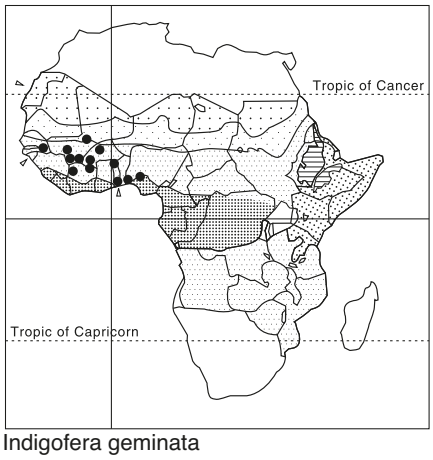
Indigofera fuscosetosa



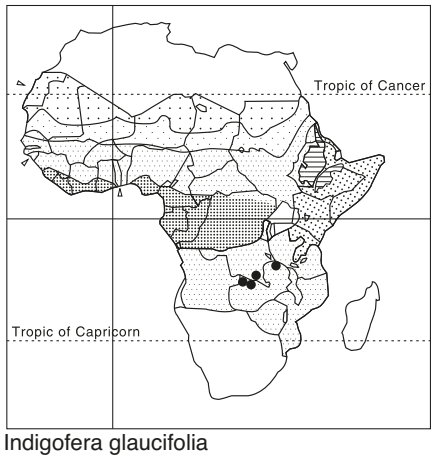
Indigofera gairdnerae



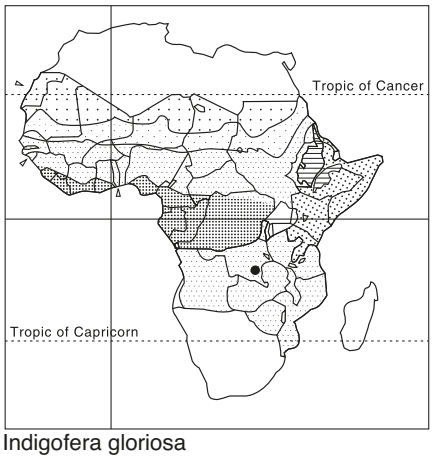
Indigofera garckeana



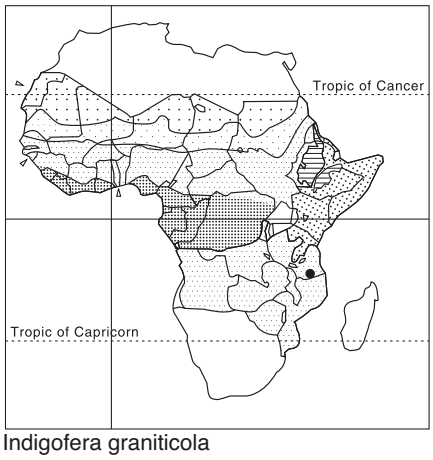
Indigofera geminata



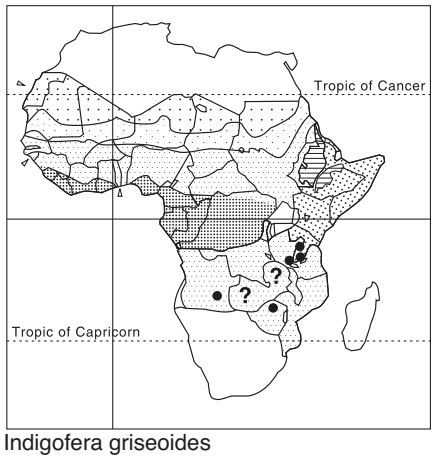
Indigofera glaucifolia



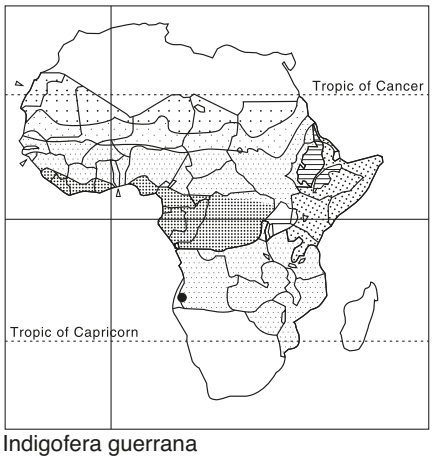
Indigofera gloriosa



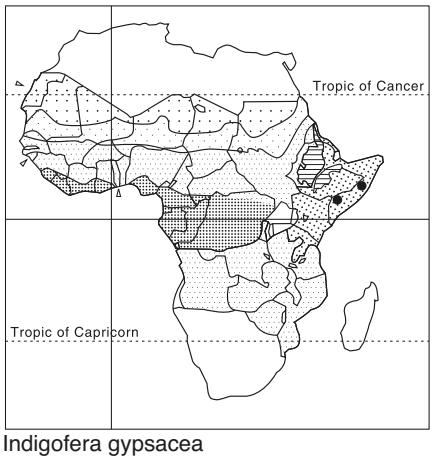
Indigofera graniticola



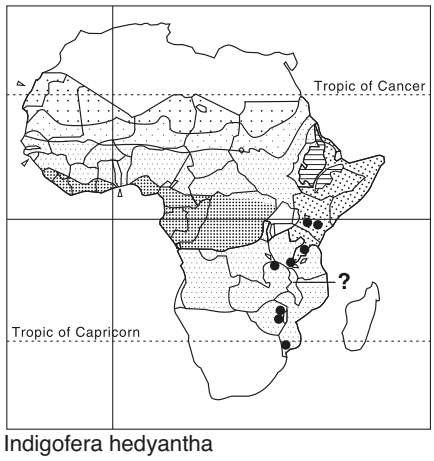
Indigofera griseoides



Indigofera guerrana



Indigofera gypsacea



Indigofera hedyantha

I. holubii N. E. Br. – Icon.: Fabian & Germishuizen, Wild Flow. North. S. Afr.: 191, 1997.

Semi-prostrate annual or perennial herb 10-15 cm tall or perhaps taller, branching at the base ; stems 1 mm Ø, green, sprinkled with appressed medifixed hairs.

Ecology unknown in Zimbabwe ; 600 m alt. Sandy flats in open woodland in NW S. Africa.

Namibia, Botswana.

I. homblei Bak. f. & Martin, excl. subsp. *longiflora* J. B. Gillett (= *I. longistaminata)*.

Shrub or perhaps softly woody perennial herb, 1-2,5 m tall ; branches strongly 3-4-angled, sometimes narrowly winged, tough, sparingly strigulose or, less often, brown pubescent.

Savannas ; upland grassland ; *Brachystegia* woodland, evergreen forest or scrub margins ; sometimes at streambanks or ant-hills ; 1200-2750 m alt.

Confused with *I. garckeana.*

I. huillensis Bak. f.

Shrub 60-90 cm tall with virgate branches.

Ecology unknown (? open deciduous forest) ; 250-1830 m alt.

Not in Gillett's revision of 1958 ; very near *I. suaveolens* or *I. vohemarensis.*

I. hundtii Rossberg

Plant with prostrate or ? ascendent stem, compressed or slightly 4-angled, shortly appressed pubescent ; fruit unknown.

Open *Acacia* forest and on tracks ; 1600-1700 m alt.

From the same area as **I. taruffiana.**

I. inhambanensis Klotzsch

syn.: *I. polycarpa* Benth. ex Harv. 1862, non Willd. ex Spreng. 1826.

Shrublet, densely clothed with pale tomentum, mixed with longer, soft hairs, much-branched, to >30 cm tall, erect, slightly stiff ; branches rounded.

Ecology unknown.

S. Africa, Namibia.

I. ischnoclada Harms

Delicate branching annual herb to ± 25 cm tall ; stems cylindrical, almost glabrous.

Deciduous woodland on sand ; weed in old gardens ; sandy dry forest ± 400 m alt.

I. karkarensis Thulin

Much-branched shrublet ± 40-60 cm tall ; young stems somewhat angular, completely covered by appressed silvery hairs ; old stems grey ; rhachis of the inflorescence becoming stiff and slightly spinulose ; ripe seeds unknown.

Limestone in a sparse vegetation of *Acacia, Commiphora, Boswellia sacra* and scattered *Mimusops angel ;* also *Dactyloctenium robecchii, Chrysopogon aucheri* at the type locality (8°53 N, 49°27 E, Somalia).

Better material, in both flower and fruit, is wanted (first collection in 1980).

I. kelleri Bak. f.

Shrublet to 70 cm tall, with densely white strigose branchlets ; pods known !

Acacia-Commiphora bushland in limestone area ; 200-1420 m alt.

Not conspecific with *I. danensis.*

I. kerstingii Harms

Prostrate herb with angular, compressed, flexuous, appressed pubescent stems.

Weed appressed to the soil ; on tracks and other smooth and waste places devoid of other vegetation.

I. kirkii Oliv.

syn.: *I. preladoi* Harms

Much-branched woody herb, prostrate or suberect, 0,3-1 m tall, with white-hirsute stems.

Sandy soil near sea-level.

Madagascar.

I. knoblecheri Kotschy – Icon.: Schweinfurth, Reliq. Kotsch.: pl. 15, 1868.

Shrubby herb with appressed hairs ; stems erect, woody, brown.

River banks ; occasional in *Combretum*-grass woodland.

I. kongwaensis J. B. Gillett

Spreading annual herb to 30 cm tall.

Commiphora, Acacia deciduous bushland ; sometimes in disturbed places ; 800-1000 m alt.

I. kuntzei Harms

Bushy perennial, very villous herb ± 50 cm tall with a large taproot.

Secondary grassland ; ± 50 m alt.

I. lamellata Thulin

Annual herb to ± 25 cm tall, often with spreading branches from near the base ; stems sparsely pubescent with appressed hairs, green, angular ; pods with lateral ridge of *8-12 transverse lamellae* on each side.

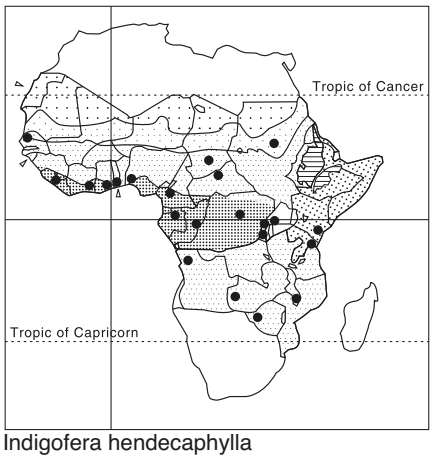
Acacia bushland in an area of silty greyish soil ; seepage area in crevices of granitic outcrop ; 230-250 m alt.

I. lasiantha Desv.

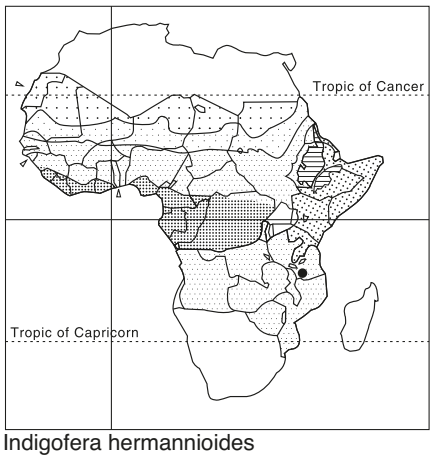
syn.: *I. psilostachya* Welw. ex Bak.

Very bright-green herb, 0,5-1,5 m tall with cylindrical primary stem ; branches and branchlets sub-compressed, angular, one or other angle almost winged ; the lower branches elongated, ascending ; fruit badly known ?

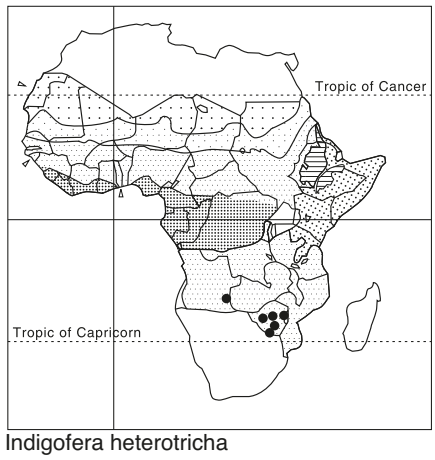
Moist wooded meadows along river ; gregarious in abandoned mandioca (*Manihot)* plantations ; bush or forest ; sometimes common ; 300-1700 m alt.



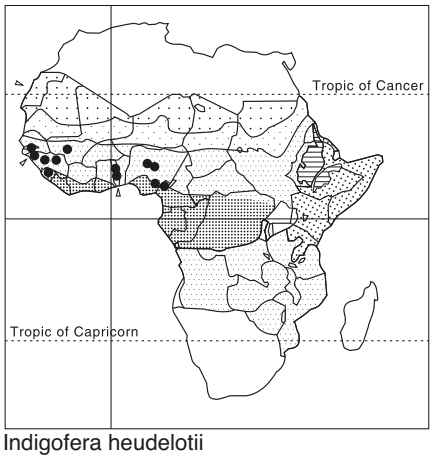
Indigofera hendecaphylla



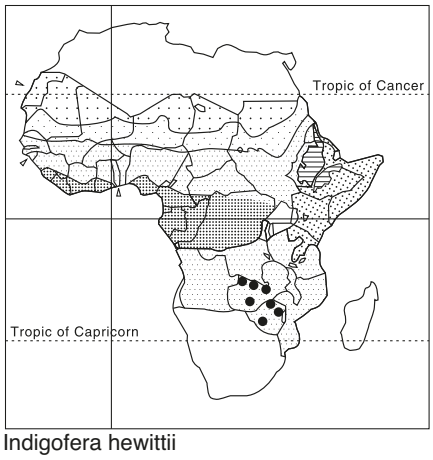
Indigofera hermannioides



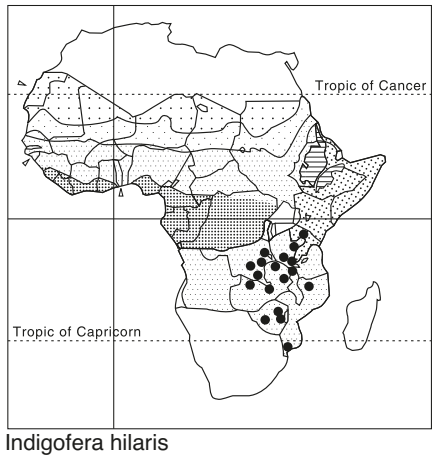
Indigofera heterotricha



Indigofera heudelotii



Indigofera hewittii



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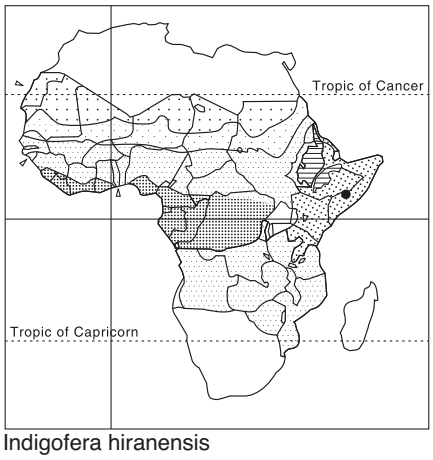

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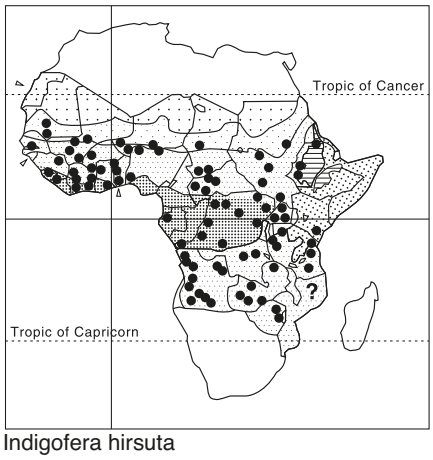

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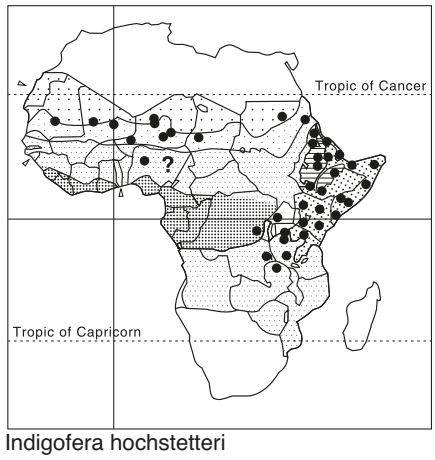

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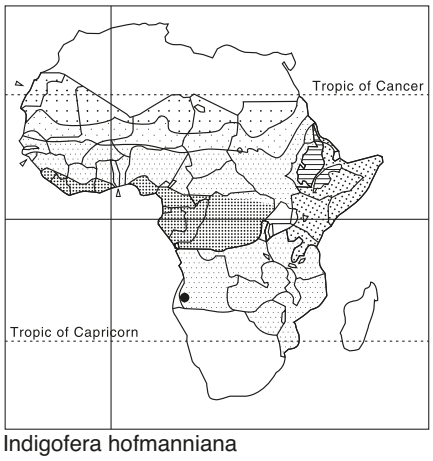

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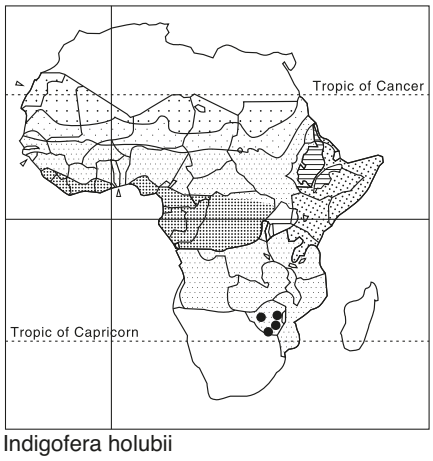
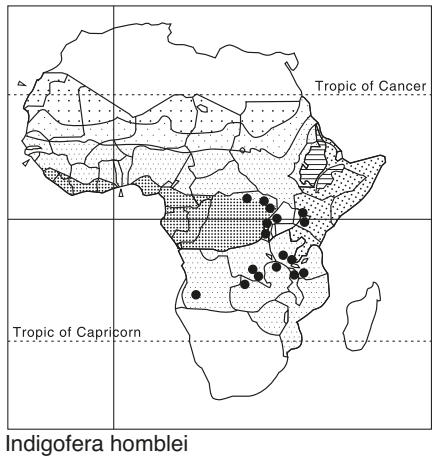


Indigofera holubii



Indigofera homblei

I. latisepala J. B. Gillett

Bushy herb with woody roots and stem to 35 cm tall, firm, erect ; branches cylindrical, spreading or erecto-patent, densely clothed with erecto-patent silvery pubescence with a tinge of brown ; ripe fruit unknown.

River banks (on the Niger, N Nigeria).

Only known from the type collected in 1854.

I. laxiracemosa Bak. f.

Spreading annual herb, somewhat woody at the base ; stems dark reddish, very sparsely appressed strigulose.

Sandy ground near sea.

S. Africa.

I. leprieurii Bak. f.

syn.: *I. macrocarpa* Lepr. ex Bak. 1871, non Desv. 1826.

Annual herb with erect, ramose, finely strigulose stem, 40-80 cm tall.

Sands, sandstone ; alluvial terrace along river ; bowal.

I. leptoclada Harms

Plant producing annual erect, herbaceous shoots 15-35 cm tall, arising in clump from a woody rootstock.

Lateritic ground ; wooded savanna ; sandy soil ; sometimes abundant.

I. letestui Tiss.

syn.: *I. mittuensis* Bak. f.

Erect bushy glandular herb with slender, strigose, subangular stems of two types : many tufts of floriferous stems 10-15 cm tall, and some leafy stems to 30 cm tall.

Laterite on plateau (bowal) with large *Poaceae,* some days after fire (burned savanna).

Flowers before leaves.

I. linifolia (L. f.) Retz.

bas.: *Hedysarum linifolium* L. f.

syn.: *Sphaeridiophorum linifolium* (L. f.) Desv.; *S. abyssinicum* Jaub. & Spach

Erect or prostrate, annual or perennial herb with many angular, silky stems from the base.

Dry grassland, bushland ; to 1500 m alt.

S Asia to China ; Australia.

I. livingstoniana J. B. Gillett

Shrub with subwoody branches and subscattered, subappressed short hairs. Forming a round clump 20-70 cm tall.

Sandy waste ground ; dry sandy loam in dambo ; Kalahari sands ; 100 m alt.

I. longibarbata Engl.

syn.: *I. hirsuta* L. var. *polystachya* Welw. ex Bak.; *I. schlechteri* Bak. f.; *I. griquana* Schltr. ex A. Zahlbr.

Slightly woody annual or short-lived perennial, erect, 0,3-1,5 m tall with reddish, slightly ridged, stiffly brown-black pilose, ± ramose stems.

Grassland ; bamboo thickets ; woodland ; sandy places along thickets ; roadsides, flooded ; wooded meadows with tall herbage ; sandy meadows by forests with *Protea, Eugenia ;* forest margins with *Crotalaria, Cracca, Ampelocissus ;* old cultivations ; red, ± humid soil ; 200-2550 m alt.

Very variable.

S. Africa.

I. longimucronata *("longemucronata")* Bak. f.

Spreading perennial herb, sometimes rooting at the nodes ; stems reddish with very few appressed hairs, often rather woody at the base.

Rocky outcrops ; sand in forests and coconut palm groves ; semi-evergreen bushland on pale reddish sand with occasional *Delonix* and *Terminalia ;* 0-350 m alt.

I. longipedicellata (" *longepedicellata* ") J. B. Gillett

Perennial herb with prostrate, subreddish, slightly angular branches ; with scattered white hairs and red glandular hairs ; ripe seeds unknown.

Summit ridge ; 2100-2520 m alt.

Closely related to *I. itremoensis* Du Puy & Labat (sect. *Psiloceratiae)* from Madagascar fide Gillett, but according to Du Puy & al. (Legum. Madag.: 497, 2002) the latter species is near *I. ankaratrensis* R. Vig. and *I. thymoides* Bak. (sect. *Planisiliquae)*.

I. longiracemosa (" *longeracemosa* ") Boivin ex Baill.

Erect, branching rather woody annual or short-lived perennial herb to 2 m tall with slender, cylindrical, red-brown, sparingly strigulose stems.

Coastal areas ; 0-100 m alt.

Madagascar ; India (Travancore).

I. longistaminata Schrire – Icon.: Kew Bull. 53 : 657, 1998.

syn.: *I. homblei* Bak. f. & Martin subsp. *longiflora* J. B. Gillett, non *I. longiflora* Taub.; *I.* sp. aff. *macrophylla* Schumach. & Thonn. sensu Bak. f. (J. Linn. Soc. Bot. 37 : 142, 1905).

Softly-wooded shrub 1,3-3 m tall ; stems 3-4-angled or narrowly winged, with hyaline, often brown hairs, becoming dark brown, glabrescent, longitudinally striate ; stipules short, often reflexed and flowers large (in closely related *I. homblei,* stipules straight, long and flowers smaller) ; pods with beak bent downwards (upturned in *I. homblei)*.

Open *Brachystegia* woodland, upland grassland, forest margins ; 1400-2400 m alt.

Closely related to *I. homblei.*

I. lotononoides Bak. f.

Shrub with woody blackish stems ; branchlets virgate, rounded, pale-brown, 30-35 cm long.

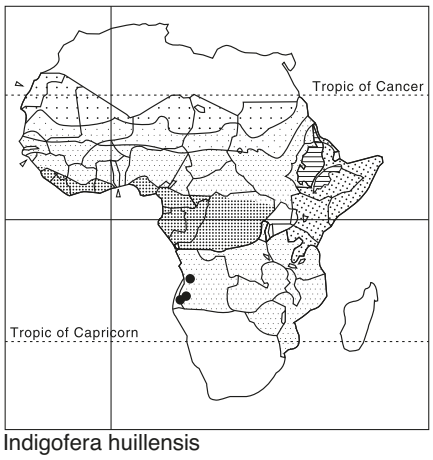
Open bush after fire.

I. lughensis Thulin

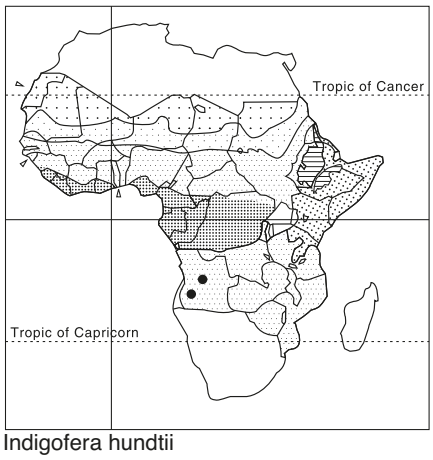
Shrublet or subshrub to 50 cm tall ; young stems terete or angular, completely covered by appressed white hairs ; old stems pale brown ; ripe seeds unknown.

Gypsum silt not far from a stand of *Commiphora guidotii ;* in large quantities ; ± 190 m alt.

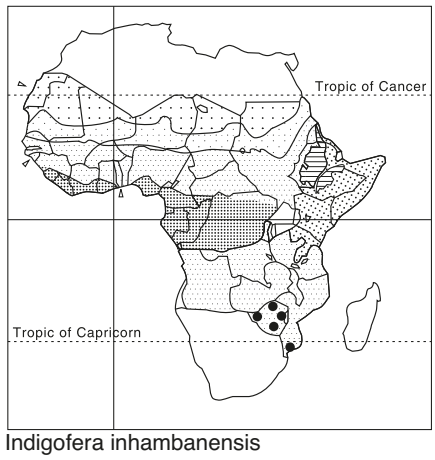
Only known from the type collected in 1989.



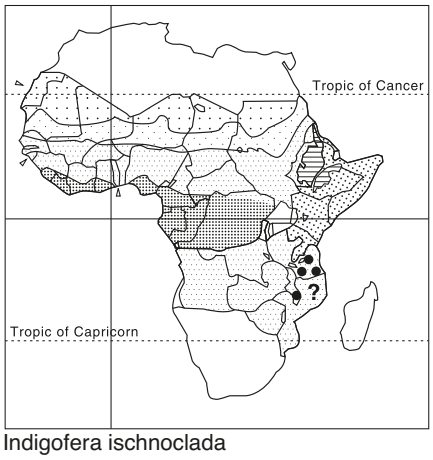
Indigofera huillensis



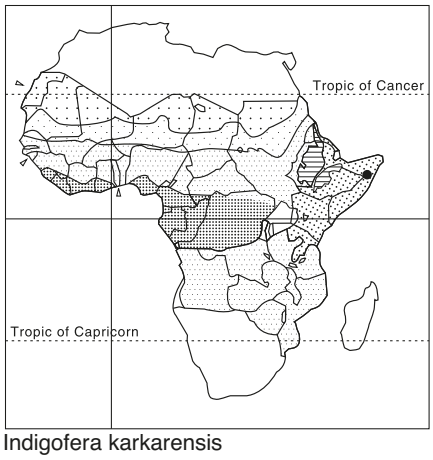
Indigofera hundtii



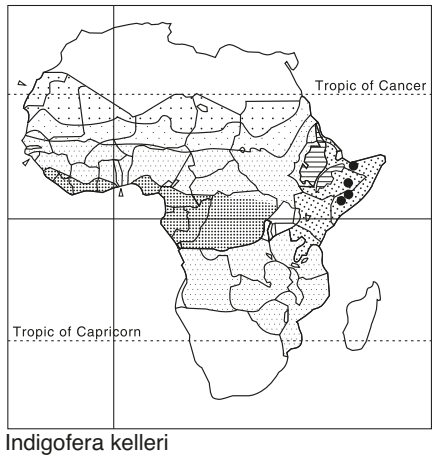
Indigofera inhambanensis



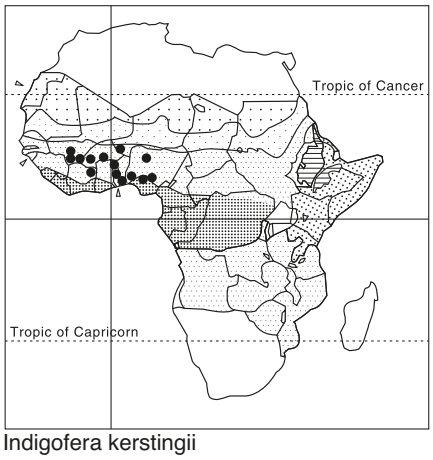
Indigofera ischnoclada



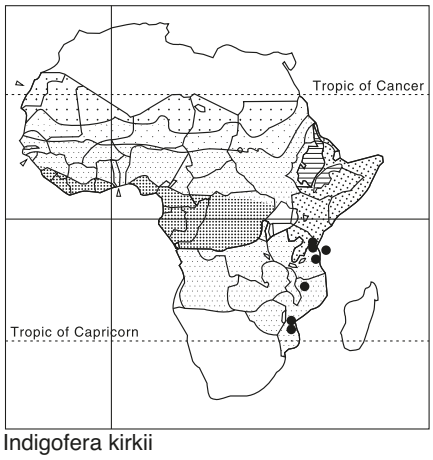
Indigofera karkarensis



Indigofera kelleri



Indigofera kerstingii



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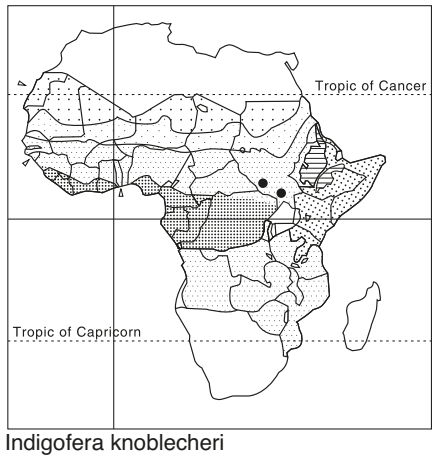
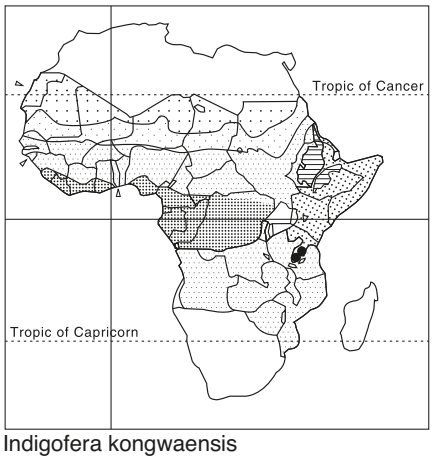
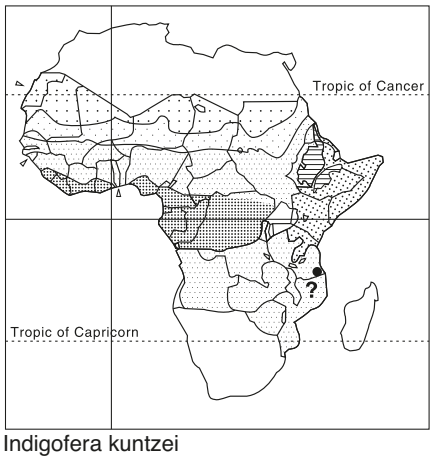


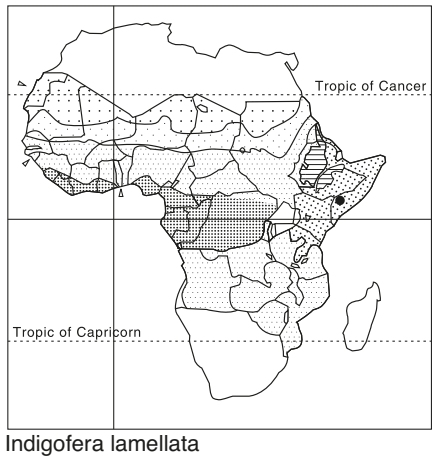
Indigofera knoblecheri



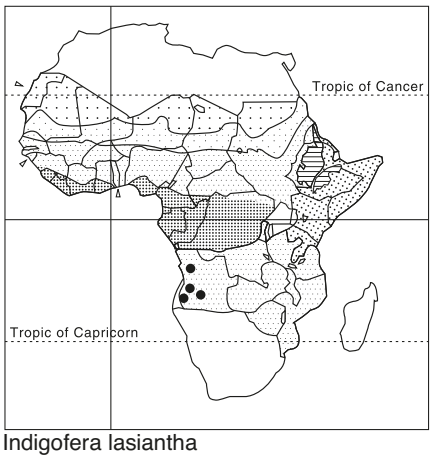
Indigofera kongwaensis



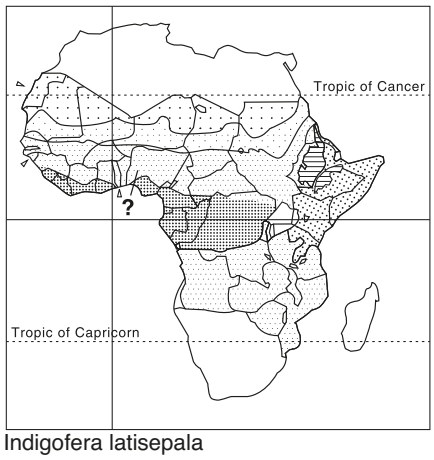
Indigofera kuntzei



Indigofera lamellata



Indigofera lasiantha



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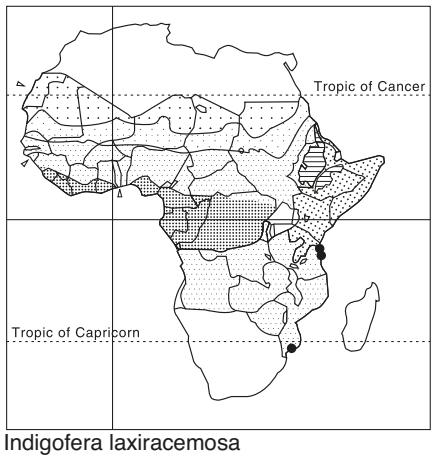

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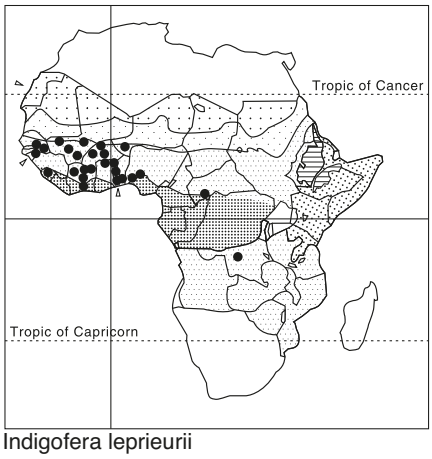
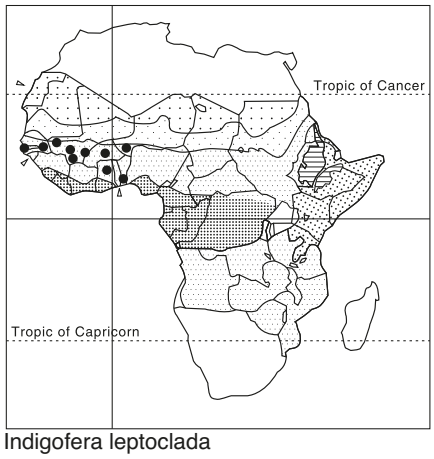


Indigofera leprieurii



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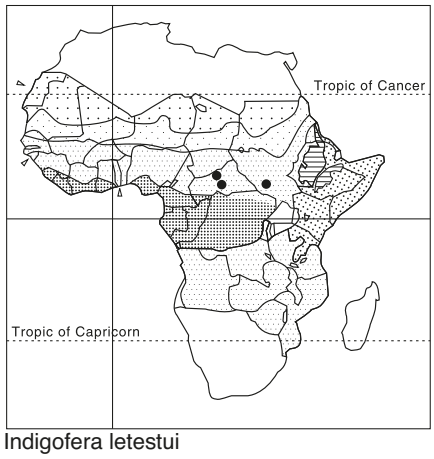
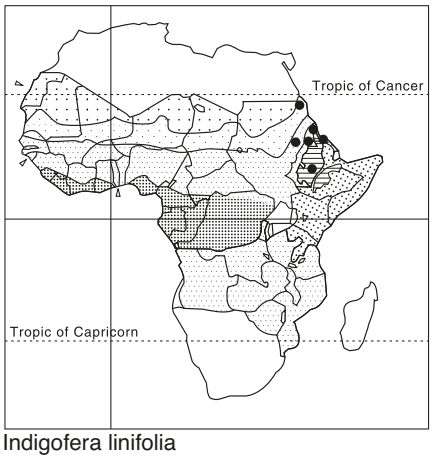
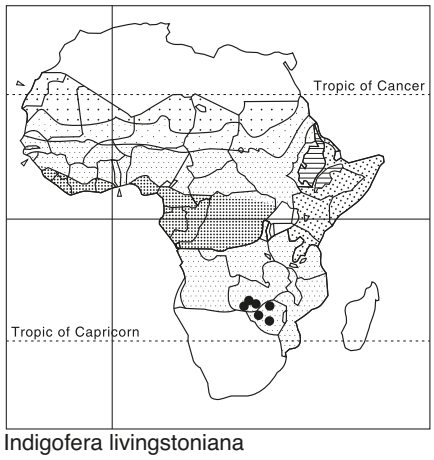


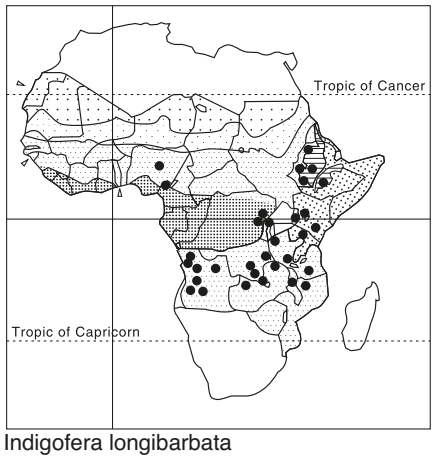
Indigofera letestui



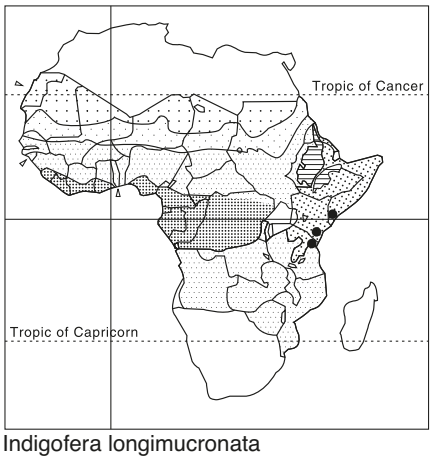
Indigofera linifolia



Indigofera livingstoniana



Indigofera longibarbata



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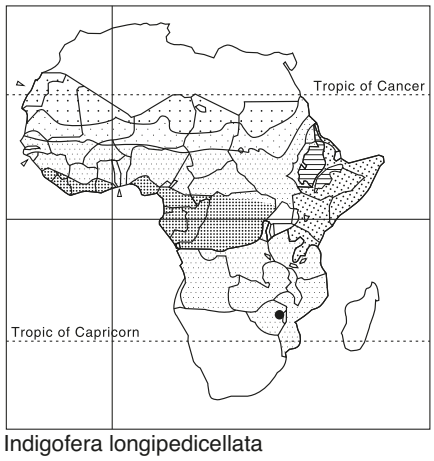

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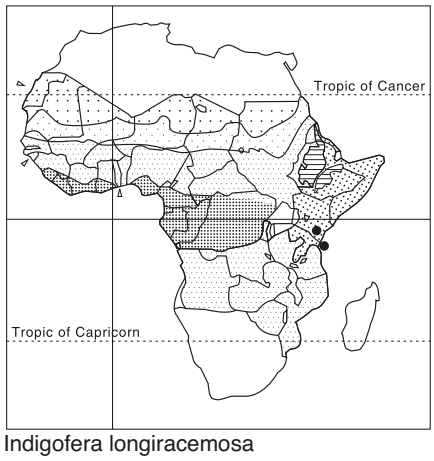
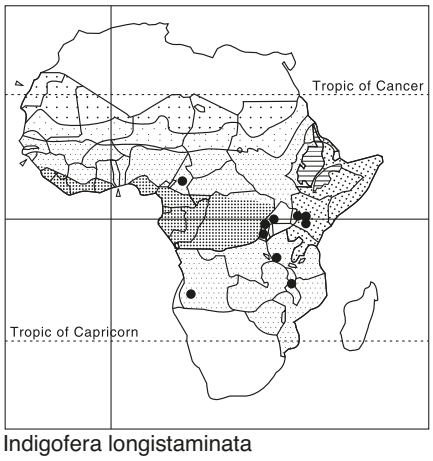


Indigofera longiracemosa



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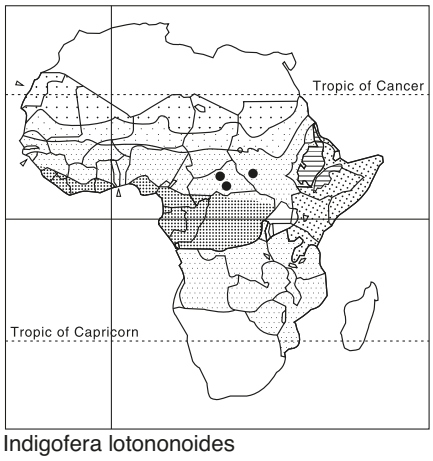
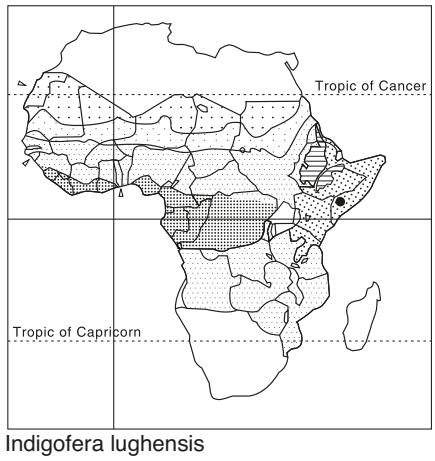
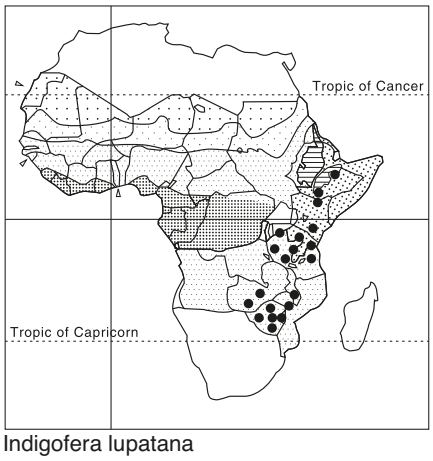


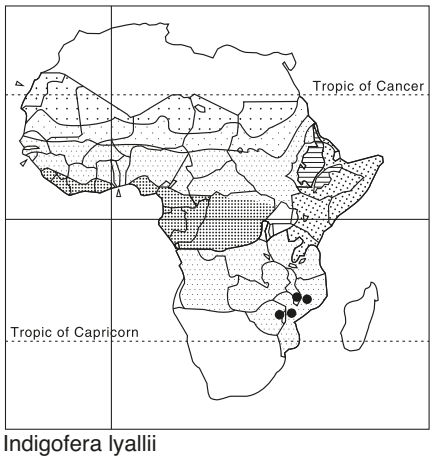
Indigofera lotononoides



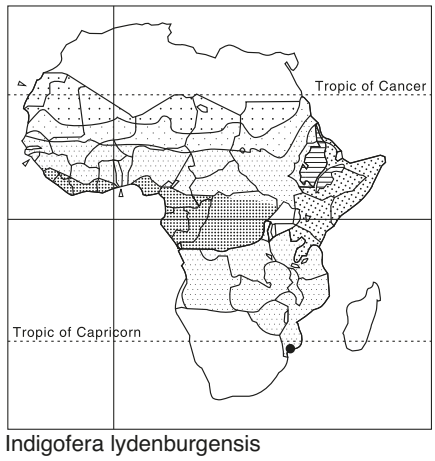
Indigofera lughensis



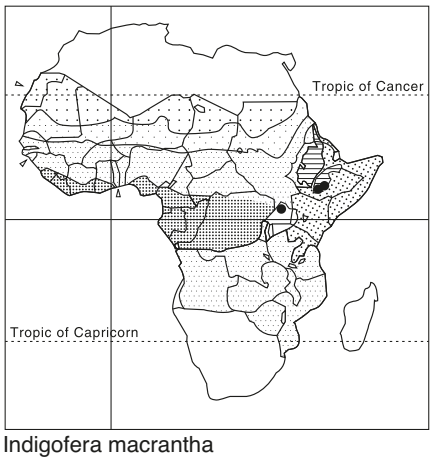
Indigofera lupatana



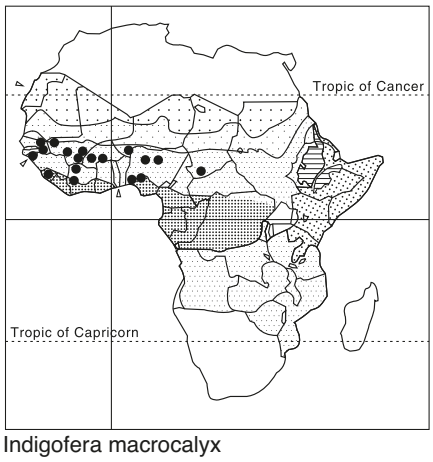
Indigofera lyallii



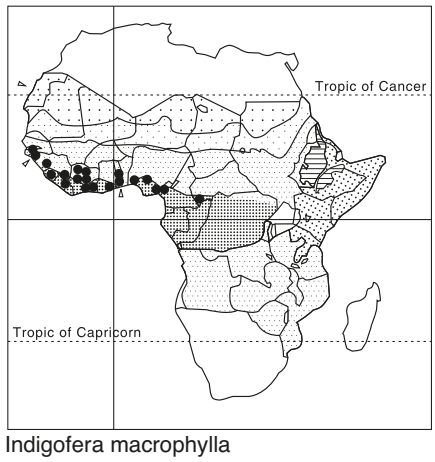
Indigofera lydenburgensis



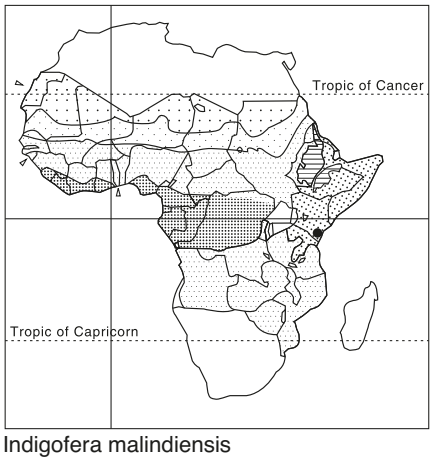
Indigofera macrantha



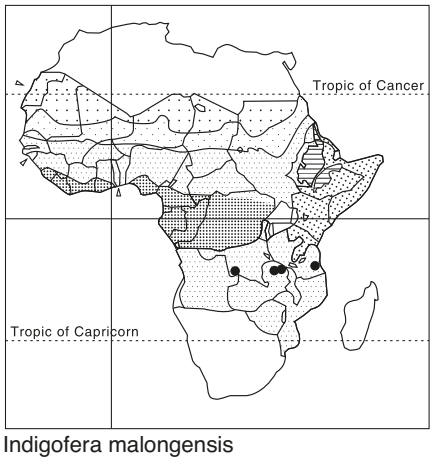
Indigofera macrocalyx



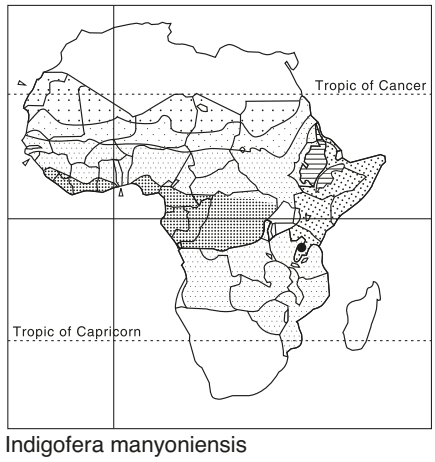
Indigofera macrophylla



Indigofera malindiensis



Indigofera malongensis



Indigofera manyoniensis

I. lupatana Bak. f. – Icon.: Chiovenda in Cufodontis, Miss. Biol. Borana: fig. 11 p. 70, 1939.

syn.: *I. goniocarpa* Bak. f.

Softly woody shrub to 2,5 m tall, sparsely appressed white strigulose.

Deciduous bushland and thicket; often on rocky slopes; 250-2100 m alt.

Leaves varying greatly in size (leaflets 4-21 mm long).

S. Africa.

I. lyallii Bak. f.; Kew Bull. 52: 156, 1997.

syn.: *I. mangokyensis* R. Vig. p.p. quoad specim. Humbert 6560.

Evergreen woody shrub 1-6 m tall with bole to 15 cm Ø, and young twigs densely velvety pubescent, the young shoot tips brown or fulvous.

Brachystegia microphylla woodland above evergreen forest; *Widdringtonia* forest and open woodland or thicket; forest margins, river banks; open rocky slopes; ± 450-2300 m alt.

S. Africa; Madagascar.

Comprises 2 subspp.: – subsp. **lyallii** (syn.: *I. obermeijerae* Bremek.); – subsp. **nyassica** J. B. Gillett

I. lydenburgensis N. E. Br.

Shrublet, woody below, apparently less than 40 cm tall, with a fine ± canescent appressed pubescence on the young stems and leaves, and with minute stalked glands on the raceme and often on the stems and petioles.

Ecology unknown.

S. Africa.

I. macrantha Harms

Erect herb or shrub 1-2 m tall; stems somewhat ridged, like the leaf and inflorescence-rachides rather densely covered with short stiff dark brown hairs.

Bushland, woodland; burned-over margins of dry evergreen forest; 1500-1950 m alt.

I. macrocalyx Guill. & Perr.

Annual herb; stems straggling or suberect, somewhat woody, copiously branched from the base, 30-45 cm long; branches firm, slender, scarcely at all silvery.

Wooded savanna on sand; fields; alluvial terrace of stream; sandy plateau; sandy-clayey soil, slightly humid; to 915 m alt.

Variable; some forms approaching *I. terminalis.*

I. macrophylla Schumach.

Scrambling or climbing shrub, 2-10 m long with slightly angular, pubescent stems to 2,5 cm Ø.

Humid or swampy sites in "niayes" (Senegal); margins of evergreen forest; gallery and secondary forests.

Not in Angola (= *I. podocarpa)*.

I. malindiensis J. B. Gillett

Perennial uniformly branched spreading bushy herb to 1,3 m tall, with white appressed hairs.

In glades in wooded sand-dunes and on river-banks; locally dominant; open grassy area in coastal bush on sandy soil; wet savanna; 0-450 m alt.

Very ornamental: flowers numerous, pale pink, opening in the morning.

I. malongensis Cronquist; Kew Bull. 52: 156, 1997.

Erect herb or subshrub, ± 1 m tall with slightly strigulose branches quickly becoming glabrous.

In shade on red soil; roadside; evergreen thicket; dense thickets on hills in *Brachystegia* woodland; 450-±1300 m alt.

Quite variable.

I. manyoniensis Bak. f.

Erect coarsely pilose branching herb ± 40 cm tall.

Sandy soils in *Brachystegia* woodland; 1260-1400 m alt.

I. maritima Bak.

Prostrate, very widely caespitose, copiously branched, glaucous-silky perennial herb, with the habit and colour of foliage of *Medicago maritima* L.; stems very flexuous, 30-60 cm long.

Sea-sands; frequent and polymorphic.

Namibia, S. Africa.

I. masaiensis J. B. Gillett

Annual or short-lived perennial herb to 25 cm tall, with a well developed taproot; branches usually ± prostrate, to 50 cm long, covered with white ± appressed hairs and glandular erect multicellular hairs.

Dry stony ground; sometimes in areas rich in soda; semi-desert; dry grassland; drier types of *Acacia, Commiphora* bushland; 660-2200 m alt.

I. megacephala J. B. Gillett

Woody-stemmed herb ± 1,3 m tall with brown, ± appressed pubescence; inflorescence condensed, capitate, 3 × 4 cm.

Open grass savanna with *Parkia biglobosa, Cussonia longissima, Uapaca* sp., *Ficus* sp., severely burnt annually; gravelly stony soil near a granite outcrop; forest gallery edge; near water; ± 330 m alt.

I. melanadenia Benth. ex Harv. – Icon.: Fabian & Germishuizen, Wild Flow. North. S. Africa: 189, 1997; Braam van Wyk & S. Malan, Field Guide Wild Flow. Witwatersrand & Pretoria Reg.: fig. 520 p. 211, 1988.

Erect, much-branched shrub to ± 1,5 m tall with flexuous, patent, ± tomentoso-canescent branches spreading in all directions and angularly bent; leaf-rachis with conspicuous *black glands at the junction of each leaflet pair.*

Ecology unknown in Zimbabwe; rocky outcrops in grassland and open woodland in S. Africa.

Botswana, S. Africa.

I. mendesii Torre

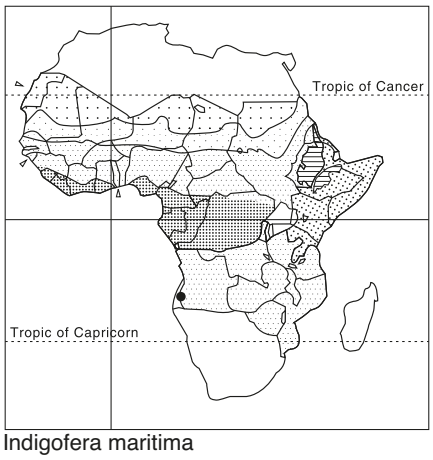
Shrublet or annual herb woody at the base, very ramose, ± 40 cm tall; branches brown with numerous short glandular hairs.

? Savanna; 2000 m alt.

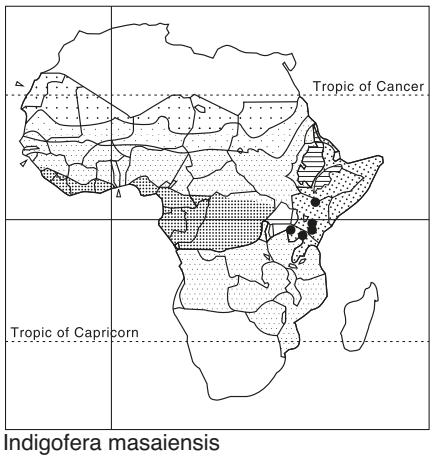
I. mendoncae J. B. Gillett

Perennial, erect herb with subwoody root and yellow-green, glabrous branches, to 60-70 cm tall; leaves sticky.

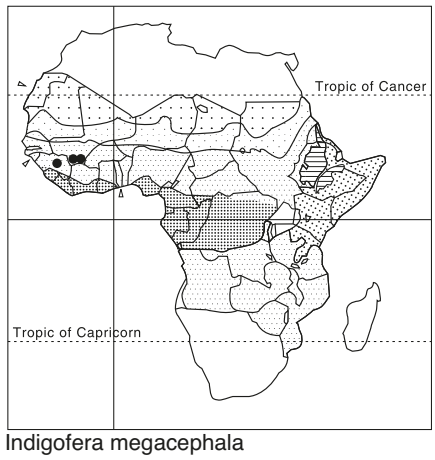
Sandy soil liable to floods; grassy fields bordering a river; 35 m alt.



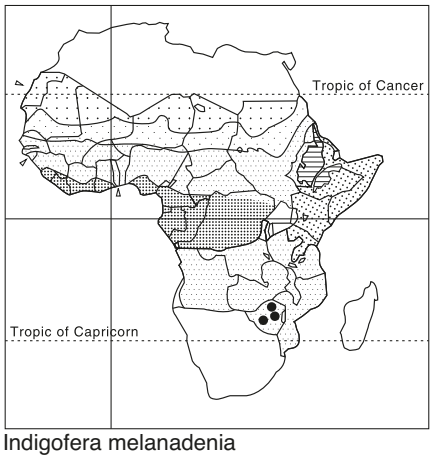
Indigofera maritima



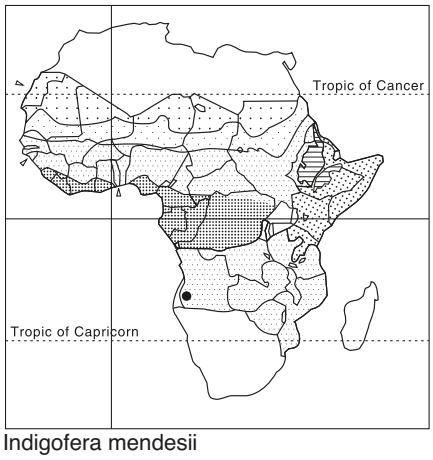
Indigofera masaiensis



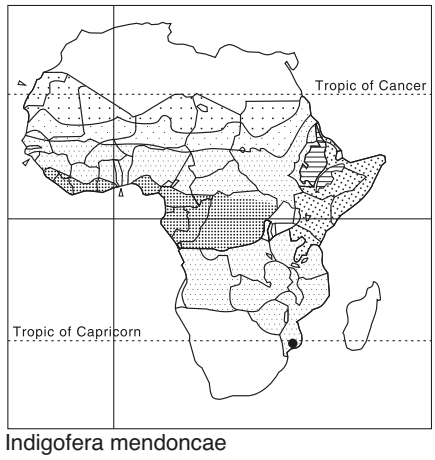
Indigofera megacephala



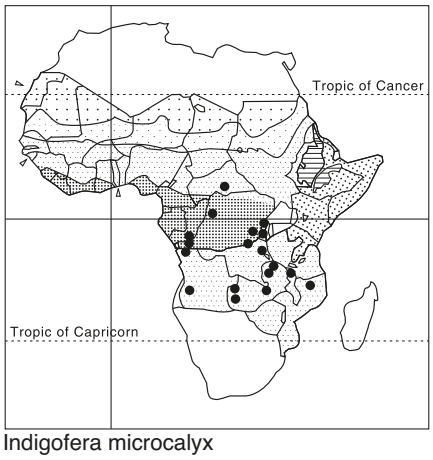
Indigofera melanadenia



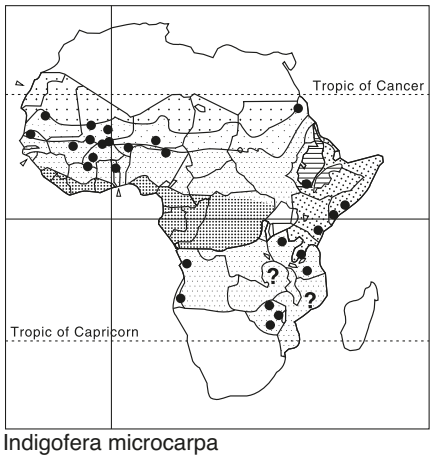
Indigofera mendesii



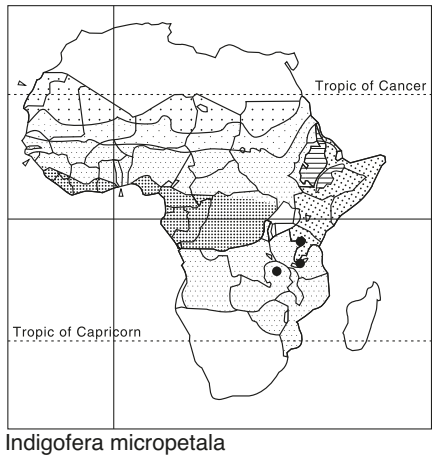
Indigofera mendoncae



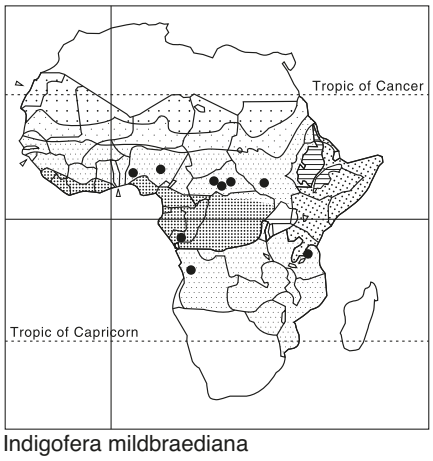
Indigofera microcalyx



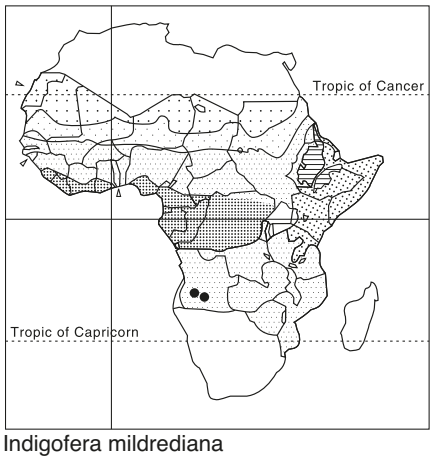
Indigofera microcarpa



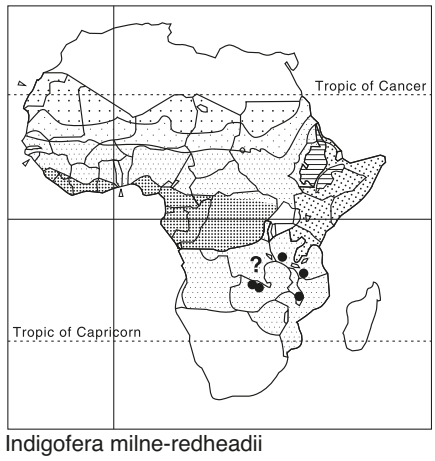
Indigofera micropetala



Indigofera mildbraediana



Indigofera mildrediana



Indigofera milne-redheadii

I. microcalyx Bak.

syn.: *I. karongensis* Bak.; *I. bagshawei* Bak. f.; *I. condensata* De Wild.

Short-lived semi-woody bushy plant 0,4-1 m tall, sometimes prostrate, densely covered with fine soft silvery hairs which are often rather spreading.

Sandy lake shores ; less often sand banks in rivers ; savanna on sandy soils ; often gregarious ; 250-1200 m alt.

I. microcarpa Desv.

syn.: *I. perrottetii* DC.; *I. richardiana* Baill.; *I. boiviniana* Baill.; *I. punctata* Boivin

Annual or perennial usually grey-green herb with few-branched stems radiating from a central rootstock, ascending towards the tips, usually somewhat flattened, thinly white-strigose, glabrescent, 30-100 cm long. – Different from all other *Indigofera* in Africa by the well-developed *impressed glands* on the lower leaf-surface. – Fruit rather variable.

Weed of cultivation ; shores of receding lakes and rivers ; sandy soils ; clayey soils ; seasonally flooded places ; 0-1200 m alt.

Native in Africa ?, Madagascar ; tropical America (? native), Mexico.

No specimen collected in East Africa before 1926.

I. micropetala Bak. f.

Prostrate annual herb ; branches 3-8 cm long, ± pilose.

Short grassland on sandy soil ; 1200-1600 m alt.

I. mildbraediana J. B. Gillett

syn.: *I. subulifera* sensu Tisserant, Bull. Mus. Natl. Hist. Nat. Paris, Sér. 2, 3 : 167, 1931, non Welw. ex Bak.

Semi-woody branching herb 0,5-1,5 cm tall ; stems striate, densely silvery with short (0,2-0,3 mm) strictly appressed hairs.

Scattered tree grassland ; disturbed grassland ; open savanna ; plains ; high grass-low tree savanna ; sometimes abundant or common ; dry bush ; meadows ; 400-1290 m alt.

Gabon, sine loco.

I. mildrediana Torre

Erect woody shrub with cylindrical stem, with scattered hairs ; young branches substriate, tomentose.

Ecology unknown (? stony meadows).

S. Africa.

I. milne-redheadii J. B. Gillett

Slender, often erect plant to 30 cm tall ; stems with white, biramous stiff, appressed, rather sparse hairs and a few short, erect multicellular, glandular hairs.

Common on rocky slope of scarp ; by path through secondary *Brachystegia-Uapaca* woodland, on red soil probably overlying laterite ; shallow soil by rocks in *Brachystegia* woodland ; steep shady bank ; *Brachystegia manga* woodland ; dry stony waste ground ; weed in native garden by pool ; 100-1800 m alt.

I. mimosoides Bak.

Erect or diffuse rather woody annual or perennial herb, to 1 m tall ; stems reddish, white strigulose or glabrescent below ; multicellular hairs also usually present on the stems and often elsewhere.

Grassland ; stream banks ; forest margins ; *Brachystegia-Uapaca* woodland and secondary bushland on red loam ; sandy shortly bushy pastures ; shortly grassy pastures, in company with various *Lamiaceae ;* savannas, along roads ; 900-2550 m alt.

Comprises 3 vars.: – var. **mimosoides** (syn.: *I. affinis* De Wild. 1923, non Harv. 1862 ; *I. shirensis* Bak. f.) ; – var. **brachycarpa** J. B. Gillett ; – var. **viscidior** J. B. Gillett

I. monantha Bak. f.

Spreading annual herb to 10 cm tall with hairs to 1 mm long, various, some finer, spreading at the tips, others stiff, medifixed, appressed (especially on the lower leaf-surface).

Pastures ; bare rocky slopes ; marshy spots in deciduous woodland ; 840-1400 m alt.

I. monanthoides J. B. Gillett

Erect annual herb ± 13 cm tall ; stems white-pilose with long appressed or subspreading hairs. Near *I. monantha* but pod glabrous, leaflets viscid on the margin, the terminal one twice as long as wide.

Open *Combretum* woodland with *Hyparrhenia filipendula, Loudetia arundinacea* as the chief grasses ; near rock pools ; 1080-±1650 m alt.

I. mooneyi Thulin

Annual or short-lived perennial herb ± 15-100 cm tall ; all parts appressed strigose with biramous hairs, many of which are brown or black ; glandular multicellular hairs practically absent ; sparse short multicellular hairs usually present on calyces, stipules, leaflet midveins and pods.

Grassland and scrub ; 1650-2000 m alt.

I. mupensis Torre

Perennial herb with ± prostrate slender branches from a woody rootstock ; biramous hairs white, ± appressed ; multicellular glandular hairs, sometimes to 3 mm long, present.

Burned grassland and deciduous woodland, especially on sandy soil ; very dry ground ; clearing on red soil ; old natives gardens ; sometimes common ; 1050-2400 m alt.

Comprises 2 subspp.

I. mwanzae J. B. Gillett

Annual, branching herb ± 20 cm tall with pilose branches.

Pastures (common) ; ± 1200 m alt.

Only known from the the type collected in 1932.

I. nairobiensis Bak. f., incl. var. *angustata* ! Bak. f.

Perennial herb with a woody rootstock, the branches usually procumbent but sometimes ± erect, to 50 cm long, ± strigose, the hairs appressed or, sometimes, spreading at the tips.

Grassy places (sometimes where stony) ; 1600-2300 m alt.

Comprises 2 subspp. (the plant varies greatly).

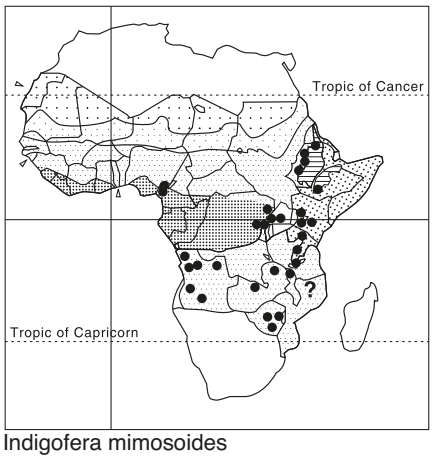
I. nambalensis Harms ; Schire in Kew Bull. 53 : 659, 1998.

syn.: *I. latipinna* I. M. Johnst.; *I. rhynchocarpa* Welw. ex Bak. var. *latipinna* (I. M. Johnst.) J. B. Gillett

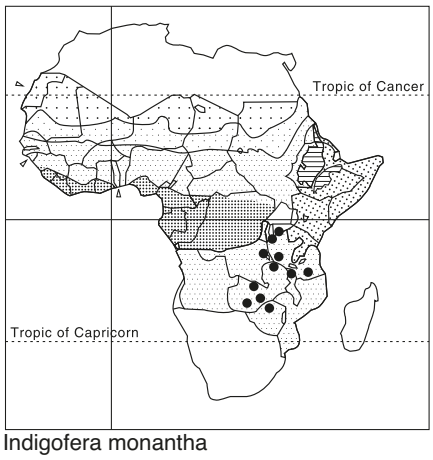
Shrub very similar to *I. rhynchocarpa* but with densely tomentose inflorescences and flowers (all parts).

Plateau *Brachystegia* and *Isoberlinia* woodland often on laterite, of the Copperbelt (Zambia-Angola) ; c. 1000-1600 m alt.

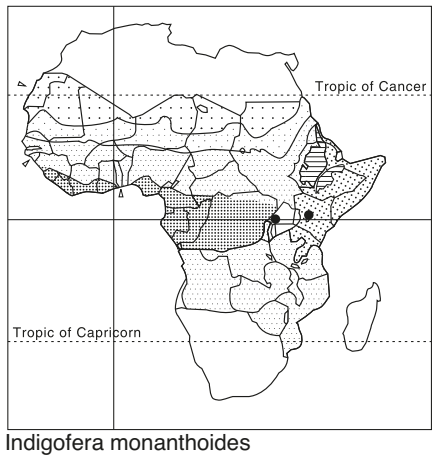
Very close to *I. rhynchocarpa.*



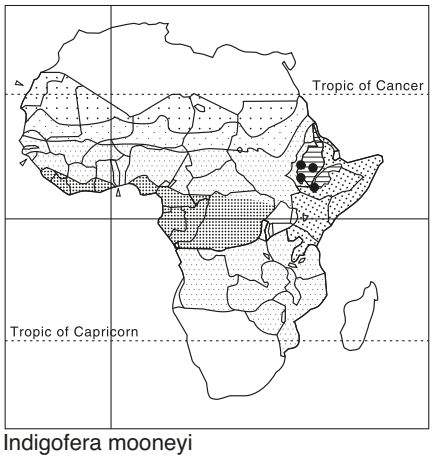
Indigofera mimosoides



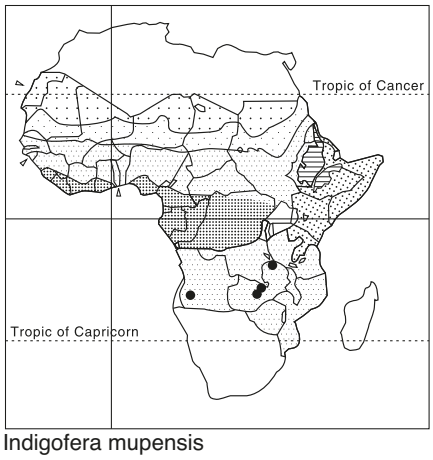
Indigofera monantha



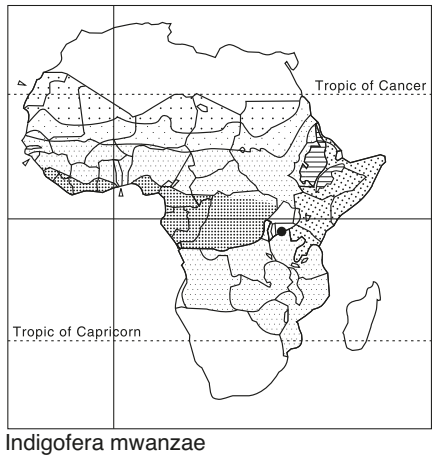
Indigofera monanthoides



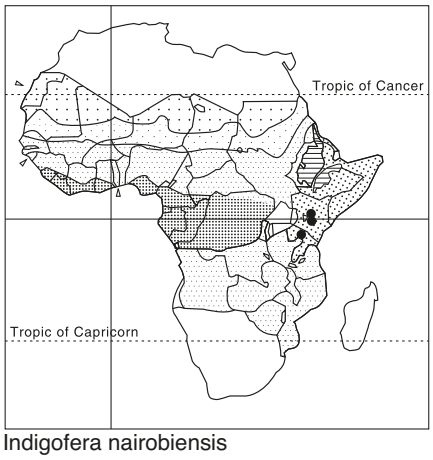
Indigofera mooneyi



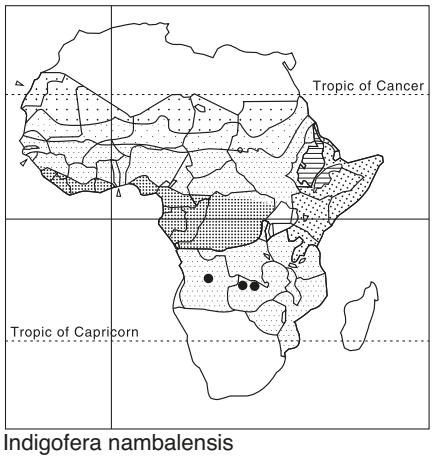
Indigofera mupensis



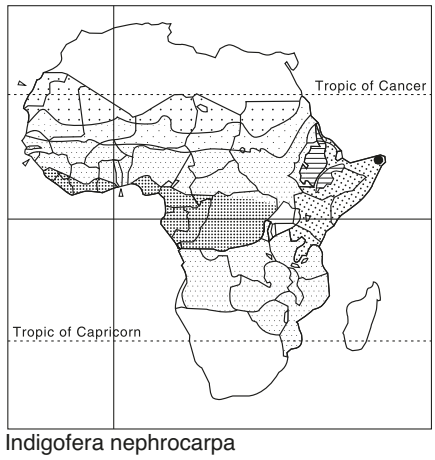
Indigofera mwanzae



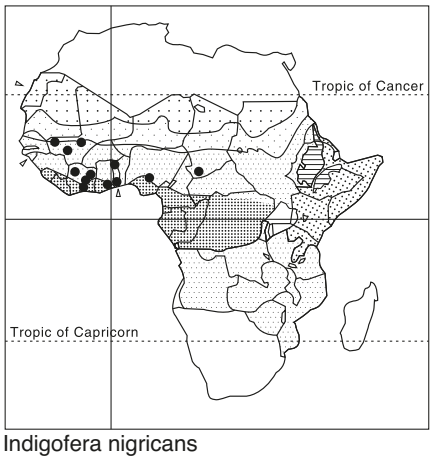
Indigofera nairobiensis



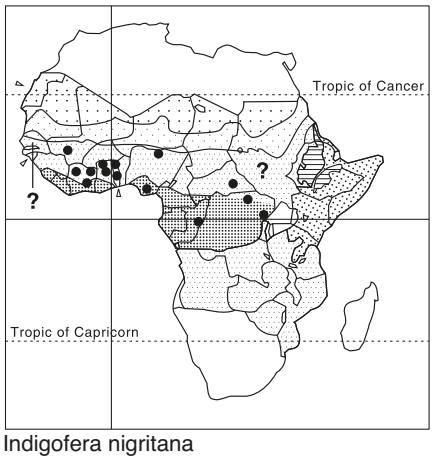
Indigofera nambalensis



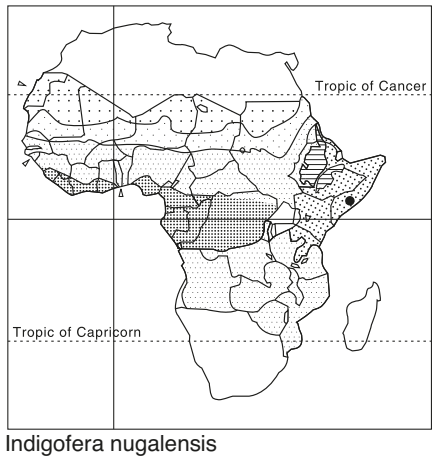
Indigofera nephrocarpa



Indigofera nigricans



Indigofera nigritana



Indigofera nugalensis

I. nephrocarpa Balf. f. – Cortés-Burns & al. (2004) : 707-708. – Icon.: Balfour, Botany of Socotra (Trans. Roy. Soc. Edinb. 31: pl. 18 A pro majore parte, 1888).

Prostrate annual or perennial herb to 30 cm tall ; stems silvery with hairs usually spreading at the tips.

Sand on limestone ; ± 200 m alt.

Socotra ; Oman ; Pakistan (westernmost coastal area).

I. nigricans Vahl ex Pers., Syn. 2 : 327, 1807, ampl. Bak. f., J. Bot. 41: 193, 1903.

syn.: *I. elegans* Schumach. & Thonn.

Erect, stiff, probably annual herb to ± 60 cm tall.

Grassy, flooded plain ; wooded savanna on sand.

Apparently uncommon, confused with *I. leptoclada.*

I. nigritana Hook. f.

syn.: *I. oligantha* Harms ex Bak. f.

Erect, branching, half woody herb, 50-150 cm tall.

Chiefly near rivers : gallery forest, flooded grounds ; clayey sand ; savanna ; cultivations.

? Sudan.

I. nugalensis Thulin – Cortés-Burns & al. (2004) : 706-707.

Annual (or perennial) herb ; stems herbaceous to slightly woody, ± prostrate to ascending, ± 10-15 cm long, radiating from a taproot, sulcate, covered by appressed white hairs ; young parts often with a yellow tinge ; seeds almost *cross-shaped* with swellings in the middle (the attachment of each seed is in a swollen part of the pod).

Gypsum hills in area covered by open bushland with *Acacia, Commiphora* including *C. velutina, C. sphaerocarpa, C. foliacea* s. lat.; also with *Otostegia somala, Cienfuegosia welshii, Kedrostis gijef* etc.; ± 570-650 m alt.

Abd al-Kuri (Socotran Archipelago).

Near *I. spiniflora* and sometimes occurring with it.

I. nummularia Welw. ex Bak.

Stems woody 45-60 cm long, prostrate, with numerous spreading finely grey-downy branches ; rootstock many-headed, woody.

Sandy places on river banks decking these with its brilliant rose-purple flowers ; common and abundant.

I. nummulariifolia (L.) Livera ex Alston

bas.: *Hedysarum nummulariifolium* L.

syn.: *Indigofera echinata* Willd.; *Acanthonotus echinatus* (Willd.) Benth.

Prostrate or erect annual herb, occasionally rooting at the nodes ; stems often flattened, sparsely strigulose, 20-80 cm long, radiating from a central root, copiously branched ; with biramous hairs all white and minute gland dots.

Cultivated ground ; weedy places ; open and sandy places ; sand at the base of sandstone cliff ; hollows ; on laterite ; savanna ; 0-1400 m alt.

Namibia ; Madagascar ; India, Sri Lanka ; Indo-China.

I. nyassica Gilli

Erect annual or short-lived perennial herb, usually with rather purplish stems, to 2 m tall, covered with short appressed biramous hairs which are almost all brown or blackish on the pod, corolla and calyx ; mixed brown and white hairs on the inflorescence and mainly white elsewhere ; multicellular hairs usually present on the pods, sometimes elsewhere.

Sandy and marshy ground in *Brachystegia* woodland ; sometimes on gravelly soil ; *Brachystegia, Uapaca* woodland ; 650-1100 m alt.

Comprises 3 vars.

? Malawi.

I. oblongifolia Forssk. – Cortés-Burns & al. (2004) : 707.

syn.: *I. paucifolia* Del.; *I. lotoides* Lam. excl. syn.; *I. desodioides* Bak. 1894, non 1887.

Erect silvery-pubescent, glaucous shrublet, 1-1,5(-3) m tall with many, branched stems.

Black clay ; edges of brackish places, near stream ; wooded pool on gravelly plateau with muddy soil ; wadis and graras ; sandy-clayey soil ; sand ; grassland, bushland, stony ground ; sandy thickets ; 480 (? and less)-1200 m alt.

Egypt ; Socotra ; Arabia, Jordan, S Iran, India, Sri Lanka ; Java.

Disjunct area with locality in Angola. Not in East Africa (= *I. schimperi)*.

I. ogadensis J. B. Gillett

Shrublet ; young stems erect, rigid, always silvery with closely appressed hairs, older ones brown ; leaflets with a *blister at each side and another beneath the tip.*

Dry deciduous bushland ; open plains with widely scattered *Acacia* and dominant cover of shrublets ; red, yellowish red sandy soil, sometimes with *I. eremophila,* together forming a large part of the ground cover ; 170-600 m alt.

I. oligophylla Klotzsch

Prostrate, perennial subshrub ; stems slender, cylindrical, herbaceous, 30 cm long, copiously and diffusely branched from the base and closely covered with appressed white hairs.

Sandy soil ; in the bush on coral and sand (common).

I. omariana J. B. Gillett

Annual herb with prostrate white pubescent branches to 40 cm long.

Shallow soil among grass tussocks on flat granite rocks below granite hill ; 900 m alt.

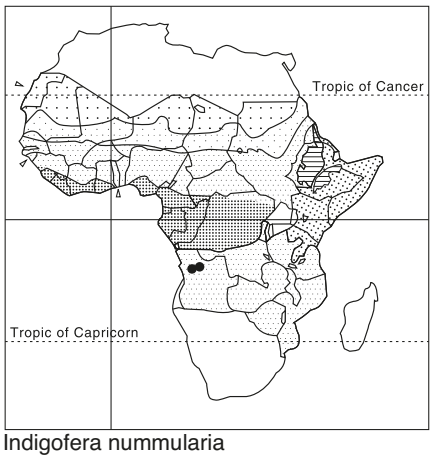
Only known from the type collected in 1963.

I. omissa J. B. Gillett, non *Microcharis omissa* Thulin

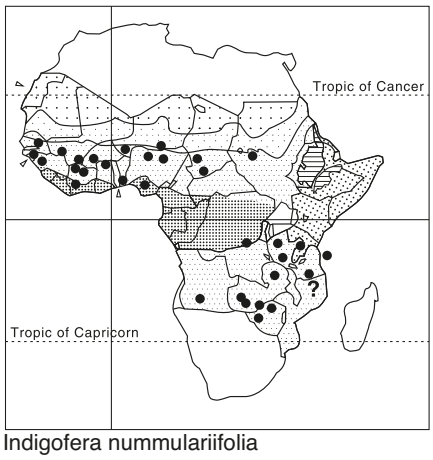
Half-woody, erect shrublet 50 cm tall or more, with subangular branches, sparsely appressed pilose (or prostrate herb).

Sandstone rocks ; cracks in rocks, ± 320 m alt.

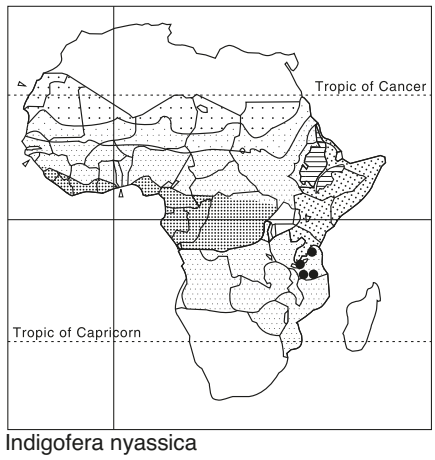
Comprises 2 vars.



Indigofera nummularia



Indigofera nummulariifolia



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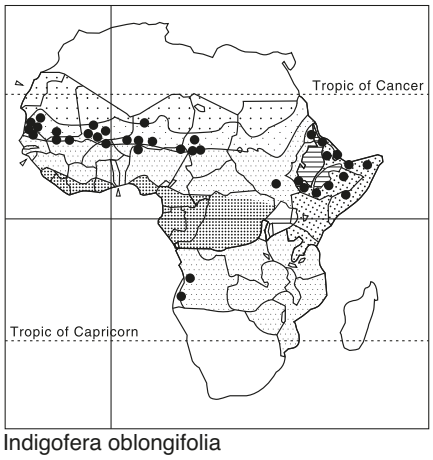
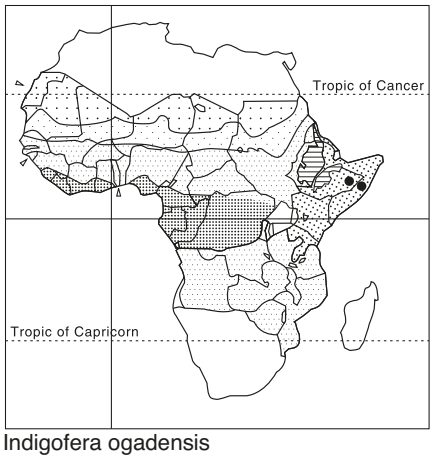
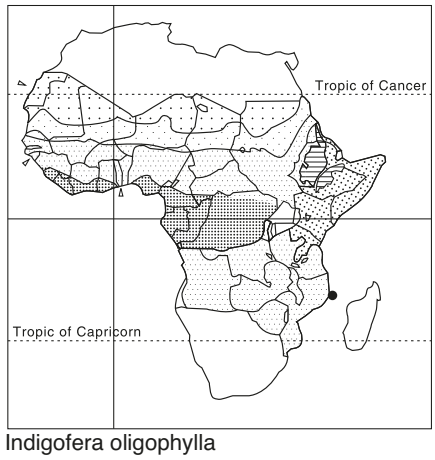


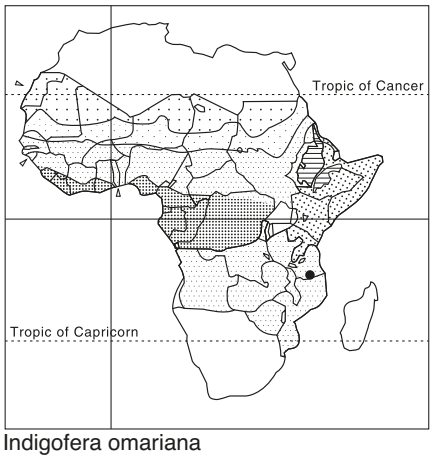
Indigofera oblongifolia



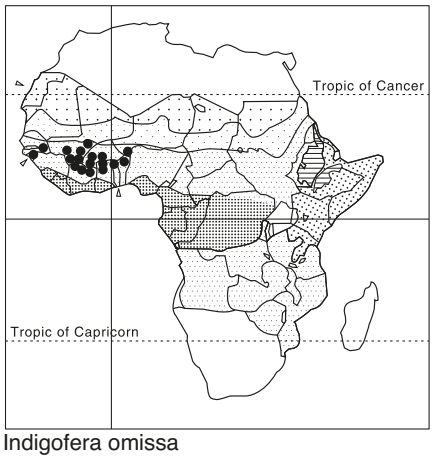
Indigofera ogadensis



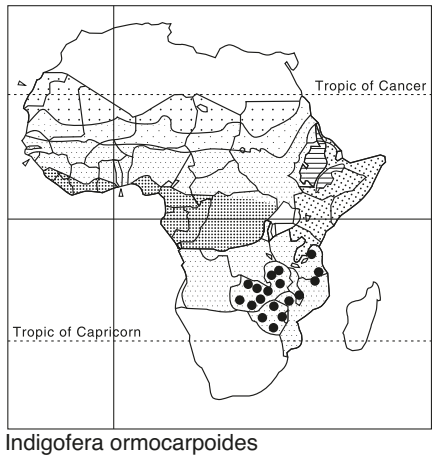
Indigofera oligophylla



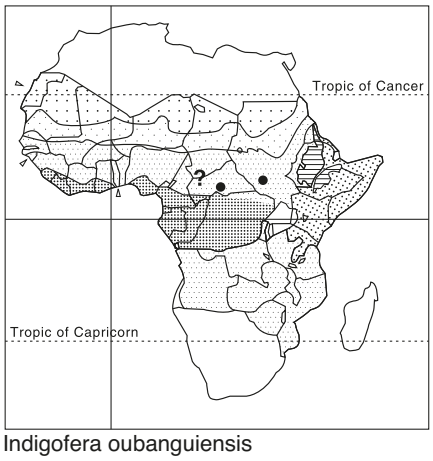
Indigofera omariana



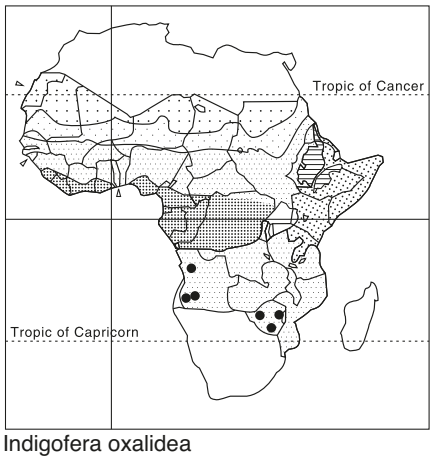
Indigofera omissa



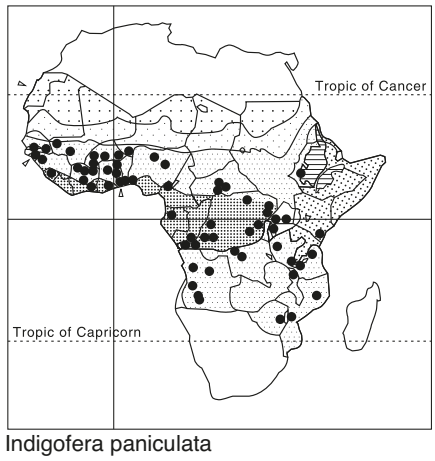
Indigofera ormocarpoides



Indigofera oubanguiensis



Indigofera oxalidea



Indigofera paniculata

INDIGOFERA

I. ormocarpoides Bak.

syn.: *I. torulosa* Bak. 1871, non E. Mey. 1836 ; *I. moniliformis* Bak. f.

Deciduous shrub, softly woody, ± 2-4 m tall with slender, sparsely branched zigzag stems ; branches densely appressed strigulose when young, later glabrescent.

Dense bush ; thickets fringing stream ; in tall grass annually burned ; riparian forest ; near rivers, streams, rocky outcrops, termite mounds ; 0-1100 m alt.

Caprivi Strip, Botswana, S. Africa (N Transvaal) ; Madagascar.

I. oubanguiensis Tiss.

Half-woody shrublet ± 75 cm tall, with brown, striate stems with rare, appressed hairs.

Laterite.

? Burkina Faso.

I. oxalidea Welw. ex Bak.

syn.: *I. endecaphylla* Jacq. var. *radicans* Welw. ex Bak. ; *I. supralevis* N. E. Br.

Trailing perennial herb with copiously branched, thin stems 30 cm or more long, the slender flexuose branches inconspicuously grey-hispid.

Damp muddy-sandy meadows, about ant-hills.

S. Africa. Not in Sudan.

I. paniculata Vahl ex Pers.

Erect, strigose, branched annual herb 0,3-1,5 m or more tall, with a taproot.

Humid ground ; pool edges ; forest gallery ; savanna ; fields ; river banks ; clayey-sandy to clayey temporarily flooded soils ; grassland ; forest margins ; dried-up swamps ; old cultivations ; "common at the upper water level of the Volta Lake, Ghana", sometimes forming "dense continuous vegetation thus impeding movement in the lake" (fide H. M. Burkill, Useful Pl. W. Trop. Afr. 3 : 376, 1995) ; 0-1800 m alt.

Comprises 2 subspp.: – **paniculata** (syn.: *I. procera* Schumach. & Thonn.) ; – **gazensis** (Bak. f.) J. B. Gillett

I. paracapitata J. B. Gillett

Subwoody, annual herb with erect stems, 0,2-1 m tall, generally very ramose towards the top, sparsely puberulous or glabrous ; hairs ± spreading ; upper stems and leaf-rhachides markedly angled.

Savanna on sandy soils ; grassland ; shallow soil on top of hills or cliffs in poor pasture (very common) ; thickets along the coast ; 50 (and less)-1200 m alt.

I. paraglaucifolia Torre

Woody, ? annual, erect herb >50 cm tall with rounded, sparingly pubescent stem ; towards the top with numerous spreading multicellular hairs.

Ecology unknown (? stream banks) ; 1500 m alt.

Only known from the type collected in 1937.

I. paraoxalidea Torre

Perennial, prostrate, ramose herb to ± 40 cm long ; branches ribbed or subribbed ; young branches densely pilose with biramous, appressed hairs.

Ecology unknown ; 1600-1700 m alt.

INDIGOFERA

I. parviflora B. Heyne ex Wight & Arn.

syn.: *I. deflexa* A. Rich. ; *Indigastrum deflexum* (A. Rich.) Jaub. & Spach ; *Indigofera barcensis* Chiov. ; *Indigastrum parviflorum* (B. Heyne ex Wight & Arn.) Schrire

Annual herb, ramose-diffuse 0,25-1 m tall ; branches white-strigose.

Open savannas ; grassland ; cultivated areas ; clayey-flooded soils ; woodland ; sandy-muddy hollow ; 800 (and less)-1600 m alt.

Cape Verde Isl. ; S. Africa, Namibia ; India ; N Australia.

Comprises 3 vars. : – Schrire in Bothalia 22 : 168, 1992, suggests 2 subspp. one of which with 2 vars., in genus *Indigastrum : I. parviflorum* subsp. *parviflorum* with var. *parviflorum* (bas. : *Indigofera parviflora* var. *parviflora ;* syn. : *I. deflexa* Hochst. ex A. Rich. ; *Indigastrum deflexum* (Hochst. ex A. Rich.) Jaub. & Spach ; *Indigofera barcensis* Chiov.), and var. *crispidulum* (J. B. Gillett) Schrire (bas. : *Indigofera parviflora* var. *crispidula* J. B. Gillett) ; and subsp. *occidentale* (J. B. Gillett) Schrire (bas. : *Indigofera parviflora* var. *occidentalis* J. B. Gillett).

Disjunct area in Africa.

I. paucistrigosa J. B. Gillett

Softly woody shrub 1-1,3 m tall with cylindrical, brown, almost glabrous branches.

Stony hill with *Brachystegia microphylla,* locally common ; 1170 m alt.

? Zambia.

Only known from the type collected in 1937.

I. pellucida J. B. Gillett & Thulin

Shrublet ± 0,8-2 m tall, smelling of aniseed ; young stems glabrous to fairly densely and softly pubescent with spreading and somewhat curled hairs ; old stems glabrescent, purplish brown ; leaflets with a *blister at each side and one beneath the tip* (as in *I. brevicalyx, I. ogadensis)*.

Acacia-Commiphora bushland on red sandy soil ; locally abundant ; with *Diospyros "wajirensis", Dalbergia microphylla, Jatropha dichtar, Balanites rotundifolia, Euphorbia cuneata, Grewia discolor, Indigofera spinosa ;* ± 90-180 m alt.

I. peltata J. B. Gillett

Perennial plant with an underground woody rootstock and erect subglabrous annual shoots to 30 cm long ; leaves 1-foliolate, the *leaflet peltate,* ovate, to 14 x 10 cm, glabrous above ; sparsely appressed strigose beneath with biramous hairs ; pod unknown.

Red gritty soil on hillsides in fireswept deciduous woodland ; frequent ; 1200 m alt.

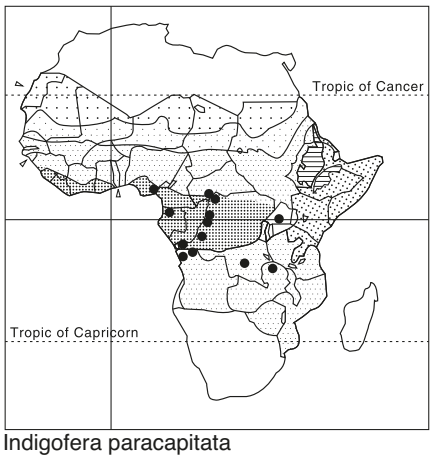
The only Leguminosae with peltate leaves (but the digitate leaves of *Lupinus* are considered as really peltate by some authors) ; in families allied to the *Leguminosae* only one species, *Rubus peltatus* Maxim. (Japan) has peltate leaves. – However flowers very similar to those of *I. rhynchocarpa* and *I. garckeana.*

Discovered in 1959 in a large, sparsely populated, tsetse-infested area which has been almost inaccessible until "jeepable" tracks were made by a company prospecting for minerals (Tanzania) ; also known in Zaire.

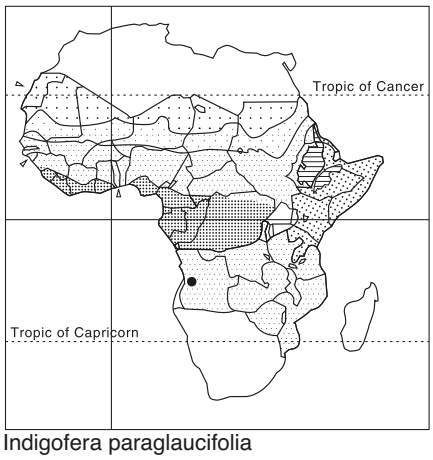
I. petiolata Cronquist

Erect, annual herb 20-40 cm tall with a single simple or branched stem, spreading-hairy and obscurely strigose-hispid ; fruit unknown.

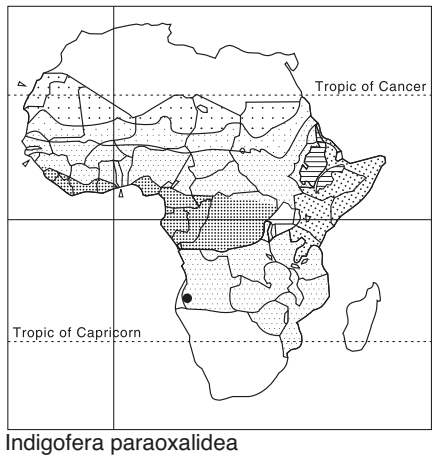
Open forests ; grassy formations.



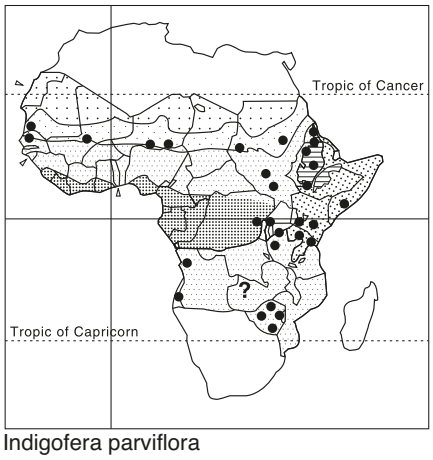
Indigofera paracapitata



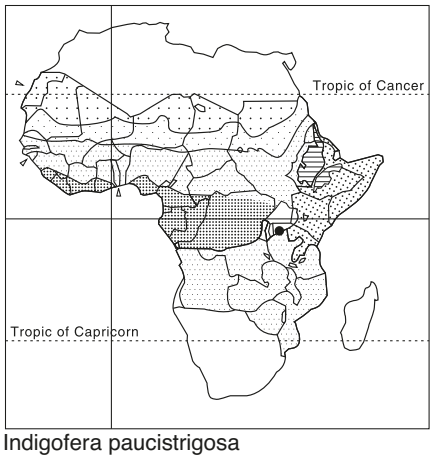
Indigofera paraglaucifolia



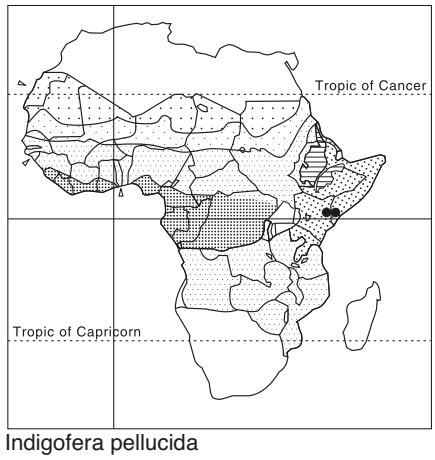
Indigofera paraoxalidea



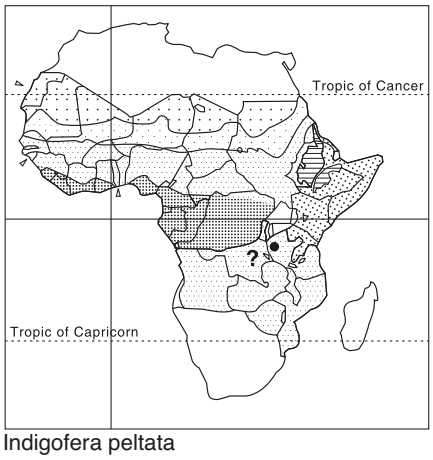
Indigofera parviflora



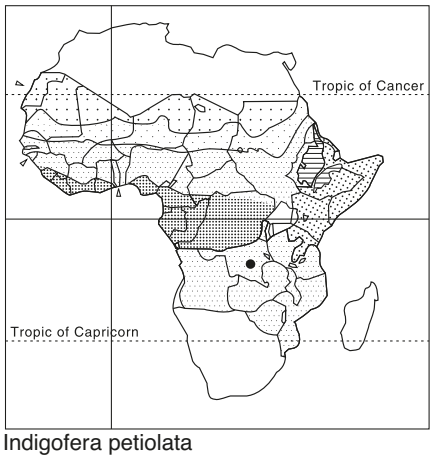
Indigofera paucistrigosa



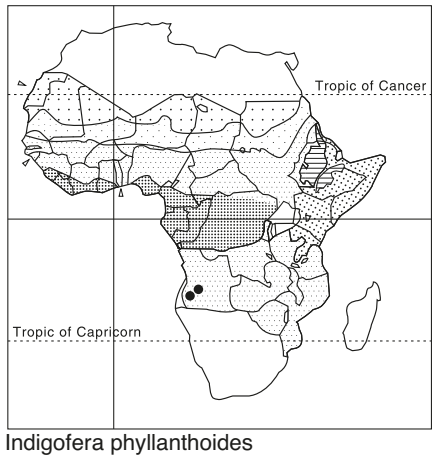
Indigofera pellucida



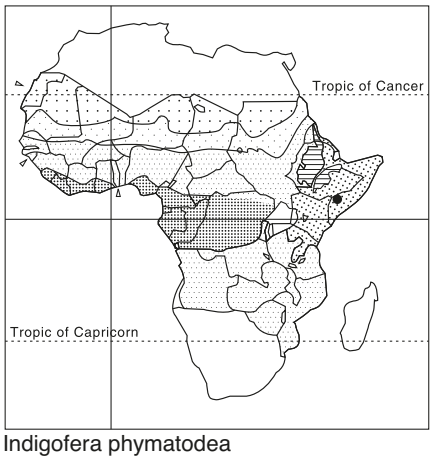
Indigofera peltata



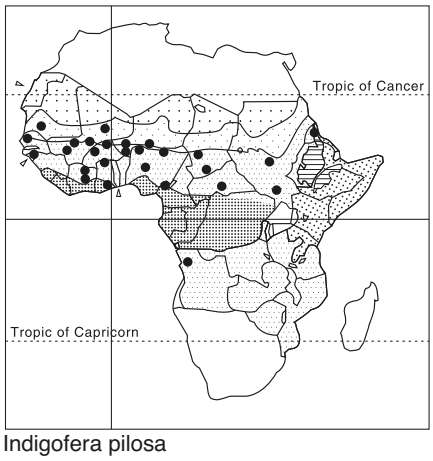
Indigofera petiolata



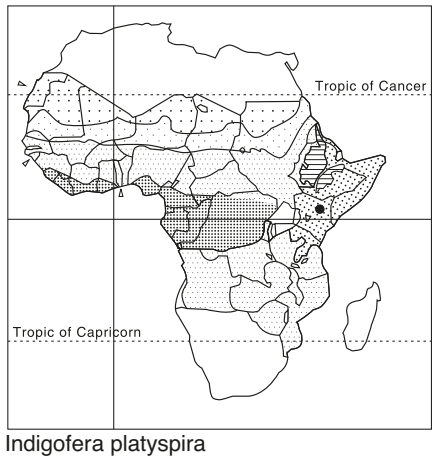
Indigofera phyllanthoides



Indigofera phymatodea



Indigofera pilosa



Indigofera platyspira

I. phyllanthoides Bak.

Slender undershrub 30-90 cm tall with very numerous ascending finely grey-downy branches ; older branches purple ; fruit known !

Drier thickets ; 1725-1900 m alt.

Confused with *I. dendroides.*

I. phymatodea Thulin

Annual erect herb to 40 cm tall, much branched ; stems sparsely pubescent with subappressed hairs, green, somewhat angular ; underside of leaflets with *3-4 pairs of tubercles* ± 0,1 mm Ø, *one tubercle* also beneath the tip of each leaflet.

Granitic outcrops : moist grassy spot ; ?black clay ; 220-300 m alt.

I. pilosa Poir., *excl.* var. *multiflora* Bak. f. (= *I. fulvopilosa)*.

syn.: *I. guineensis* Schumach. & Thonn. ; *Hemispadon pilosus* Endl.

Annual or short-lived perennial herb 20-50 cm tall, erect or sometimes prostrate, spreadingly branched.

Sands ; rocks ; sandy soils ; waste places ; plantations of *Manihot,* sometimes abundant ; stony places ; to ± 800 m alt.

Comprises 2 vars. ; disjunct area.

I. platyspira J. B. Gillett ex Thulin & M. G. Gilbert – Icon. : Nord. J. Bot. 22 : 212, 2003.

Perennial herb with radiating decumbent stems up to ± 30 cm long from a taproot ; stems angular, ± sparsely pubescent with appressed biramous hairs ; pods *flat,* indehiscent, ± 4-4,5 mm wide, acute at the apex, sparsely strigose, *spirally coiled* in two full turns and forming an orbicular disk-like reddish structure ± 7-12 mm Ø and with a central hole ± 0,8-1 mm Ø ; these pods much resemble the fruits of *I. rautanenii* Bak. f. (Namibia) or *Medicago orbicularis* (L.) Bartal.

Silty or sandy soil in open *Commiphora-Acacia-Cordia* bushland ; 230-330 m alt.

I. pobeguinii J. B. Gillett

Erect half-woody herb 80 cm tall with ribbed, reddish-purple branches ; short medifixed hairs appressed ; standard densely covered outside by a golden-brown appressed indumentum ; fruit unknown.

Ecology unknown.

Only known from the type collected in 1904 or ante.

I. podocarpa Bak. f. & Martin ; Schrire in Kew Bull. 53 : 660, 1998.

Softly woody shrub 0,5-2 m tall, much-branched, with many stems ; branches brownish strigulose, obscurely ± 6-angled.

Brachystegia woodland ; savanna, open forest on clayey soils ; in thick undergrowth ; rocky hillsides, laterite outcrops ; thickets on a ferrugineous-argillaceous soil ; sometimes at termite mounds ; sometimes abundant ; 950-2100 m alt.

Resembling *I. rhynchocarpa.*

I. podophylla Benth. ex Harv. – Icon. : Hook. Ic. Pl. 18 : pl. 1800, 1888.

Slender, laxly branched erect shrublet, 30-90 cm tall ; branches long and simple, incurved ; *petiole 5-7,5 cm long with a terminal leaflet 0,6-1,8 cm long ;* petiole persistent when the leaflet falls off.

Coastal.

I. polysphaera Bak.

syn.: *I. dewevrei* Mich. ; *I. baoulensis* A. Chev.

Annual herb with erect stem 0,5-2 m tall becoming very ramose ; scabrous-hispidulous, the hairs often brownish.

Savannas ; overgrazed areas ; old cultivations ; open spot with shallow soil ; 900 (? and less)-1800 m alt.

I. praticola Bak. f. – Icon. : Vierteljahrsschr. Naturf. Ges. Zürich 70 : 217, 1925.

Erect annual herb, probably to 60 cm tall.

Ecology unknown ; 400-500 m alt.

Botswana.

I. prieureana Guill. & Perr.

syn.: *I. kouriensis* Tiss. ; *I. stenophylla* Guill. & Perr. var. *latifolia* A. Rich. and var. *brachypoda* Steud. ex Bak.

Herbaceous or ± woody annual plant 40-80 cm tall, strigose, the hairs white or, especially on the inflorescence, brown.

Grassland ; woodland ; sand ; sandy soils and stony places ; 550 (? and less)-1600 m alt.

Confused with *I. stenophylla.*

I. procumbens Torre 1960, non L. 1771, nom. illegit.

Shrublet or woody herb with many stems to 25 cm long, prostrate, ramose, canescent by long hairs.

Ecology unknown (stream valley).

Only known from the type collected in 1906.

Near *I. eylesiana* or perhaps identical.

I. pruinosa Welw. ex Bak.

Shrublet 60 cm tall with strong terete woody branches which like the rest of the plant are densely argenteo-canescent.

Rocky places, along the banks of a river ; sporadic.

Not in Gillett's revision.

I. pseudointricata J. B. Gillett – Cortés-Burns & al. (2004) : 698.

Shrublet to 20 cm (-70 cm in Socotra) tall ; young stems appressed silvery strigose.

Semidesert scrub with *Acacia* and *Commiphora* on limestone.

Socotra (widespread on coastal plains and foothills).

Species from the north of the Somalia-Masai Regional Centre of Endemism which has a number of endemic taxa in common with the Socotran flora.

I. pseudomoniliformis Schrire – Icon. : Kew Bull. 53 : 663, 1998.

Densely branching shrub 1,5-4 m tall ; stems angular, soon becoming terete, with brown hairs, becoming dark brown or grey, glabrous, longitudinally wrinkled, fissured.

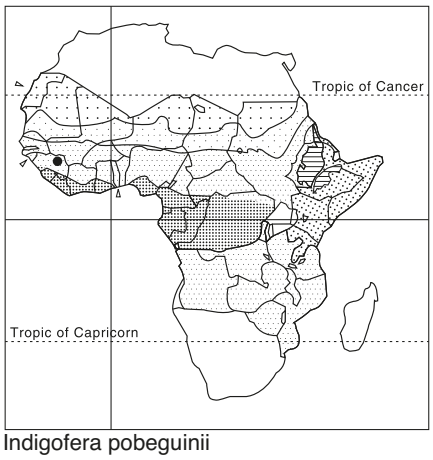
Open *Brachystegia* woodland ; dense shrubby vegetation ; rocky hilltops, inselbergs, granite outcrops ; c. 100-1200 m alt.

Has been confused with *I. ormocarpoides.*

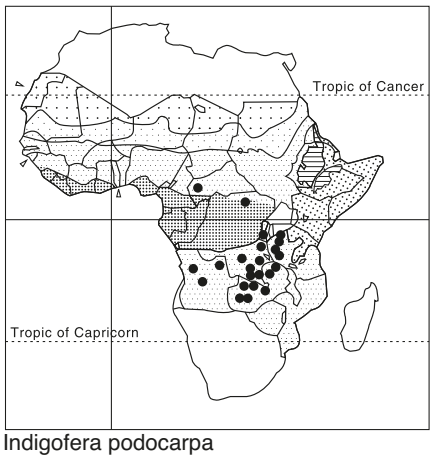
I. pseudosubulata Bak. f.

Perennial shrublet with several herbaceous, ascendant stems 10-90 cm tall arising from a woody rootstock.

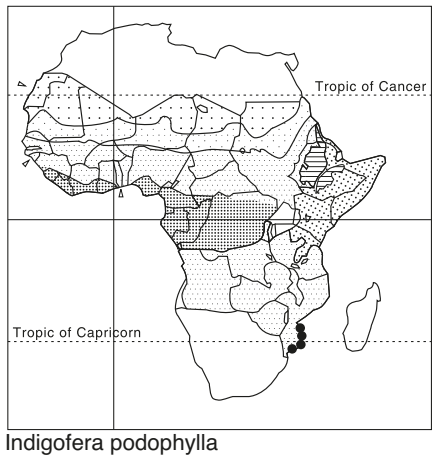
Along rivers.



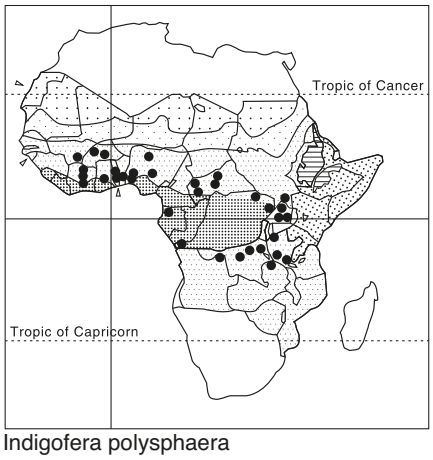
Indigofera pobeguinii



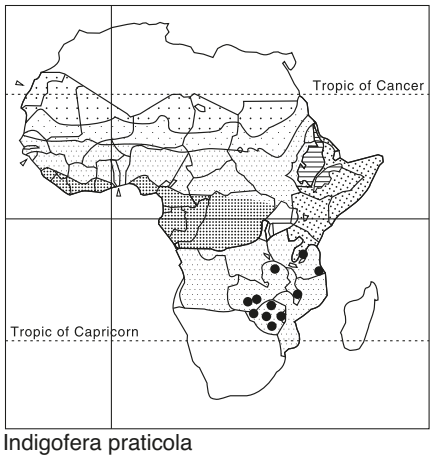
Indigofera podocarpa



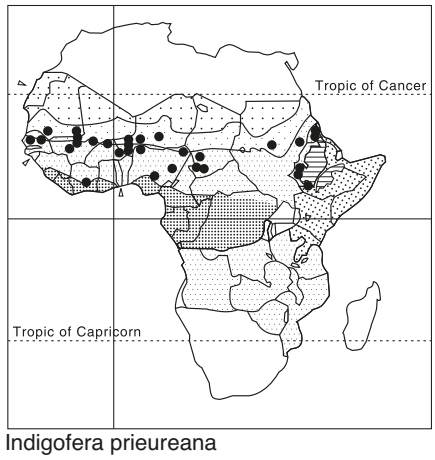
Indigofera podophylla



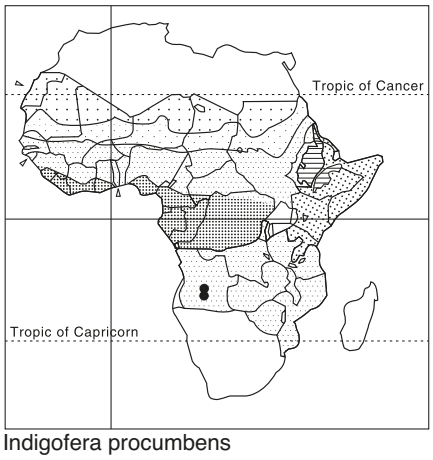
Indigofera polysphaera



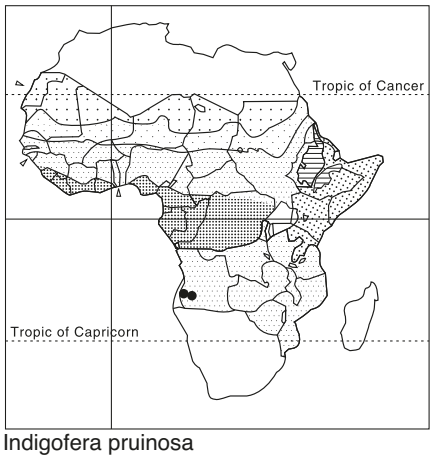
Indigofera praticola



Indigofera prieureana



Indigofera procumbens



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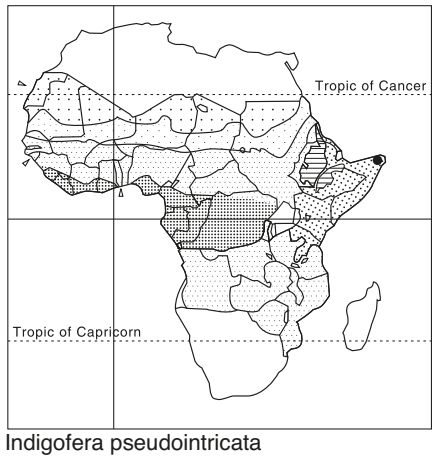
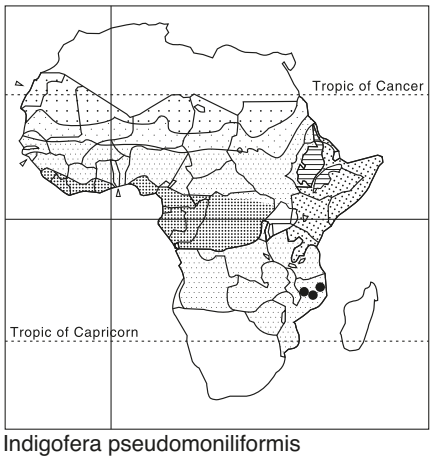
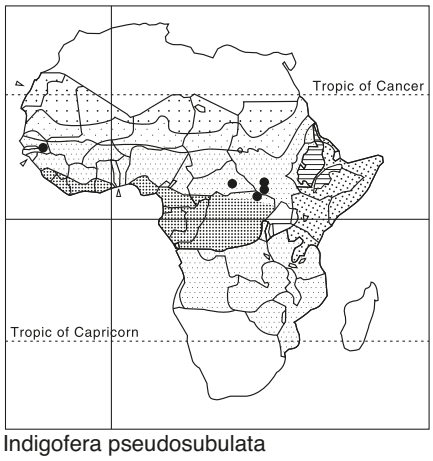


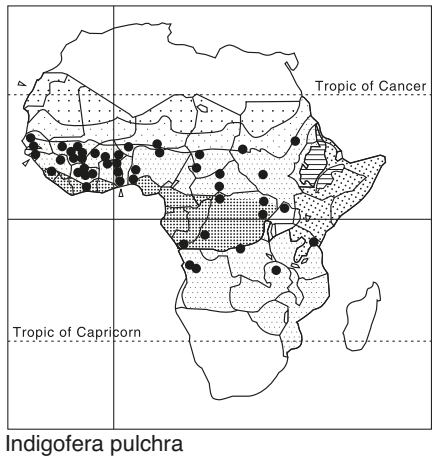
Indigofera pseudointricata



Indigofera pseudomoniliformis



Indigofera pseudosubulata



Indigofera pulchra

I. pulchra Willd., incl. var. *andongensis* Hiern

syn.: *I. rufescens* Poir.; *I. dorycnium* Fenzl, nom.; *I. dupuisii* Micheli

Stiff, erect branching annual herbaceous herb or softly woody bush 0,3-1,5 m tall, with white hairs often yellowish-brown on fruit, calyx and bracts.

Laterite, edge of bowé ; sands ; fallow land ; sandy hollows ; sometimes ruderal ; savannas ; old cultivations (sometimes invasive) ; roadsides ; dry thickets ; 100-1780 m alt.

Varies considerably (i.e. leaves simple to with 9 leaflets).

Not in Ethiopia. Gabon ?

I. brassii Bak. is perhaps an extreme variant of this species.

I. quarrei Cronquist

Annual, ramose-diffuse herb 0,5-1,5 m tall with slender branches, strigulose.

Savannas.

I. radicifera Cronquist

Plant with pale green prostrate stem, often rooting at the nodes, to 1 m or more long, sparsely strigulose, somewhat flattened.

Sandy places, on lake shores and in bushland ; 660-1700 m alt.

Botswana.

Confused with *I. spicata.*

I. ramosissima J. B. Gillett

Erect bushy herb 30-40 cm tall, with numerous stiffly spreading branches ; stems densely covered with erect multicellular hairs, the white biramous hairs sparser.

Grassland ; 1500-2100 m alt.

I. rautanenii Bak. f.

Shrub with distinctly woody stem and pale bark, 50-60 cm tall, sometimes with silver-grey villose branches.

Ecology unknown ; 100 m alt.

Namibia.

I. repens Cronquist

Probably perennial herb with prostrate stems to 1,5 m long, slightly strigulose or glabrous ; stem base (on 10-30 cm) without leaves and rooting.

Swamps.

I. rhynchocarpa Welw. ex Bak., excl. var. *latipinna* (I. M. Johnst.) J. B. Gillett (= *I. nembalensis)*.

syn.: *I. lonchocarpifolia* Bak.; *I. flavovirens* R. E. Fries ; *I. lignosa* De Wild.; *I. gyrocarpa* Bak. f.

Glaucescent shrub 0,5-2 m tall, but sometimes flowering on short coppice shoots ; stems cylindrical, rather woody and not or hardly winged, straight, branched ; branches erect-patent. Habit of *Galega officinalis* L. Indumentum white except on standard (dense, golden brown).

Brachystegia, Julbernardia or *Uapaca* woodland often with tall grass annually burned ; wooded grassland ; bushy wooded places ; thickets with tall herbage ; savannas ; margins of seasonally wet or riparian woodland, open bush associated with termite mounds and rocky outcrops ; 150-2200 m alt.

Varies considerably.

Comprises 2 vars. (var. **rhynchocarpa,** var. **uluguruensis** J. B. Gillett).

I. rhytidocarpa Benth. ex Harv.

Annual herb, prostrate or prostrate-ascending, with stem much branched from near the base and spread in an orbicular manner, the branches angular, subsimple, strigoso-setose, 15-45 cm tall.

Dry and moist sandy places ; hill slopes facing the sea, after the rains ; very dry sandy sparingly grassy parts ; in a pit nearly dried up, with *Hyphaene benguellensis, Arundo* sp.; sometimes abundant or frequent.

S. Africa, Namibia.

Comprises 2 subspp.

I. roseo-caerulea Bak. f.; Kew Bull. 52 : 156, 1997.

Softly woody shrub to 3 m tall, with ribbed stems, brownish or whitish strigulose.

Evergreen bushland and bamboo thickets ; forest margins ; secondary forest and shrub clumps in grassland ; savanna ; open forest ; ± 1500-3000 m alt.

I. rothii Bak.

Woody shrub or tree, copiously branched, with erecto-patent terete slightly argenteous branches and copious sharp erecto-patent spines often 3,5 cm long ; flowers from the spines.

Scrub ; forest margins ; 2150-2800 m alt.

I. rumphiensis Schire

Shrub to 2 m tall, with stems single or few, ribbed, red, brown or grey, ± densely brown or hyaline strigose (hair tips often spreading), villous or sometimes hirsute, becoming glabrous, longitudinally wrinkled and fissured later.

Brachystegia, Uapaca or *Protea* woodland ; scrub or riverine forest ; often on rocky hillsides ; ± 1500-2000 m alt.

Perhaps most closely related to *I. sutherlandioides ;* also near *I. lyallii.*

I. ruspolii Bak. f.

Much-branched shrub to 90 cm tall ; branches with blackish bark.

Semi-desert grassland ; dry deciduous bushland ; 50-1400 m alt. (vide *I. sabulosa)*.

I. sabulosa Thulin

Shrublet ± 25-90 cm tall ; young stems densely covered with spreading white hairs, terete.

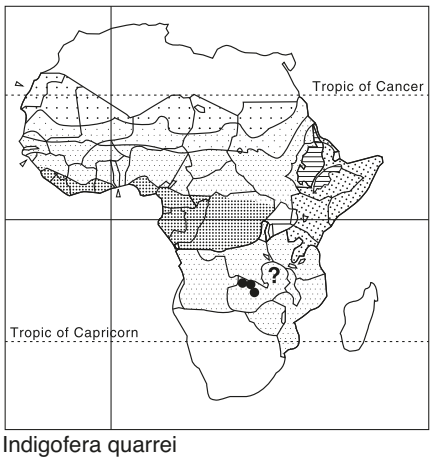
Acacia-Commiphora bushland in red sandy or silty soil with *Dalbergia uarandensis, Dichrostachys kirkii, Jatropha dichtar, Cordyla somalensis, Indigofera ruspolii, Bourreria orbicularis ;* 150-±500 m alt.

I. sanguinea N. E. Br. – Icon.: Fabian & Germishuizen, Wild Flow. North. S. Africa : 187, 1997.

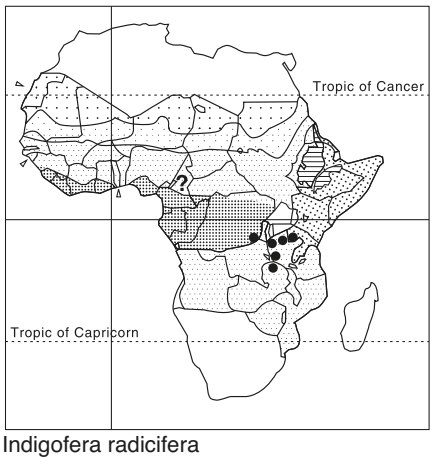
Herbaceous perennial plant with semi-erect stems 8-30 cm tall, pubescent with ± spreading hairs, arising from a woody rootstock.

Ecology unknown in tropical Africa ; grassland in S. Africa.

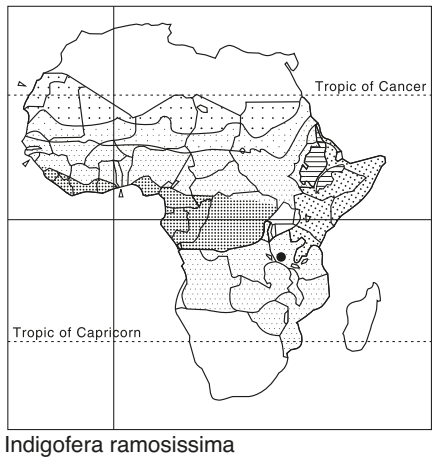
S. Africa.



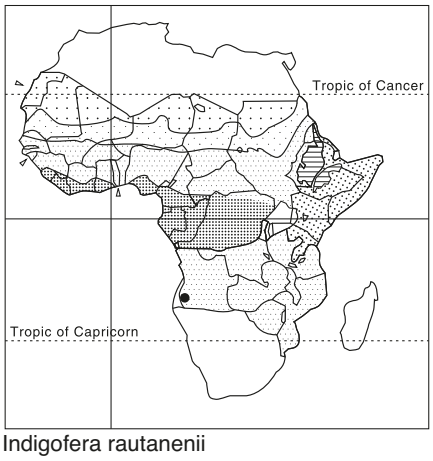
Indigofera quarrei



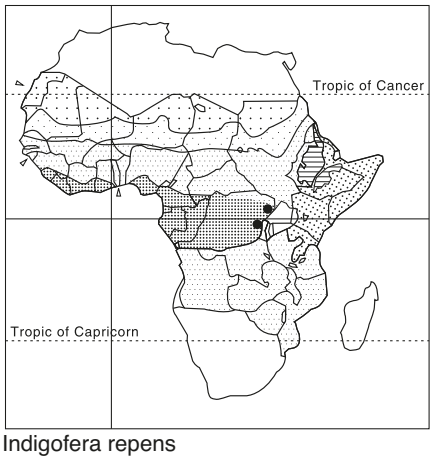
Indigofera radicifera



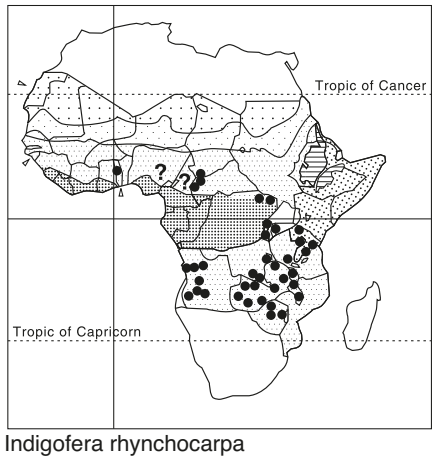
Indigofera ramosissima



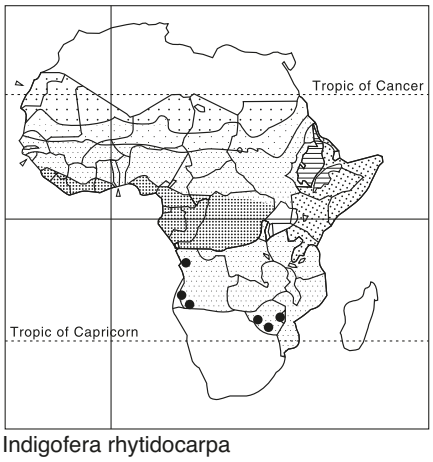
Indigofera rautanenii



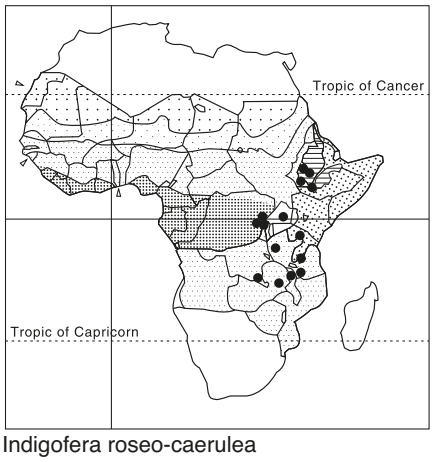
Indigofera repens



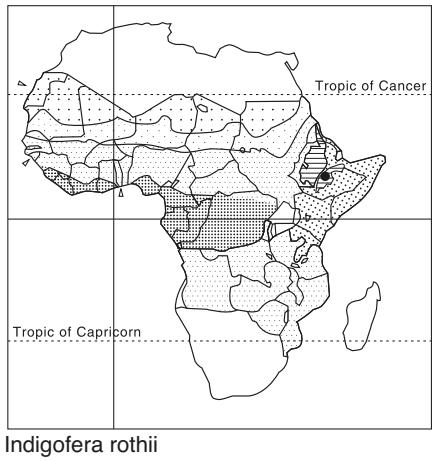
Indigofera rhynchocarpa



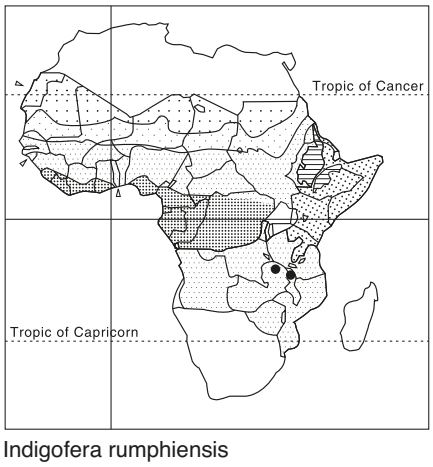
Indigofera rhytidocarpa



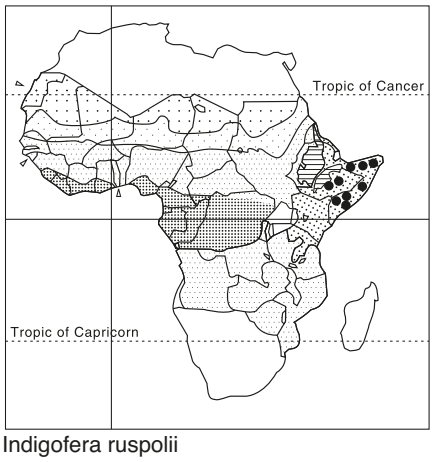
Indigofera roseo-caerulea



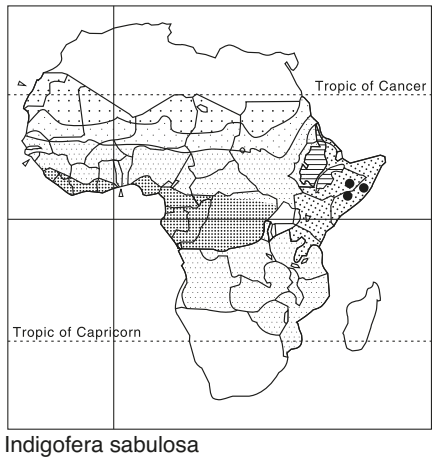
Indigofera rothii



Indigofera rumphiensis



Indigofera ruspolii



Indigofera sabulosa

INDIGOFERA

I. santosii Torre

Shrub ± 1,5-2 m tall, with glabrous stem ; young branches with appressed white hairs.

Rock crevices.

I. scarciesii Scott-Elliot

Herbaceous shoots yellow-glaucous, delicate, 10-15 cm tall arising from a woody rootstock.

Wooded savanna on fine gravelly soil ; hard laterite.

The leaflets have *curious translucent lateral veins* of a type not seen elsewhere in *Indigofera.*

I. schimperi Jaub. & Spach, incl. var. *oxyphylla* Franch. – Icon.: Pooley, A Field Guide to Wild flowers Kwazulu-Natal : 391, 1998.

Shrubby perennial with stems silvery pubescent, prostrate or ascending to 30 cm or less often erect and to 1,5 m tall ; rootstock woody.

Grassland ; bushland ; woodland ; seasonally swampy places ; black cotton soil ; wet ground ; sandy ground ; alluvial tracts near rivers ; elsewhere reported to be salt tolerant ; 100-1600 m alt.

Very variable.

Botswana, S. Africa, Namibia.

Comprises 4 vars.

Not in Zaire (= *I. spicata)*.

I. schliebenii Harms

Very ramose erect annual or short-lived perennial herb 0,3-1,5 m tall, appressed brown and white strigose without multicellular hairs.

Grassland ; woodland ; rocky savanna ; 1600-1800 m alt.

I. scopiformis Thulin

Erect shrublet ± 0,4 m tall, much branched and broom-like ; young stems sparsely pubescent with appressed hairs ; older stems greenish, slightly sulcate ; with *gland-tipped* calyx-lobes and leaflets with a downcurved glandular mucro at the apex ; seeds and ripe fruit unknown.

Bushland on fixed dunes of orange sand ; locally abundant and sometimes dominating the ground cover ; ± 200-230 m alt.

Only known from the type collected in 1989.

I. sebungweensis J. B. Gillett

Ramose very woody shrub ± 1 m tall ; older branches with black-grey, c*racked* bark ; young branches with subred bark ; hairs very short, appressed, dense ; corolla unknown.

Sandstone outcrops ; shallow soil over rocks.

I. secundiflora Poir., excl. var. *glandulosissima* R. E. Fries (= *I. atriceps)*.

Stout erect annual herb 0,2-1,3 m tall ; stems rather densely covered with white somewhat crisped biramous hairs and often also with red spreading multicellular hairs.

Swamp ; waste places ; grassland ; woodland ; disturbed or moist ground ; laterite rocky outcrops with wet flushes and thin soil with *Selaginella njamnjamensis, Aeollanthus* spp., *Aloe* sp. and many annuals, on rocks along small brook ; along wadi on muddy sand ; dunes with *Aristida mutabilis ;* clearings ; undergrowth near river ; savannas ; 900 (and certainly less) -2200 m alt.

INDIGOFERA SECUNDIFLORA

Comprises 4 vars.: – **secundiflora** (syn.: *I. oligosperma* DC.; *I. glutinosa* Vahl ex Schumach. 1829, non Perr. ex DC. 1825) ; – var. **rubripilosa** De Wild. (syn.: *I. bequaertii* De Wild.; *I. secundiflora* var. *gondarensis* Pic. Serm.) ; – var. **schimperi** Tiss.: – var. **oubanguiensis** Tiss. (non *I. oubanguiensis* Tiss.).

I. sedgewickiana Vatke & Hildebr.

Slender shrub to 4 m tall ; stems strigulose.

Semi-evergreen bushland on limestone ; 980-1340 m alt.

Yemen (found in 1995, and seeds of Thulin & al.'s collection there grown in green houses of Bot. Gard., Uppsala, Sweden ; See M. Thulin & al. in I. Friis & O. Ryding, Eds., Biodiversity Research in the Horn of Africa Region ; *Biol. Skr.* 54 : 147, 2001).

Not cited in Gillett's monograph.

I. semitrijuga Forssk., *excl.* var. *tetrasperma* DC. (= *I. argentea)* and var. *macrocarpa* Vatke (= ? *I. argentea)*.

syn.: *I. somalensis* Vatke

Stem fruticose, ± 30 cm tall, copiously and diffusely branched from the base, the branches erecto-patent, firm, terete, glaucous-silvery (densely covered with ± spreading hairs).

Sandy or silty, often saline ground ; 0-250 m alt.

Arabia.

Easily confused with several other argenteous desert species especially when they are severely cut back under very arid conditions (fide Gillett).

I. senegalensis Lam.

syn.: *Brissonia trapezicarpa* Desv.

Erect, annual, sometimes half-prostrate herb with stems 25-40 cm long ; branchlets slender, angular, moderately silvery.

Subarid areas ; humid sands ; sandy waste ground ; sandy-muddy soil ; muddy hollows ; sometimes abundant ; clay.

I. sessiliflora DC.

syn.: *I. tribuloides* Boiss.

Annual herb ; stem 2-15-30(-100) cm long, procumbent or suberect, copiously and diffusely branched from the base ; branches slender wide-spreading, angular, moderately silvery.

Arid areas ; sandy or sandy-clayey soils ; coastal plains ; meadows with *Aristida ;* also in cultivations ; to 640 m alt. (? and more). – In Sudan coming to life in the rains, then carpeting desert areas with a sort of "grass covering" (fide Burkill, Useful Pl. W. Trop. Afr. 3 : 379, 1995) ; gravels on compact clay.

Egypt ; Arabia ; Pakistan ; India (Sind, NW Punjab, NE Rajasthan).

I. setiflora Bak.

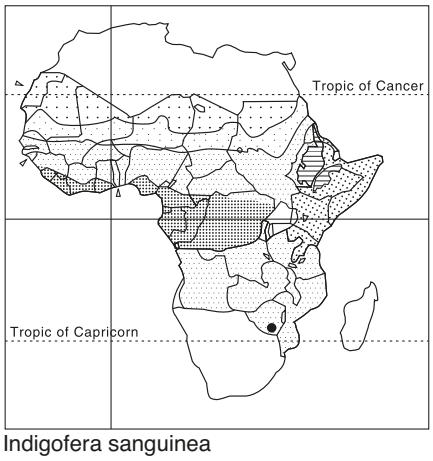
syn.: *I. accepta* N. E. Br.

Erect copiously branched herbaceous perennial herb ; stems reddish, softly setose, 20-60 cm tall, with slender finely grey-hispid branches that arise from a woody rootstock.

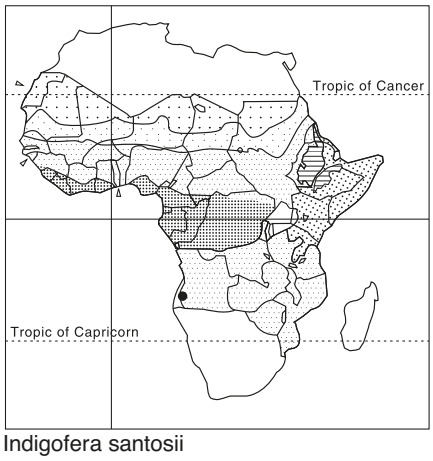
Exposed grassy somewhat sandy places ; borders of forests ; deciduous woodland, especially on gritty soil ; 900 m alt.

Varies greatly.

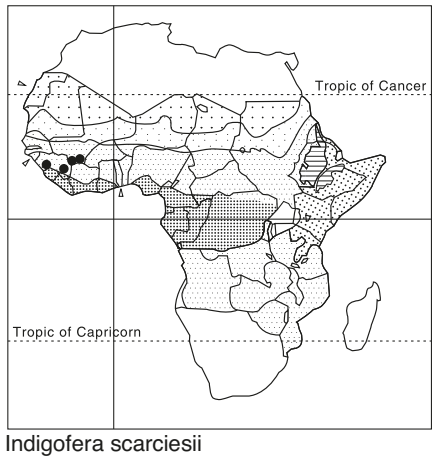
S. Africa.



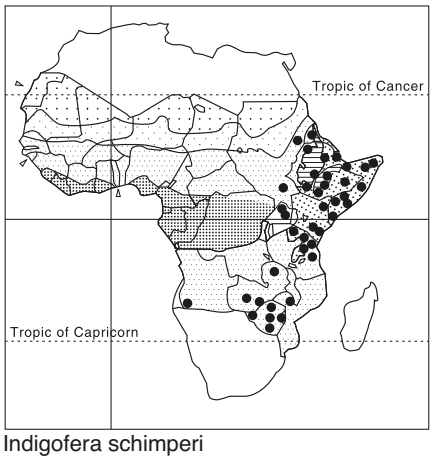
Indigofera sanguinea



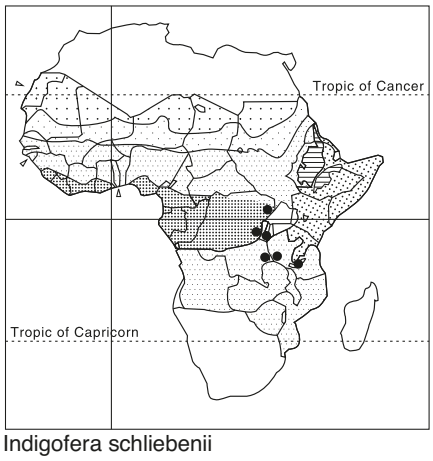
Indigofera santosii



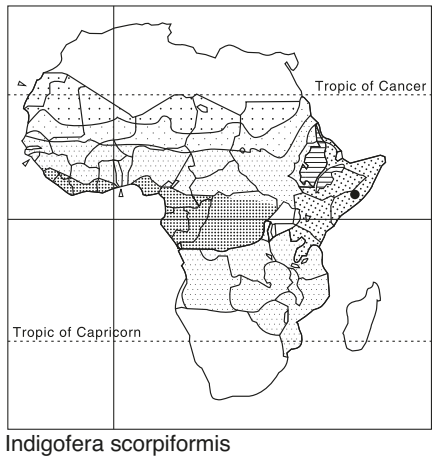
Indigofera scarciesii



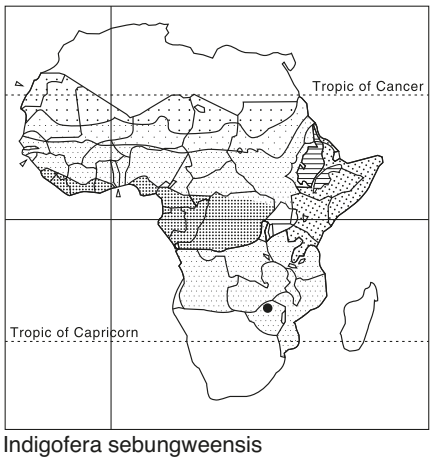
Indigofera schimperi



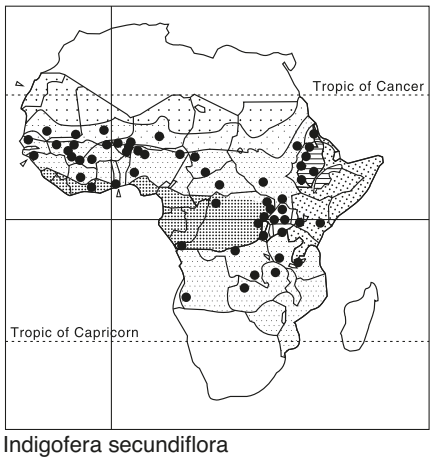
Indigofera schliebenii



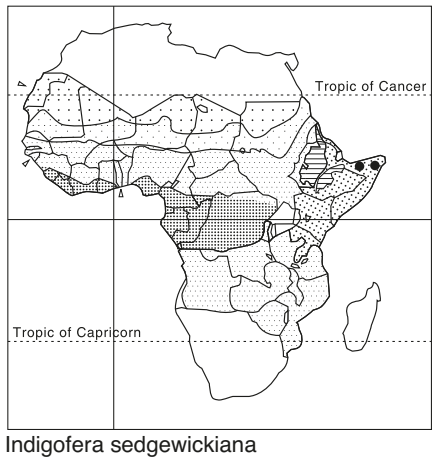
Indigofera scorpiformis



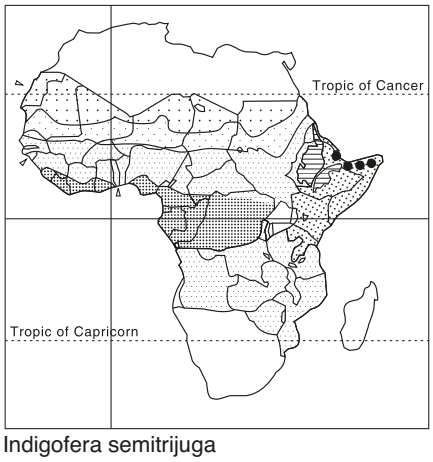
Indigofera sebungweensis



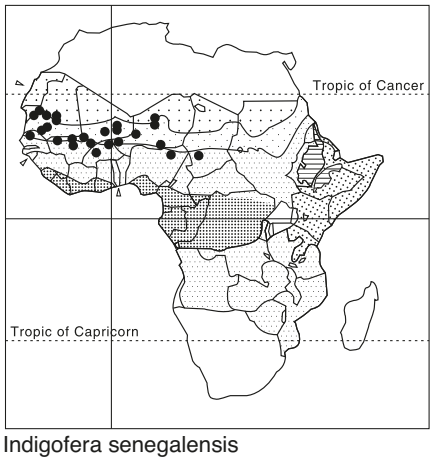
Indigofera secundiflora



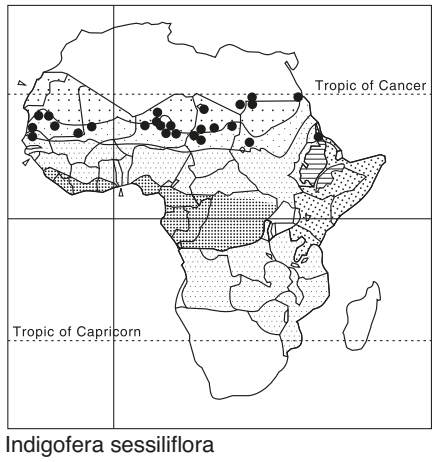
Indigofera sedgewickiana



Indigofera semitrijuga



Indigofera senegalensis



Indigofera sessiliflora

I. simplicifolia Lam.

syn.: *I. tetrasperma* Pers. var. *hexasperma* Vatke ; *I. polysperma* De Wild. & Th. Durand

Erect branching annual herb 0,5-1,5 m tall, from a taproot, somewhat strigulose throughout, the hairs strictly appressed. Habit of *Lythrum hyssopifolia* L.

Short grassland ; old cultivations ; on poor soils ; humid or flooded areas ; hollows ; open shortly-bushy places at the margins of forests ; bushy wooded places with various other species of *Indigofera ;* river banks ; 0-1300 m alt.

Confused with *I. tetrasperma.*

I. sisalis J. B. Gillett

Annual herb with prostrate or spreading, lightly appressed strigose branches.

Sisal plantations ; sandy open spots in savanna ; roadsides ; cultivated land ; river banks ; in clusters among grass ; pioneer on bare ground in *Pseudoberlinia-Combretum* woodland ; bushland ; 400-900 m alt.

Possible introgressive hybridization with *I. hochstetteri.*

I. smutsii J. B. Gillett

Perennial plant with stiffly erect stems from a woody rootstock to 60 cm tall ; copious indumentum of multicellular hairs or not ; also biramose white appressed, scattered hairs.

Dry ground formerly cultivated ; *Brachystegia* woodland, recently burned ; dry burned grassland ; waste ground ; 1200-1500 m alt.

I. sordida Benth. ex Harv. – Icon.: Braam van Vyk & S. Malan, Field guide to wild flowers Witwatersrand & Pretoria : 211, 1988.

Plant with a thick woody rootstock from which arise numerous stems 30-45 cm tall, half herbaceous, terete, subsimple or branched from below ; every part of the plant covered with gland-tipped short bristles.

Ecology unknown in tropical Africa ; bushveld, often in sandy soil and along roadsides in S. Africa.

Botswana, S. Africa.

I. sparsa Bak., *excl.* var. *bongensis* Bak. f. (= *I. congolensis).*

Erect, slender annual, herbaceous, copiously branched herb to 25 cm tall ; young stems appressed pubescent.

Rocky places.

Confused with *I. brevicalyx* or *I. congolensis.*

I. sparteola Chiov.

Shrublet to ± 50 cm tall with young stems completely covered by appressed silvery hairs.

Coastal grassland on sand ; 10-310 m alt.; south to 2°39 N.

I. spicata Forssk.; Kew Bull. 48 : 727-733, 1993.

Perennial prostrate creeping herb ; stems radiating from a central rootstock, often somewhat flattened, thinly strigose ; biramous hairs medifixed, white, stiff, appressed.

Fallow land ; grassland ; woodland ; often on waste or cultivated ground ; 0-2700 m alt.

Comprises 2 vars.

Formerly widely cultivated as a dye plant (W. Africa) ; not mapped.

Yemen ; S. Africa ; Madagascar ; Mauritius.

I. spiniflora Hochst. & Steud. ex Boiss. – Cortés-Burns & al. (2004) : 705-706.

syn.: *I. spinosa* Forssk. var. *spiniflora* (Hochst. & Steud. ex Boiss.) Schweinf. ex Chiov. in Pirotta and fa. *densissima* Chiov.

Much-branched prostrate to ascending perennial shrublet or woody herb ; young stems appressed silvery ; flowers to 20 from the spine and borne throughout its length (mature inflorescence spines *green,* to 5 cm long in luxuriant plants, rather weak and not very prickly at the tip).

Dry grassland ; *Acacia-Commiphora* bushland ; 70-850 m alt.

Yemen ; Socotra (markedly different from mainland specimens).

I. spinosa Forssk., *excl.* var. *spiniflora* (Hochst. & Steud. ex Boiss.) Schweinf. ex Chiov. in Pirotta (= *I. spiniflora)*, but incl. var. *microphylla* A. Rich.

Stiff, intricate shrublet to 50 cm tall with young stems terete, densely covered with stiff appressed white hairs ; older stems glabrescent and often corky at the base ; with copious sharp rigid slender spines 1,25-3,75 cm long ; flowers 2-4 from the spine and borne above its middle (mature inflorescence spines *golden brown,* rarely exceeding 2 cm, strong and prickly at the tip).

Semi-desert grassland (often abundant) ; drier *Acacia, Commiphora* deciduous bushland ; usually on stony ground ; 60-1580 m alt.

Arabia.

I. splendens Ficalho & Hiern – Icon.: Trans. Linn. Soc., Ser. 2, 2 : pl.: 3, 1881.

Shrub ; leaflets 11-23 : 7,5-10 mm long ; racemes 4-9 mm long ; corolla 10-17 mm long ; pod straight.

Ecology unknown (? along stream bed).

Not in Gillett's revision.

Only known from the two syntypes collected in 1878.

Near *I. sutherlandioides* and *I. fulgens.*

I. stenophylla Guill. & Perr., *excl.* var. *latifolia* A. Rich. and var. *brachypoda* Steud. ex Bak. (= *I. prieureana)* and *excl.* var. *nyassae* Bak. f. (= *I. antunesiana)*; *but incl.* var. *macrocarpa* Guill. & Perr.

Stiffly erect branching annual herb 40-90 cm tall, ± woody, everywhere sparsely strigose, the hairs strictly appressed except on the calyx, white or, especially on the inflorescence, brown.

Short grassland ; pathsides ; cultivations ; rocks ; scree ; colluvium ; lateritic soils ; clayey-sandstony soils ; fallow land ; savannas ; 550 (and less)-1500 m alt.

Comprises 2 vars.

Closely related to and scarcely distinct from *I. prieureana.*

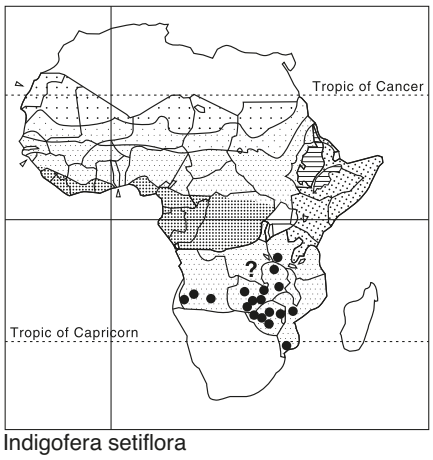
I. strobilifera (Hochst.) Hochst. ex Bak.

syn.: *Eilemanthus strobilifer* Hochst.; *Indigofera lupulina* Bak.

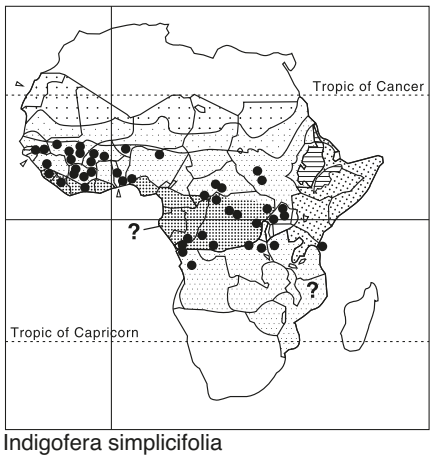
Annual, herbaceous or half-woody herb 30-35 cm tall, ± densely covered with long softly silky pale brown hairs in addition to biramous hairs on the leaflets and minute glandular hairs on the margins of the bracts ; branches divaricate, firm, angular ; inflorescence bracts aggregated to form a strobilus ; a very distinct and remarkable species.

Sandy soil in deciduous woodland and bushland ; waste places ; sandy grassland near the sea ; fixed dunes ; "tigerbush" ; river banks ; dominant plant in over-grazed pasture (Kenya) ; 0-1300 m alt.

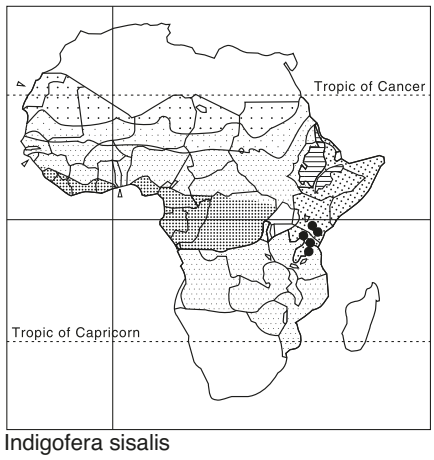
Comprises 2 subspp.



Indigofera setiflora



Indigofera simplicifolia



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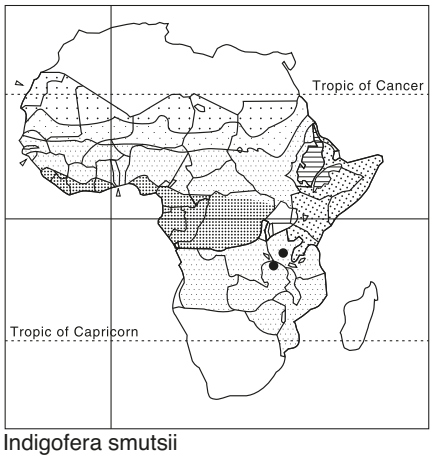
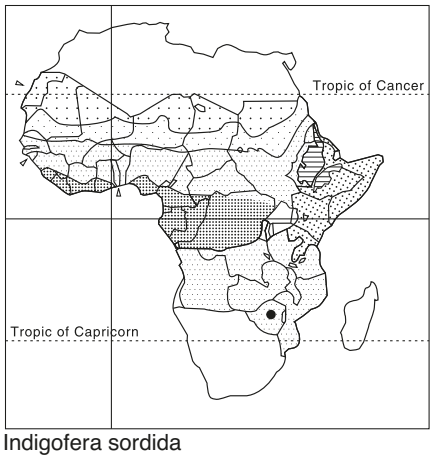
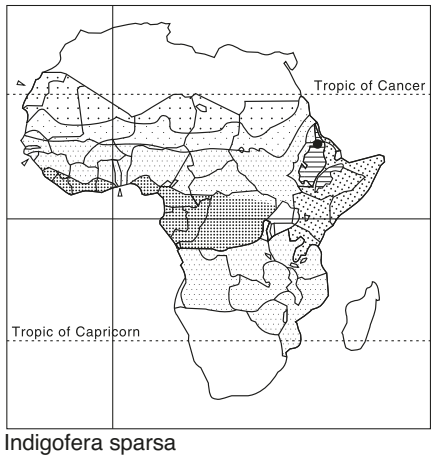


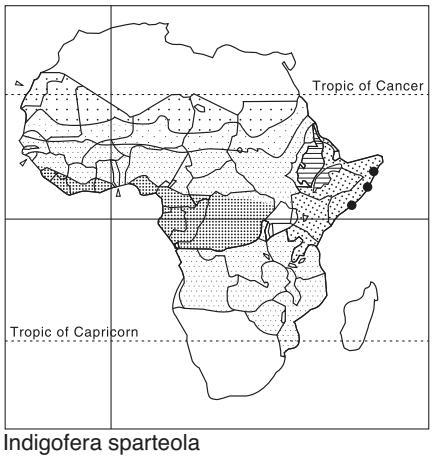
Indigofera smutsii



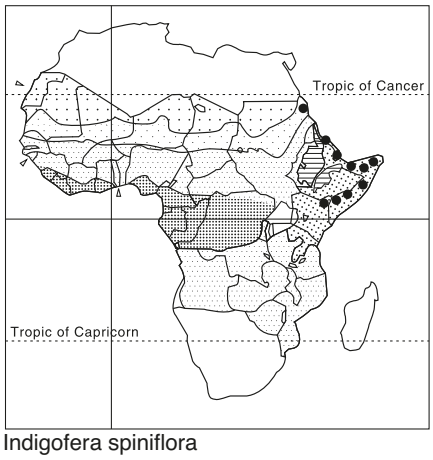
Indigofera sordida



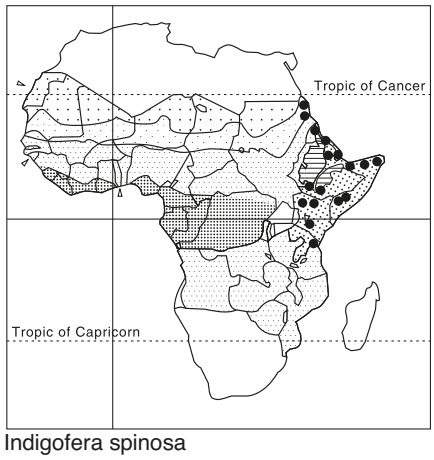
Indigofera sparsa



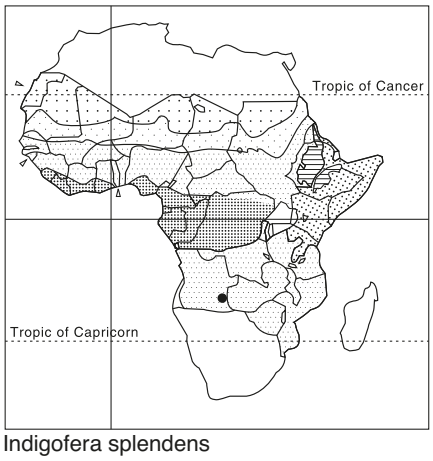
Indigofera sparteola



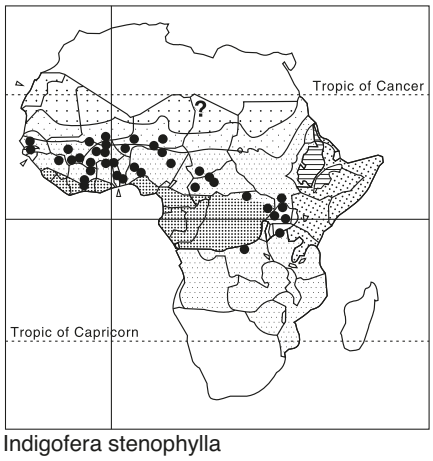
Indigofera spiniflora



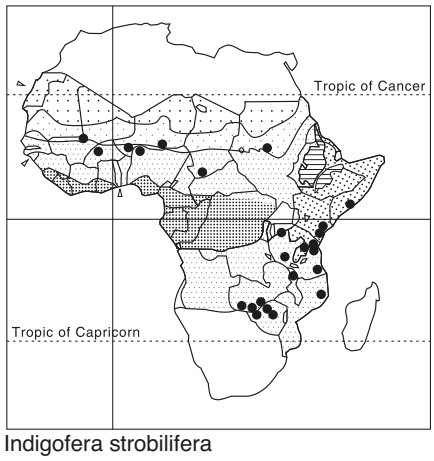
Indigofera spinosa



Indigofera splendens



Indigofera stenophylla



Indigofera strobilifera

I. suaveolens Jaub. & Spach, *excl.* var. *subquadriflora* Chiov. and var. *pseudocongolensis* Chiov. (= *I. vohemarensis)*.

syn.: *I. kerensis* Chiov.; *I. sparsiflora* Hochst., nom.

Shrublet much-branched, with stem 30 cm tall, woody, erect, the branches erecto-patent, coated with silvery pubescence. Smelling of coumarin.

Woodland; *Acacia-Commiphora* bushland; semi-desert grassland; on a variety of soil types; clayey ground, temporarily very humid; rocky small gully; sometimes very abundant; 150-1200 m alt.

Not in East Africa and Zaire (= *I. vohemarensis)*.

I. subargentea De Wild.

syn.: *I. kandoensis* Bak. f.

Branching prostrate or ascending annual herb 0,1-1 m tall with ± densely strigulose stems, characteristic greenish-yellow when young.

Swamps; short grassland; fallow arable land; black cotton soil area; savanna; 1000-1125 m alt.

Comprises 2 vars.

I. subcorymbosa Bak., incl. var. *eylesii* Bak. f.

Slender erect distantly branched shrub 0,6-3 m tall; new branches green, striate, sparsely white pubescent; older stems cylindrical, blackish-grey, with circular lenticels; leaves soon deciduous. Habit of a *Coronilla.*

Deciduous thickets; *Brachystegia* woodland; riparian forest margins; rocky spreading bushy places, among ferns and shrubs; (var. **subcorymbosa)** 700-1700 m alt.

- Riparian woodland; woodland with tall grass annually burned, forest margins, gorges, marsh banks, lake shores; 780-1600 m alt. (var. **grandis)**.

Comprises 2 vars.: – var. **subcorymbosa;** – var. **grandis** Schrire, Kew Bull. 53: 665, 1998. – Intermediates between them are known.

I. subulifera Welw. ex Bak.

Annual erect, ramose 0,5-1 m tall herb with stems reddish, appressed pubescent with short soft white hairs; pod ending in a *subulate* tip (persistent style-base).

Savanna; open forests; old cultivations; deciduous woodland; rocky gritty soil; sandy places at the skirts of forests; shortly bushy pastures; exposed rocky forests; rocky, slightly wooded gorge; clearing; sometimes abundant; 300-900 m alt.

Comprises 2 vars.

Not in Centr. Afr. Rep. (= *I. mildbraediana)*.

[I. suffruticosa Mill.]

syn.: *I. anil* L.; *I. uncinata* G. Don; *I. micrantha* Desv. 1826 (fide Hook. f.), non Bunge; *I. angolensis* D. Dietr.

Herbaceous or half-woody perennial bushy plant, to 1-2 m tall with strigulose branches. Closely resembling *I. tinctoria* but distinguished by its crescent-shaped pods.

Native of tropical America and probably introduced in the Old World; widely cultivated (indigo dye); intermediate plants between *I. suffruticosa* and *I. tinctoria* are known in South Tropical Africa.

Not mapped. Sometimes subspontaneous: weed of disturbed places, around cultivations (also used as cover-crop for coffee etc.; contour hedge planting).

I. sutherlandioides Welw. ex Bak.; Kew Bull. 52: 159, 1997.

syn.: *I. baumiana* Harms var. *paucijuga* R. E. Fries, var. *roseo-violacea* De Wild., var. *hockii* De Wild. (e descr.); *I. noldeae* Rossberg (e descr.).

Perennial ± woody plant or shrub, 0,5-2 m tall, with young branches cylindrical or slightly angular, ± clearly velvety-pubescent.

Savanna; pathsides; old cultivations; *Brachystegia* woodland, *Cryptosepalum-Copaifera* thicket and other fire-induced woodland; sand; seasonally waterlogged depressions; riparian- and swampy forest margins; rocky outcrops; 150-1700 m alt.

Varies greatly.

I. swaziensis Bolus – Icon.: Fabian & Germishuizen, Wild Flowers North. S. Africa: 191, 1997.

Slender, softly woody shrub to 3 m tall; the stems seem usually to persist, not dying back to ground level annually; branchlets with black, velvety hairs.

Evergreen forest margins; bushland; riparian forest, *Brachystegia* woodland, often at rocky outcrops (var. **perplexa***)*; 700-2000 m alt.

Varieties vary greatly in the indumentum. They intergrade in E. Africa, but their status needs to be re-assessed over their entire range.

S. Africa.

Comprises 2 vars.: – var. **swaziensis** (syn.: *I. mearnsii* Standley; *I. oliveri* Harms) – var. **perplexa** (N. E. Br.) J. B. Gillett

I. taborensis J. B. Gillett

Much-branched half-woody herb with pilose, brown, cylindrical branches.

Deciduous woodland; grassland; railway; sandy soil; 1050-1350 m alt.

I. tanaensis J. B. Gillett

Shrublet 20-30 cm tall; younger branches with a dense appressed silvery indumentum, the older ones smooth, reddish-black; pod unknown.

Acacia-Commiphora open bushland on red sandy soil; 100-200 m alt.

I. tanganyikensis Bak. f.

Erect much-branched shrublet or decumbent often shrubby herb 0,2-1 m tall with young branches ± densely spreading pubescent.

Short grassland; grassy savanna; degraded woodland; stony soils; roadsides; lake shores; *Acacia-Commiphora* open bushland; dry grassland; 0-2200 m alt.

Comprises 3 vars.

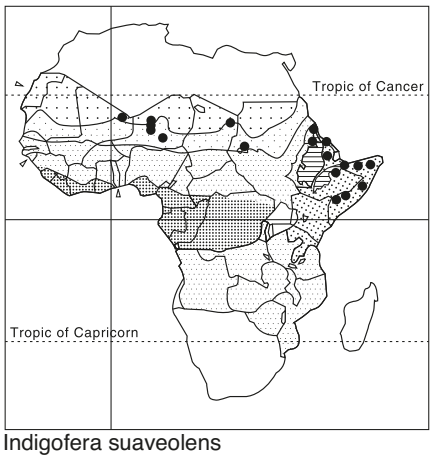
I. taruffiana Torre

? Erect ? shrub >0,5 m tall with rigid stems, very ramose, 4-angled with short appressed hairs; fruit unknown.

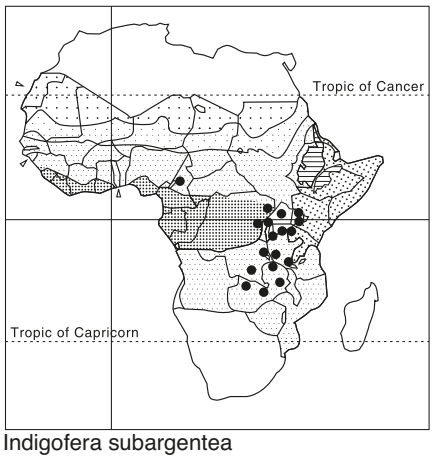
Ecology unknown; 1500-1700 m alt.

Collected twice: in 1914 and 1942.

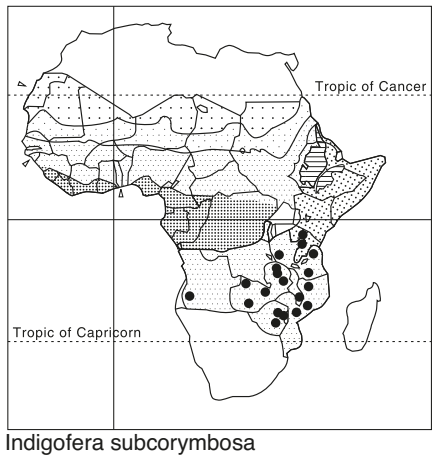
Near *I. hundtii* from the same area and whence the fruit is also unknown.



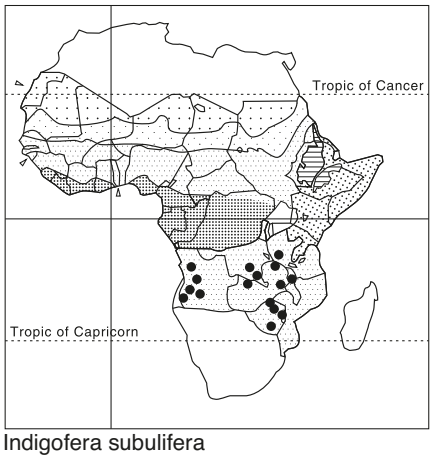
Indigofera suaveolens



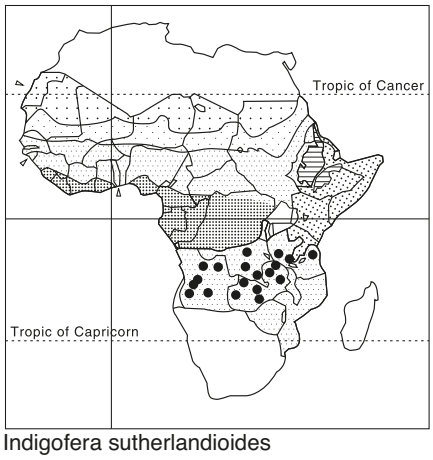
Indigofera subargentea



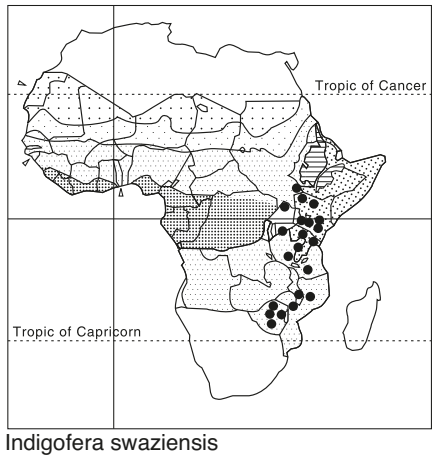
Indigofera subcorymbosa



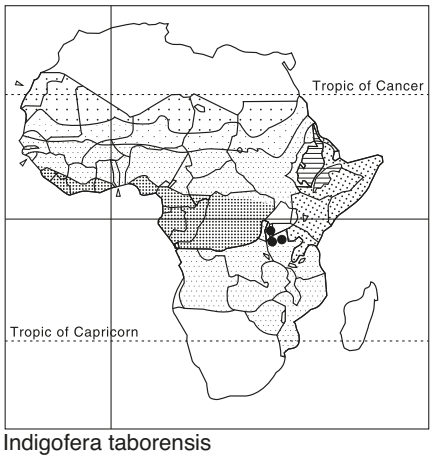
Indigofera subulifera



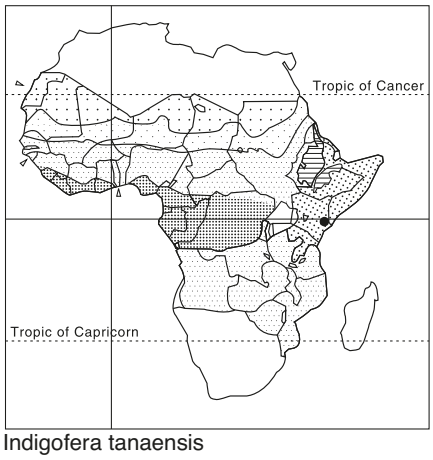
Indigofera sutherlandioides



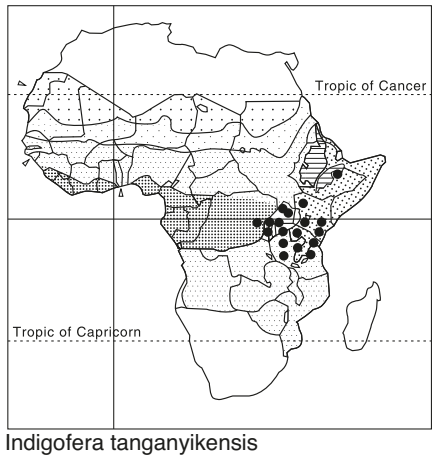
Indigofera swaziensis



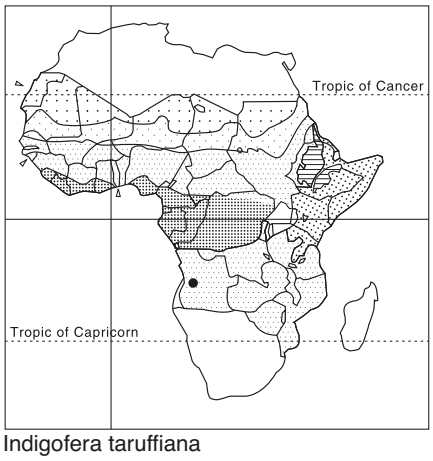
Indigofera taborensis



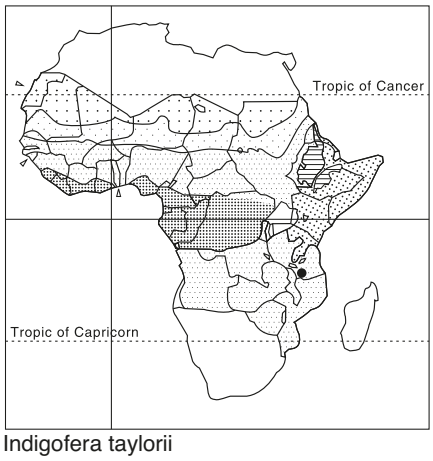
Indigofera tanaensis



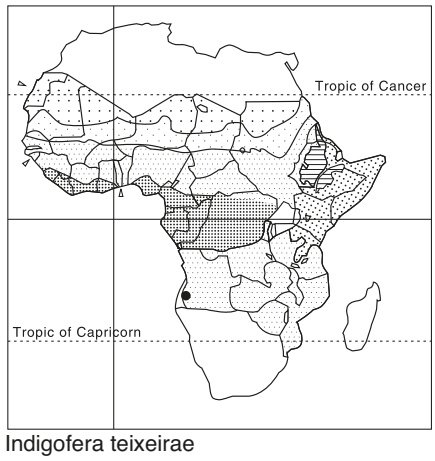
Indigofera tanganyikensis



Indigofera taruffiana



Indigofera taylorii



Indigofera teixeirae

I. taylorii J. B. Gillett

Perennial herb, subwoody with strictly prostrate, slightly compressed stems, radiating in all directions, brown-hispid.

Brachystegia-Uapaca woodland on grey sandy soil ; 900-1020 m alt.

Very local at some spots where however it is common.

I. teixeirae Torre

Annual or ? perennial herb with several prostrate stems ± 40 cm long, subcylindrical or subangular ; white or yellow by biramose hairs ± 1 mm long.

Ecology unknown (? subdesert) ; 745 m alt.

Namibia.

I. tenuis Milne-Redh.

Spreading or erect annual herb 22-120 cm tall, the branches sparsely appressed pilose or glabrescent ; flowers brick-red, forming splashes of colour. – Cf. **I. dissitiflora.**

Pathways on fairly dry ground ; short-grassed hard-pan soils ; *Hyparrhenia* savanna ; old cultivation on decayed granite soils ; sometimes common ; cleared bush on granite sandvelt ; 800-1500 m alt.

Comprises 2 subspp.

I. terminalis Bak., incl. var. *chevalieri* Bak. f.

Half-woody undershrub, 1-1,5 m tall.

Laterite (bowé) ; wooded hollow on plateau ; savanna.

Various intermediates with *I. macrocalyx.*

I. tetraptera Taub.

? Woody herb or shrub with very 4-angular, winged branches ; strigose by spreading, brown hairs.

In shadow along rivers ; rain-forest.

Not in Gillett, 1958.

I. tetrasperma Vahl ex Pers., *excl.* var. *hexasperma* Vatke (= *I. simplicifolia)*.

syn.: *I. tetrasperma* Vahl ex Pers. ampl. DC. and *I. tetrasperma* Schumach. & Thonn.

Suberect much branched undershrub 0,3-1 m tall, with long firm slender woody branches, the upper part striate and thinly silky.

Grassland ; roadsides ; waste places ; humid places ; savanna and esobe, often with *Imperata ;* cultivations ; coastal area.

Confused with *I. simplicifolia* but hairs on upper surface of leaf dense, set at an *angle of 80-90°* with the midrid.

I. thikaensis J. B. Gillett

Woody white-pilose perennial shrublet ± 65 cm tall, capable of vegetative reproduction by root-suckers ; fruit unknown (flowers apparently all fall off after opening, no fruit being formed and no fertile pollen-grains). It may thus be a sterile hybrid though it does not seem possible to suggest what the parent species could be.

Roadsides ; grassland ; 1470 m alt. – Common in a single small area.

I. thomsonii Bak. f.

Perennial herb with a woody rootstock and pubescent, numerous, slender, ramose stems, to ± 15 cm long.

Savanna ; dry, exposed slopes ; sand periodically wet ; grassland ; 1200-2100 m alt.

I. tinctoria L., excl. var. *arrecta* Berh. *(= I. arrecta) ;* Schrire in Kew Bull. 98 : 667, 1998 ; Cortés-Burns & al. (2004) : 700.

syn.: *I. sumatrana* Gaertn. ; *I. orthocarpa* (DC.) O. Berg in O. Berg & C. F. Schmidt 1863, non Presl 1844, nom. illegit. ; *I. bergii* Vatke ; *I. anil* L. var. *orthocarpa* DC. p.p. ; *I. houer* Forssk.

Erect annual to perennial herb or subshrub ± 0,35-2 m tall with stems thinly strigose or glabrescent by biramous mostly white hairs.

Bush margins ; cultivations and secondary growth ; especially on alluvial soil ; seasonally flooded grassland with scattered trees ; sandy and sandy-clayey very humid or flooded soils ; near permanent pool in sahelian zone ;dunes ; 0-400 m alt. – Kalahari sands on clay, riverbanks, cultivated land, roadsides, 0-1000 m (var. **arcuata** J. B. Gillett).

Botswana, S. Africa (Transvaal) ; Cape Verde Isl. ; S Arabia ; Socotra ; India ; Sri Lanka ; Malaya ; Indochina ; Philippines ; Indonesia ; New Guinea ; Australia. – Probably introduced in Madagascar ; introduced in tropical America.

Comprises 2 vars.

Formerly a major source of indigo dye, but now displaced by *I. arrecta.*

Very near *I. arrecta* but fruit longer (to 35 mm) often somewhat curved, indumentum white, leaflets rarely to 17(9-13).

I. torrei J. B. Gillett

Ramose undershrub ± 60 cm tall, with purple densely spreading-pilose branches ; ripe seeds unknown.

Savanna on white sandy soils.

Only known from the type collected in 1948.

I. trachyphylla Benth. ex Oliv.

Annual herb 20-50 cm tall, or perhaps more ; one single stem strigose with chiefly white, sometimes brownish, biramous hairs ; multicellular hairs usually present as well. Sometimes (in Zaire) perennial with several decumbent-ascending stems.

Brachystegia and other deciduous woodlands.

I. trialata A. Chev.

Erect almost leafless glabrous or slightly appressed pilose herb, or subwoody at the base, 0,6-1 m tall ; ramose towards the top ; stems slender, trialate, with wings 1-1,5 mm wide with scarious margins.

Schistose hill slopes at the margins of stream ; grassy savanna ; pool fringe in wooded savanna ; 250 m alt. – A rare plant.

I. trichopoda Lepr. ex Guill. & Perr.

Annual herb 30-50 cm tall ; flowers at the top of a very slender pedicel 25-35 mm long ; pedicel jointed just below the flower.

Lateritic ground ; sandstone ; gravelly places.

Comprises 2 vars.

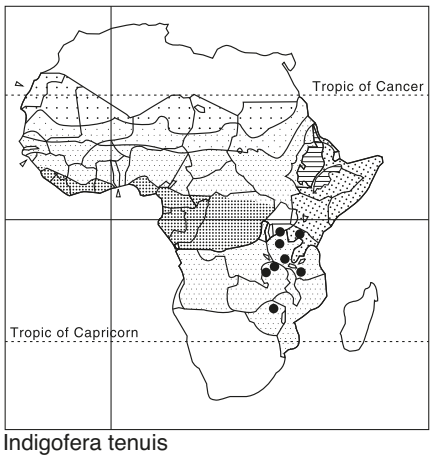
I. trigonelloides Jaub. & Spach ; with illustration in their Ill. pl. orient. 5 : tab. 482, 1856.

syn.: *I. aeruginis* Schweinf.

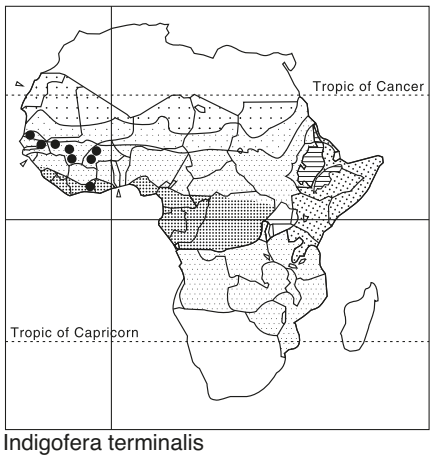
Erect much-branched herb to 30 cm tall ; silvery-silky on young parts, becoming slightly strigose.

Sandy slopes ; ± 1000 m alt.

Namibia (Kaokoveld, Grootfontein, Outjo). – Disjunct area similar to that of *I. disjuncta.*



Indigofera tenuis



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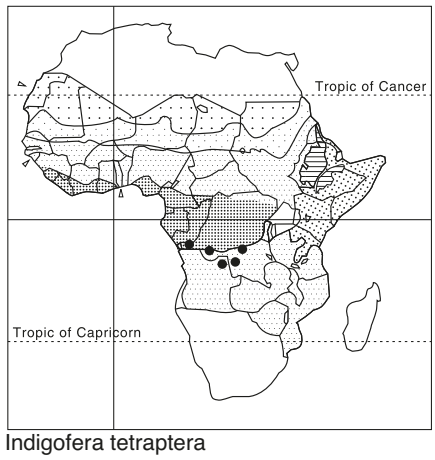
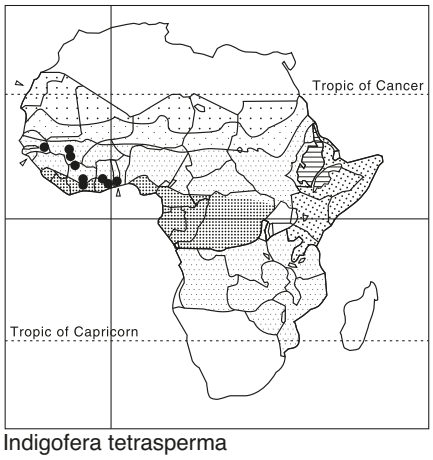


Indigofera tetraptera



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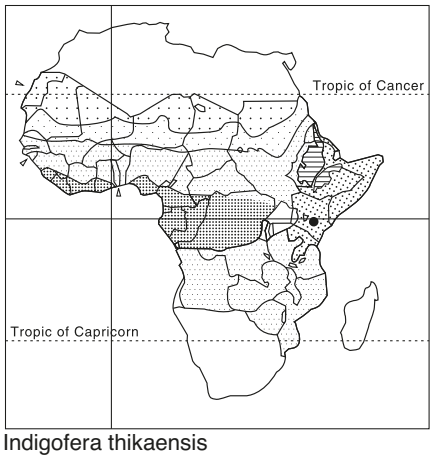
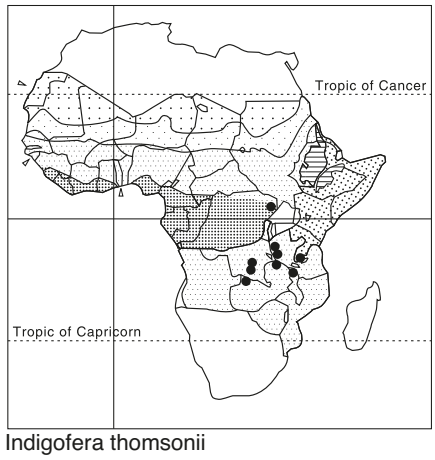
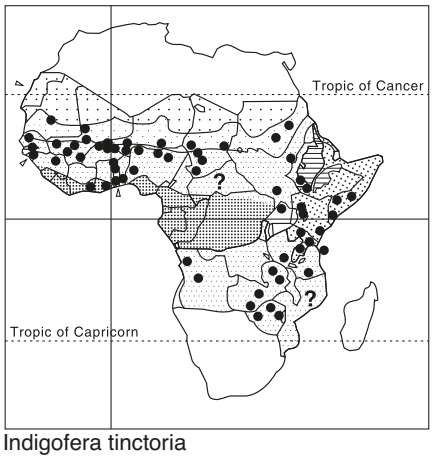


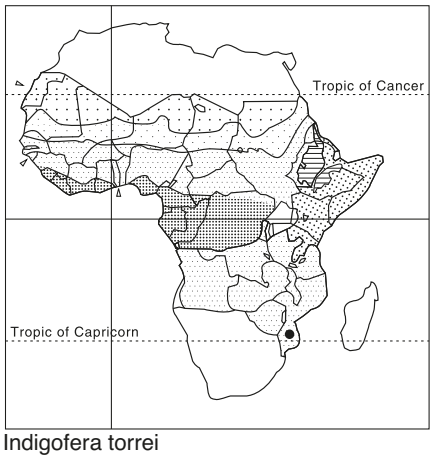
Indigofera thikaensis



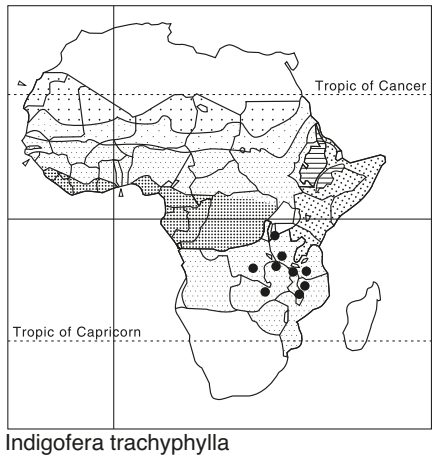
Indigofera thomsonii



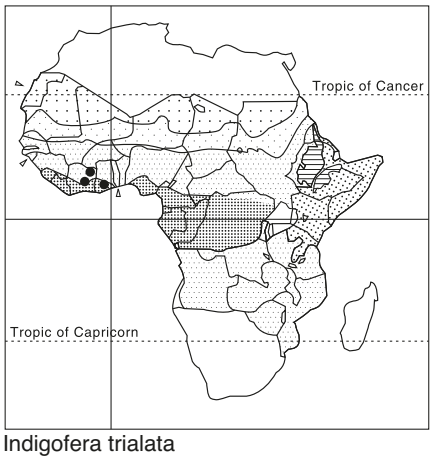
Indigofera tinctoria



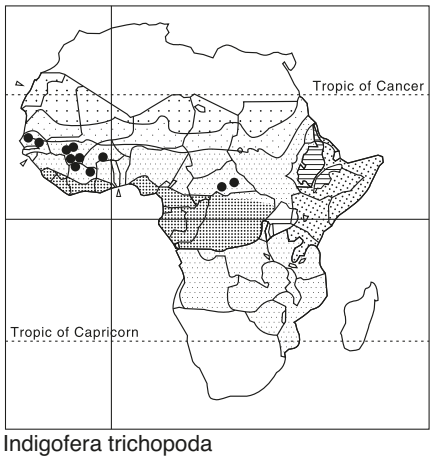
Indigofera torrei



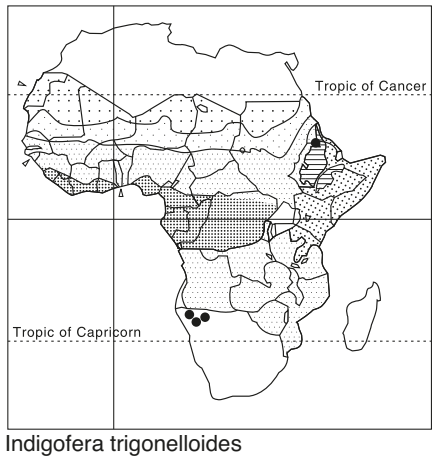
Indigofera trachyphylla



Indigofera trialata



Indigofera trichopoda



Indigofera trigonelloides

I. trita L. f.

Erect woody herb 0,5-2 m tall, often subscandent and then to 5 m long; indumentum thinly silky or dense-silvery (var. **nubica)** or coarsely strigose, never very dense; stems ridged. Sometimes sprawling or lax, erect or copiously branched.

Chiefly in secondary growth; *Acacia-Commiphora* bushland on black cotton soil; weed of disturbed ground; forest gallery; waste ground; woodland; savanna; forest edges; stony places; probably also deciduous bushland on clay; 0-2200 m alt. – Very invasive.

S. Africa; Namibia; S Madagascar; Central America, West Indies. – Var. **trita** occurs from W Pakistan, India, Sri Lanka, Burma, Timor to Australia.

Comprises 4 vars. in tropical Africa: – var. **maffei** (Chiov.) Ali [syn.: *I. spachii* Bak. var. *trifoliolata* Schweinf.]; – var. **scabra** (Roth) Ali [syn.: *I. trita* subsp. *scabra* (Roth) De Kort & Thijsse; *I. quartiniana* A. Rich.; *I. coronilloides* Jaub. & Spach 1856, non Mart. 1843, nom. illegit.; *I. umbraticola* Vatke; *I. retroflexa* Baill.; *I. spachii* Bak.; *I. rutschuruensis* De Wild.; *I. mucronata* Spreng. ex DC. 1825, non Lam.; *I. flaccida* Koenig ex Roxb.]; – var. **subulata** (Vahl ex Poir.) Ali [syn.: *I. carinata* De Wild.; *I. subulata* var. *microphylla* Chiov.; *I. dimorphophylla* Schinz; *I. thonningii* Schumach. & Thonn.; *I. tetragonoloba* E. Mey.; *I. subincana* N. E. Br.]; – var. **nubica** (J. B. Gillett) Boulos & Schrire [bas.: *I. subulata* var. *nubica* J. B. Gillett; syn.: *I. subulata* subsp. *subulata].*

Note: the combination *I. trita* var. *subulata* (Vahl ex Poir.) Ali was published in Bot. Not. 3: 558, 1958 [bas.: *I. subulata* Vahl ex Poir.]. In Flora of Egypt 1: 313, 1999, Boulos and Schrire made a new combination *I. trita* subsp. *subulata* (Vahl ex Poir.) Ali var. *nubica* (J. B. Gillett) based on *I. subulata* var. *nubica* J. B. Gillett. It seems that subsp. *subulata* (Vahl ex Poir.) Ali has not been validly published. In Index Kewensis, Suppl. 21: 190, 2002, only *I. trita* var. *nubica* (J. B. Gillett) Boulos & Schrire has been retained.

I. ugandensis Bak. f.

Erect somewhat woody herb 0,6-1,3 m tall; stems reddish, appressed strigulose with hairs ± 0,2 mm long.

Swampy grassland; forest or woodland margins; 1200-1500 m alt.

Rarely collected (6 specimens from 1914 to 1963).

I. vanderystii J. B. Gillett

Erect, ramose plant >50 cm tall, with ascending branches, ± ribbed, sub-scattered ± appressed pilose.

Ecology unknown.

Only known from the type collected in 1914.

Near *I. pulchra.*

I. vicioides Jaub. & Spach

Ramose, spreading annual or perennial herb, 30-50 cm tall; branches strigulose to pilose, arcuate-ascending.

Stony grassland; roadsides; deciduous woodland; savanna after burning: humid sand; pastures; sometimes on rocky soils; 900-2000 m alt.

Botswana, Namibia, S. Africa.

Comprises 3 vars.: – var. **vicioides** [syn.: *I. tenuicaulis* Klotzsch; *I. transvaalensis* Bak. f.; *I. divaricata* De Wild. 1923, non Jacq. 1798, nom. illegit.; *I. semlikiensis* Robyns & Boutique]; – var. **occidentalis** Tiss.: – var. **rogersii** (R. E. Fries) J. B. Gillett [syn.: *I. cognata* N. E. Br.; *I. hislopii* Bak. f.].

I. viscidissima Bak.

Branched erect herb to 1 m tall with several stems from a woody but normally annual rootstock; medifixed hairs white, spreading at the tips; short multicellular glandular reddish hairs very abundant.

Degraded woodland; *Brachystegia* woodland; along the bushy skirts of forests composed of *Parinari;* 660-1525 m alt.

Comprises 2 subspp.

I. vohemarensis Baill.

syn.: *Anila pentaphylla* (L.) Kuntze var. *trichocarpa* Kuntze; *Indigofera uhehensis* Harms; *I. minimifolia* Chiov.; *I. suaveolens* Jaub. & Spach var. *pseudocongolensis* Chiov. and var. *subquadriflora* Chiov.; *I. viscosa* Lam. var. *subglabra* A. Rich.

Erect branching annual or perennial herb with a taproot, 0,5-2 m tall, usually smelling of coumarin; branches appressed pilose or strigose.

Grassy and stony slopes; woodlland; cultivations; savannas; 0-1800 m alt.

Madagascar, Comoros.

I. volkensii Taub. – Icon.: Chiovenda in Cufodontis, Miss. Biol. Borana: fig. 10 p. 68, 1939.

syn.: *I. insularis* Chiov.; *I. phillipsiae* with var. *erecta* Chiov. and var. *prostrata* Chiov.; *I. sesquijuga* Chiov. s. str.; *I. viridiflora* Chiov.

Branching herb to 40 cm tall from a perennial rootstock; ± densely strigose or pilose, the hairs often spreading at the tips.

Acacia-Commiphora bushland; scattered tree grassland; weed in cultivated areas; sandy soil; woodland; dunes; 0-2200 m alt.

Very variable.

Arabia: Yemen (M. Thulin & al. in I. Friis & O. Ryding, Eds., Biodiversity Research in the Horn of Africa Region.; Biol. Skr. 54: 137, 2001).

I. wildiana J. B. Gillett

Erect, shrubby herb 0,6-1,3 m tall; branches reddish, strigulose.

Sand; grassland; sand veldt; under dense cover on kopje; 1050-1500 m alt.

Very near **I. asterocalycina.**

I. williamsonii (Harv.) N. E. Br.

bas.: *I. eriocarpa* E. Mey. var. *williamsonii* Harv.

Suffruticose or quite shrubby, robust and much-branched plant 30-90 cm tall; branches villoso-pubescent; leaflets obovate-oblong, glabrous above, thinly silky-subcanescent beneath.

Serpentine soil; hills in S. Africa.

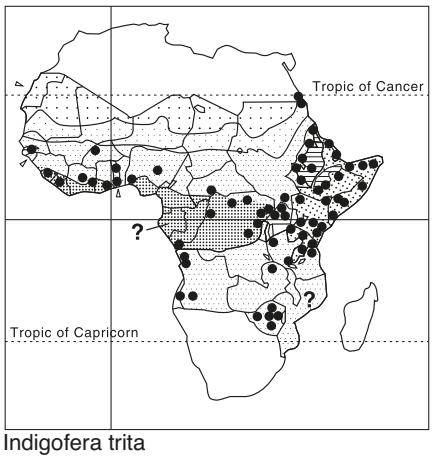
S. Africa.

I. wituensis Bak. f.

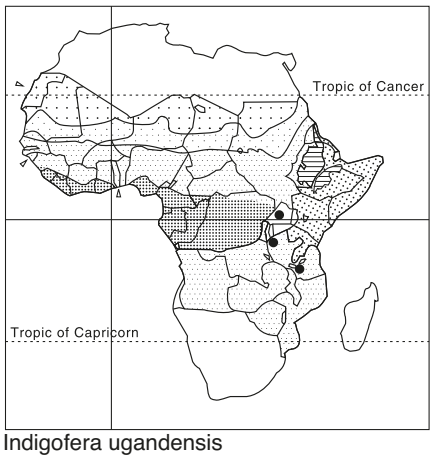
Erect annual herb to 60 cm tall; branches glabrous or with very few appressed hairs ± 0,5 mm long; leaflets with glandular margins.

Grassland; 0-300 m alt.

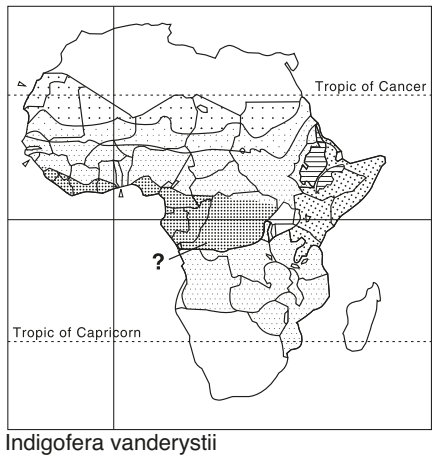
Comprises 2 vars.



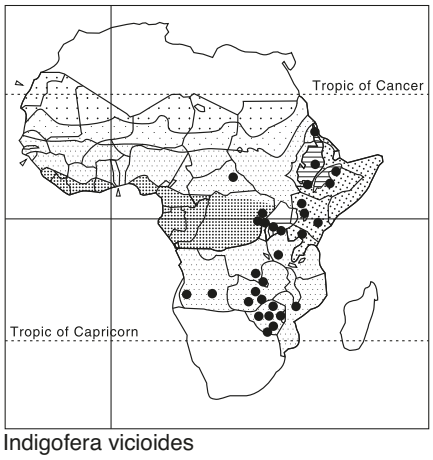
Indigofera trita



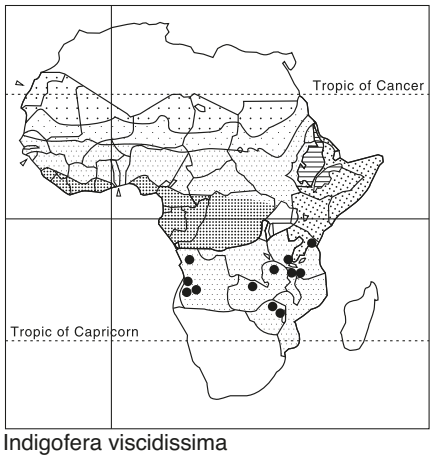
Indigofera ugandensis



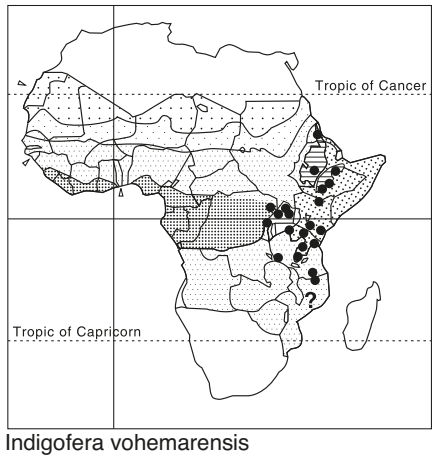
Indigofera vanderystii



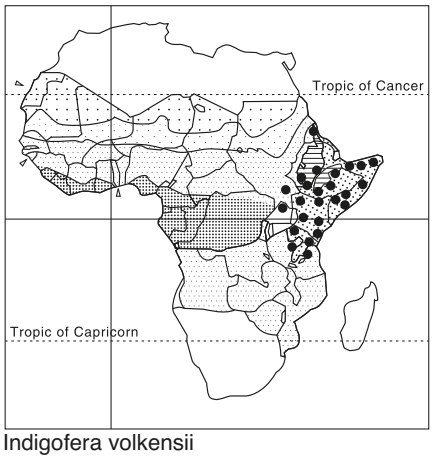
Indigofera vicioides



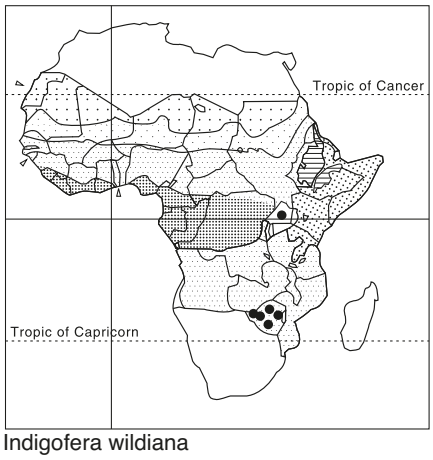
Indigofera viscidissima



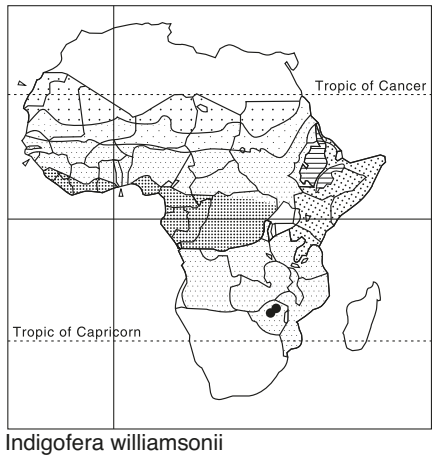
Indigofera vohemarensis



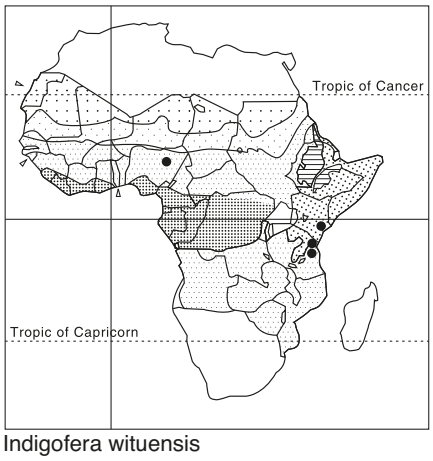
Indigofera volkensii



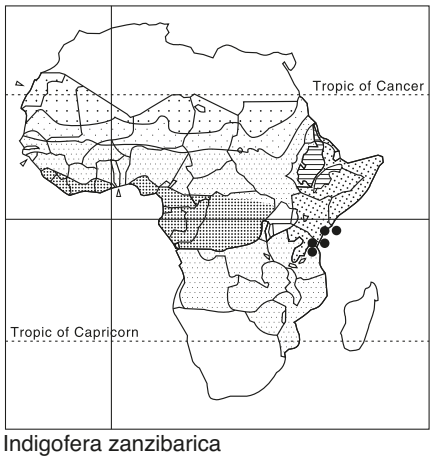
Indigofera wildiana



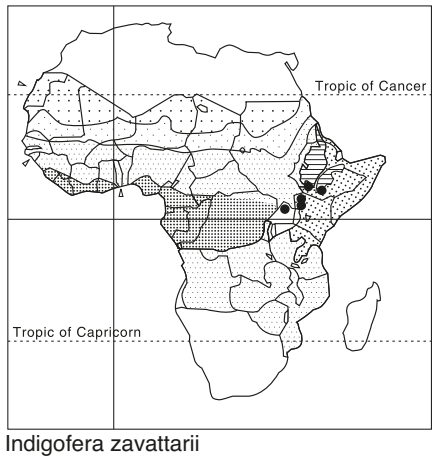
Indigofera williamsonii



Indigofera wituensis



Indigofera zanzibarica



Indigofera zavattarii

I. zanzibarica J. B. Gillett

Perennial herb with prostrate, flattened branches, rooting at the nodes, sparsely appressed strigulose.

Damp open places; sometimes abundant, forming a carpet in ditches and similar damp spots; marsh between forest and mangrove swamp; margins of swampy ponds; damp gravel close to swamp; sand or sandy soil; grey soil; 0-100 m alt.

Root system requires further investigation.

I. zavattarii Chiov.

Perennial herb branching from a woody base, to 50 cm tall, silvery pubescent with long ± appressed or spreading hairs; older stems reddish-brown, glabrescent.

Rocky hillsides; roadsides; 1200-2300 m alt.

I. zenkeri Harms ex Bak. f., incl. var. *brevifoliolata* De Wild.

syn.: *I. multifoliolata* De Wild.

Erect bushy herb 0,5-2 m tall, covered, but not densely, with white appressed or spreading biramous hairs and, almost everywhere, with erect multicellular glandular hairs.

Woodland; grassland; weed of cultivation; 0-1650 m alt.

SYNONYMS:

Acanthonotus echinatus (Willd.) Benth. = **Indigofera nummulariifolia**

Anila pentaphylla (L.) Kuntze var. *trichocarpa* Kuntze = **Indigofera vohemarensis**

Brissonia trapezicarpa Desv. = **Indigofera senegalensis**

Eilemanthus strobilifer Hochst. = **Indigofera strobilifera**

Hemispadon pilosus Endl. = **Indigofera pilosa**

Indigastrum costatum (Guill. & Perr.) Schrire = **Indigofera costata** (with subspp.)

deflexum (A. Rich.) Jaub. & Spach = **I. parviflora**

guerranum (Torre) Schrire= **I. guerrana**

macrostachyum Jaub. & Spach = **I. costata** subsp. **goniodes**

parviflorum (B. Heyne ex Wight & Arn.) Schrire = **I. parviflora**

subsp. *occidentale* (J. B. Gillett) Schrire = **I. parviflora** var. **occidentale**

subsp. *parviflorum* var. *crispidulum* (J. B. Gillett) Schrire = **I. parviflora** var. **crispidula**

Indigofera abyssinica Hochst. = **Indigofera amorphoides**

accepta N. E. Br. = **I. setiflora**

acutifolia Schinz, non Schlechtd. = **Microcharis disjuncta** var. **disjuncta**

adamii Berh. = **Indigofera congolensis** var. **congolensis**

aeruginis Schweinf. = **I. trigonelloides**

affinis De Wild. = **I. mimosoides** var. **mimosoides**

alboglandulosa Engl. = **I. atriceps** subsp. **atriceps**

alta Schweinf. = **I. amorphoides**

ammophila Thulin = **Microcharis**

anabaptista Steud. ex Bak. = **Indigofera hochstetteri**

anceps Vahl ex Poir. = **I. hendecaphylla**

angolensis D. Dietr. = **I. suffruticosa**

anil L. = **I. suffruticosa**

var. *orthocarpa* DC. p.p. = **I. tinctoria**

annua Milne-Redh. = **Microcharis**

antennulifera L. Bolus = **Indigofera arenophila**

arenaria A. Rich. = **I. hochstteteri**

arenaria A. Rich. var. *strigosa* A. Terracc. = **I. argentea**

arenaria E. Mey. = **I. alternans**

arenaria sensu Bak. = **Microcharis disjuncta** var. **disjuncta**

argentea L. = **Indigofera tinctoria** var. **tinctoria**

argentea sensu J. B. Gillett p.p., non Burm. f., nec L. = **I. brachynema**

argentea sensu Bak. in FTA = **I. articulata**

asparagoides Taub. = **Microcharis asparagoides**

subsp. *ephemera* J. B. Gillett = **M. ephemera**

var. *tisserantii* Pellegr. = **M. tisserantii**

bagshawei Bak. f. = **Indigofera microcalyx**

bakeriana R. Viguier = **I. demissa**

baoulensis A. Chev. = **I. polysphaera**

barcensis Chiov. = **I. parviflora**

barteri sensu J. B. Gillett, non Hutch. & Dalziel = **I. brevifilamenta**

baukeana Vatke = **I. schimperi** var.

baumiana Harms var. *hockii* De Wild., var. *paucijuga* R. E. Fr., var. *roseo-violacea* De Wild. = **I. sutherlandioides**

bequaertii De Wild. = **I. secundiflora** var. **rubripilosa**

bergii Vatke = **I. tinctoria**

boiviniana Baill. = **I. microcarpa**

bolusii N. E Br. = **I. hendecaphylla**

boranensis Chiov. = **I. volkensii**

brevipetiolata Cronquist = **I. mimosoides** var. **mimosoides**

brevistaminea J. B. Gillett = **Microcharis**

buchnera Taub. = **M. buchneri**

burmannii Boiss. = **Indigofera argentea**

butayei De Wild. = **Microcharis**

cameronii Bak. = **Indigofera emarginella**

cana Thulin = **Microcharis**

capitata sensu Cronquist, non Kotschy = **Indigofera paracapitata**

carinata De Wild. = **I. trita** var. **subulata**

charlierana Schinz var. *sessilis* (Chiov.) J. B. Gillett = **I. charlierana** var. **scaberrima**

cognata N. E. Br. = **I. vicioides** var. **rogersii**

colutea var. *colutea* sensu J. B. Gillett p.p. = **I. zenkeri**

colutea (Burm. f.) Merr. var. *dembianensis* (Chiov.) Cufod. = **I. dembianensis**

colutea var. *grandiflora* J. B. Gillett = **I. masaiensis**

colutea var. *linearis* Bak. f. ex J. B. Gillett = **I. brachynema**

coluteifolia Jaub. & Spach = **I. emarginella**

commiphoroides Chiov. = **I. lupatana**

condensata De Wild. = **I. microcalyx**

conradsii Bak. f. = **I. ambelacensis**

consanguinea Klotzsch = **I. colutea**

coronilloides Jaub. & Spach = **I. trita** var. **scabra**

cryptantha sensu A. Schreib., non Benth. ex Harv. = **I. hofmanniana**

cufodontii Chiov. = **Microcharis**

dalabaca A. Chev. = **Indigofera dendroides**

daleoides Benth. ex Harv. var. *dammarensis* Bak. f. = **I. daleoides** var. **daleoides**

dalzielii Hutch., incl. var. *congolensis* Bak. f. ex De Wild. = **I. conjugata**

dasyantha Bak. f. var. *brevior* J. B. Gillett = **I. nyassica** var.

var. *viscidior* J. B. Gillett = **I. nyassica** var.

dauensis sensu Thulin p.p., non J. B. Gillett = **I. gypsacea**

deflexa A. Rich. = **I. parviflora**

dehniae Merxm. = **I. hewittii**

dekindtii Tiss. = **I. subcorymbosa**

dentata N. E. Br. = **Cyamopsis**

desodioides Bak. = **Indigofera oblongifolia**

dewevrei Mich. = **I. polysphaera**

dimorphophylla Schinz = **I. trita** var. **subulata**

disjuncta J. B. Gillett = **Microcharis**

divaricata De Wild. = **Indigofera vicioides** var. **vicioides**

djalonica A. Chev. ex Hutch. & Dalziel = **I. heudelotii**

dodecaphylla Ficalho & Hiern = **I. daleoides** var. **daleoides**

dorycnium Fenzl = **I. pulchra**

dupuisii Micheli = **I. pulchra**

echinata Willd. = **I. nummulariifolia**

effusa E. Mey. = **I. alternans**

elegans Schumach. & Thonn. = **I. nigricans**

elskensii De Wild. = **I. atriceps** subsp. **setosissima**

endecaphylla Jacq. var. *radicans* Welw. ex Bak. = **I. oxalidea**

endecaphylla sensu Hiern = **I. antunesiana**

“ *endecaphylla* “ sensu Poiret et auct. mult. = **I. hendecaphylla**

eriocarpa E. Mey. var. *williamsonii* Harv. = **I. williamsonii**

ervoides A. Rich. = **I. chirensis**

erythrogrammoides De Wild. = **I. drepanocarpa**

exigua Eckl. & Zeyh. = **I. alternans**

fairchildii Bak. f. = **I. heudelotii** var.

ferruginea Schumach. & Thonn. = **I. hirsuta**

flaccida Koenig ex Roxb. = **I. trita** var. **scabra**

flavovirens R. E. Fries = **I. rhynchocarpa**

fusca G. Don = **I. hirsuta**

garissaensis J. B. Gillett = **Microcharis**

gilletii De Wild. & Th. Durand = **Indigofera dendroides**

glauca Lam. = **I. articulata**

glutinosa Vahl ex Schumach. = **I. secundiflora** var. **secundiflora**

goetzei Harms = **I. hedyantha**

goniocarpa Bak. f. = **I. lupatana**

goniodes Hochst. ex Bak. = **I. costata** subsp. **goniodes** var. *rhodesica* Bak. f. = **I. costata** subsp. **macra**

graminea Schltr., nom. nud. = **Microcharis galpinii**

griquana Schltr. ex A. Zahlbr. = **Indigofera longibarbata**

guineensis Schumach. & Thonn. = **I. pilosa**

gyrata Thulin = **Microcharis**

gyrocarpa Bak. f. = **Indigofera rhynchocarpa**

hendecaphylla Jacq. vars. *acutifolia* Chiov., *angustifolia* A. Rich., *major* Bak. f. = **I. spicata**

heptaphylla Hiern = **I. costata** subsp. **theuschii**

heudelotii Benth. ex Bak. var. *elliotii* Bak. f. = **I. elliotii**

hirsuta L. var. *polystachya* Welw. ex Bak. = **I. longibarbata**

hislopii Bak. f. = **I. vicioides** var. **rogersii**

hockii De Wild. & Bak. f. = **I. hilaris**

hololeuca Benth. ex Harv. var. *angolensis* Bak. f. = **I. daleoides** var. **gossweileri**

holstii (Bak. f.) Bak. f. = **I. atriceps** subsp. **kaessneri**

homblei Bak. f. & Martin subsp. *longiflora* J. B. Gillett = **I. longistaminata**

houer Forssk. = **I. tinctoria**

hutchinsoniana J. B. Gillett = **Microcharis tenella**

hybrida N. E. Br. = **Indigofera hilaris**

insularis Chiov. = **I. volkensii**

inyangana N. E. Br. = **I. hedyantha**

jaubertiana Schweinf. = **I. hochstetteri**

johnstonii Bak. f. = **I. trachyphylla**

junodii N. E. Br. = **I. colutea**

kaessneri Bak. f. = **I. atriceps** subsp.

kandoensis Bak. f. = **I. subargentea**

karinensis Thulin = **Microcharis**

karongensis Bak. = **Indigofera microcalyx**

kengeleensis De Wild. = **I. dendroides**

kerensis Chiov. = **I. suaveolens**

kisantuensis De Wild. & Th. Durand = **I. arrecta**

kouriensis Tiss. = **I. prieureana**

kucharii Thulin = **Microcharis**

lanuginosa Taub. ex Bak. f. = **Indigofera strobilifera** subsp.

lateritia A. Chev. = **Microcharis longicalyx**

lateritia Willd. = **? Indigofera hirsuta**

latibracteata Harms = **I. cuneata**

latipinna I. M. Johnst. = **I. nambalensis**

leptocarpa Hochst. & Steud. ex Balf. f. p.p. = **Microcharis tritoides** subsp. **tritoides**

lignosa De Wild. = **Indigofera rhynchocarpa**

linearis DC. = **I. aspera**

linearis DC. var. *sessilis* Chiov. = **I. charlierana**

lobata J. B. Gillett = **Microcharis latifolia**

lonchocarpifolia Bak. = **Indigofera rhynchocarpa**

longicalyx J. B. Gillett = **Microcharis**

longiflora Taub. = **Indigofera fulgens** subsp. **fulgens**

lotoides Lam. = **I. oblongifolia**

lupulina Bak. = **I. strobilifera**

macra Bak. = **I. dyeri**

macra E. Mey. = **I. costata** var.

macrocarpa Lepr. ex Bak. = **I. leprieurii**

macrostachya Vent. = **I. costata** subsp. **goniodes**

maffei Chiov. = **I. trita** var.

mairei Léveillé = **Sophora velutina** subsp. **velutina**

mangokyensis R. Vig. p.p. = **Indigofera lyalli**

masukuensis Bak. = **I. atriceps** subsp. **atriceps**

mearnsii Standley = **I. swaziensis** var. **swaziensis**

medicaginea Welw. ex Bak. = **Microcharis**

medicaginea sensu Cronquist, non Welw. ex Bak. = **M. butayei**

micrantha Desv. = **Indigofera suffruticosa**

microcephala Bak. f. = **I. subargentea** var. **shinyangensis**

microcharoides Taub. = **Microcharis**

var. *latestipulata* = **M. microcharoides** var.

microscypha Bak. = **Indigofera hilaris** var.

minimifolia Chiov. = **I. vohemarensis**

mittuensis Bak. f. = **I. letestui**

moeroensis De Wild. = **I. hilaris**

moniliformis Bak. f. = **I. ormocarpoides**

mossambicensis Bak. f. = **I. concinna**

mounyinensis Tiss. p.p. = **I. subulifera** var. **polysperma**

mucronata Spreng. ex DC. = **I. trita** var. **scabra**

multifoliolata De Wild. = **I. zenkeri**

multijuga Bak. = **I. dendroides**

nematopoda Bak. f. = **I. dyeri**

noldae Rossberg = **I. sutherlandioides**

nyikensis Bak. p.p. = **I. hilaris** var. **microscypha**

obermeijerae Bremek. = **I. lyallii**

oligantha Harms ex Bak. f. = **I. nigritana**

oligosperma DC. = **I. secundiflora** var. **secundiflora**

oliveri Harms = **I. swaziensis** var. **swaziensis**

onobrychioides Boiv. ex Baill. = **I. hendecaphylla**

ornithopodioides Jaub. & Spach = **I. hochstteteri**

orthocarpa (DC.) O. Berg in O. Berg & C. F. Schmidt = **I. tinctoria**

palustris Vatke = **I. dendroides**

parvula Del. = **I. spicata**

patula Bak. = **I. hilaris**

pauciflora De Wild. = **I. ambelacensis**

paucifolia Del. = **I. oblongifolia**

pectinata Bak. = **I. hendecaphylla**

perplexa N. E. Br. = **I. swaziensis**

perrottetii DC. = **I. microcarpa**

phillipsiae Bak. f., incl. var. *erecta* Chiov. and var. *prostrata* Chiov. = **I. volkensii**

pilosa Poir. var. *multiflora* Bak. f. = **I. fulvopilosa**

poggei Taub. = **Rhynchotropis**

polycarpa Benth. ex Harv. = **Indigofera inhambanensis**

polysperma De Wild. & Th. Durand = **I. simplicifolia**

praetermissa Bak. f. = **Microcharis**

preladoi Harms = **Indigofera kirkii**

INDIGOFERA

procera Schumach. & Thonn. and var. *gazensis* Bak. f. = **I. paniculata** and subsp. **gazensis**

pseudo-indigofera (Merxm.) J. B. Gillett = **Microcharis galpinii**

psilostachya Welw. ex Bak. = **Indigofera lasiantha**

punctata Boiv. = **I. microcarpa**

quartiniana A. Rich. = **I. trita** var. **scabra**

ramosa Cronquist = **I. atriceps** subsp.

relaxata N. E. Br. = **I. charlierana**

remotiflora Taub. ex Bak. f. = **Microcharis**

retroflexa Baill. = **Indigofera trita** var. **scabra**

rhynchocarpa Welw. ex Bak. var. *latipinna* (I. M. Johnst.) J. B. Gillett = **I. nambalensis**

var. *quadrangularis* Berhaut = **I. garckeana**

rogersii R. E. Fries = **Indigofera vicioides** var.

rudis N. E. Br. = **I. heterotricha**

rufescens Poir. = **I. pulchra**

rutschuruensis De Wild. = **I. trita** var. **scabra**

scaberrima Schinz = **I. charlierana** var.

scabra Roth = **I. trita** var. **scabra**

schimperiana Hochst. = **I. spicata**

schlechteri Bak. f. = **I. longibarbata**

schweinfurthii Taub. = **I. conjugata** var.

scopa De Wild. & Th. Durand = **I. arrecta**

secundiflora Poir. var. *glandulosissima* R. E. Fries = **I. atriceps** subsp.

var. *goudarensis* Pichi Serm. = **I. secundiflora** var. **rubripilosa**

var. *holstii* Bak. f. = **I. atriceps** subsp. **kaessneri**

var. *rubripilosa* sensu J. B. Gillett p.p., non De Wild. = **I. brevifilamenta**

semhahensis Vierh. p.p. = **I. hochstetteri** and **Microcharis disjuncta** var. **disjuncta**

semitrijuga Forssk. var. *macrocarpa* Vatke = **? Indigofera argentea**

var. *tetrasperma* DC. = **I. argentea**

semitrijuga sensu J. B. Gillett p.p. (pl. ex Teita) non Forssk. = **I. brachynema**

semlikiensis Robyns & Boutique = **I. vicioides** var. **vicioides**

sericea Benth. ex Bak. fa. *australis* Bak. f. = **I. eylesiana**

sesbaniifolia A. Chev. = **I. dendroides**

sesquijuga Chiov. = **I. volkensii**

sesquijuga Chiov. var. *obbiadensis* Chiov. = **Microcharis tritoides** subsp.

sessilis Thulin = **M. sessilis**

seticulosa Harv. = **Indigofera colutea**

setosissima Harms = **I. atriceps** subsp. **setosissima**

var. *major* Cronquist = **I. atriceps** subsp. **atriceps**

shinyangensis Milne-Redh. = **I. subargentea** var.

shirensis Bak. f. = **I. mimosoides** var. **mimosoides**

similis N. E. Br. = **I. hilaris**

smithioides Viguier = **I. kirkii**

sofa Scott Elliot = **I. heudelotii**

somalensis Vatke = **I. semitrijuga**

sousae Exell = **I. atriceps** subsp. **glandulosissima**

spachii Bak. = **I. trita**

var. *trifoliolata* Schweinf. = **I. trita** var. **maffei**

sparsa sensu Cronquist non Bak. = **I. congolensis**

var. *bongensis* Bak. f. = **I. congolensis** var. **bongensis**

sparsiflora Hochst. = **I. suaveolens**

spathulata J. B. Gillett = **Microcharis**

spicata auct. mult. excl. Forssk. s. str. = **Indigofera hendecaphylla**

spinosa Forssk. var. *spiniflora* (Hochst. & Steud. ex Boiss.) Schweinf. ex Chiov. and fa. *densissima* Chiov. = **I. spiniflora**

spirocarpa Harms = **I. circinella**

stenophylla Guill. & Perr. var. *brachypoda* Steud. ex Bak. and var. *latifolia* A. Rich. = **I. prieureana**

stenophylla Guill. & Perr. var. *nyassae* Bak. f. = **I. antunesiana**

stipulosa Chiov. = **Microcharis**

suaveolens Jaub. & Spach var. *pseudocongolensis* Chiov. and var. *subquadrifolia* Chiov. = **Indigofera vohemarensis**

subhirtella Chiov. = **I. volkensii**

subincana N. E. Br. = **I. trita** var. **subulata**

subulata Vahl ex Poir. = **I. trita** var. **subulata**

var. *maffei* (Chiov.) J. B. Gillett = **I. trita** var. **maffei**

var. *microphylla* Chiov. = **I. trita** var. **subulata**

var. *nubica* J. B. Gillett = **I. trita** var. **nubica**

var. *scabra* (Roth) Meikle = **I. trita** var. **scabra**

subsp. *subulata* (Vahl ex Poir.) Ali var. *nubica* (J. B. Gillettt) Boulos & Schrire = **I. trita** var. **nubica**

subulifera sensu Tiss., non Welw. ex Bak. = **I. mildbraediana**

suffruticosa Mill. var. *uncinata* Berh. nom. = **I. suffruticosa**

suffruticosa sensu J. B. Gillett = **I. hofmanniana**

sumatrana Gaertn. = **I. tinctoria**

supralevis N. E. Br. = **I. oxalidea**

tanganyikensis Bak. f. x *nairobiensis* Bak. f. = **I. nairobiensis**

tenella Schumach. = **I. aspera**

tenuicaulis Klotzsch = **I. vicioides** var. **vicioides**

tenuirostris Thulin = **Microcharis**

tenuisiliqua Schweinf. = **M. tritoides** subsp. **tritoides**

tetragona Lebrun & Taton = **Indigofera garckeana**

tetragonoloba E. Mey. = **I. trita** var. **subulata**

tetrasperma Pers. var. *hexasperma* Vatke = **I. simplicifolia**

tetrasperma Schumach. & Thonn. = **I. tetrasperma**

tetrasperma Vahl ex Pers. ampl. DC. = **I. tetrasperma**

tettensis Klotzsch = **I. schimperi**

theuschii O. Hoffm. = **I. costata** subsp.

thonningii Schumach. & Thonn. = **I. trita** var. **subulata**

tinctoria L. var. *arrecta* Berh. = **I. arrecta**

tisserantii (Pellegr.) Pellegr. = **Microcharis**

torulosa Bak. = **Indigofera ormocarpoides**

transvaalensis Bak. f. = **I. vicioides** var. **vicioides**

tribuloides Boiss. = **I. sessiliflora**

trimorphophylla Taub. = **I. conjugata** var. **conjugata**

trita L. f. subsp. *scabra* (Roth) De Kort & Thijsse = **I. trita** var.

tritoides Bak. = **Microcharis**

var. *obbiadensis* (Chiov.) J. B. Gillett = **M. tritoides** subsp. **obbiadensis**

uhehensis Harms = **Indigofera vohemarensis**

umbonata Welw. ex Bak. = **I. arrecta**

umbraticola Vatke = **I. trita** var. **scabra**

uncinata G. Don = **I. suffruticosa**

variabilis N. E. Br. = **I. bainesii**

variabilis De Wild. = **Microcharis welwitschii**

viridiflora Chiov. = **Indigofera volkensii**

viscosa Lam. = **I. colutea**

viscosa Lam. var. *dembianensis* Chiov. = **I. dembianensis**

var. *subglabra* A. Rich. = **I. vohemarensis**

viscosa sensu Brenan = **I. mimosoides** var. **mimosoides**

viscosa sensu Cronquist = **I. colutea**

wajirensis J. B. Gillett = **Microcharis**

warrensis Schweinf. ex Cronquist = **Indigofera achyranthoides**

welwitschii Bak. = **Microcharis**

var. *remotiflora* (Taub. ex Bak. f.) Cronquist = **M. remotiflora**

var. *remotiflora* sensu Fl. Congo Belge 5 p.p. = **M. praetermissa**

var. *simplicifolia* Bak. f. = **M. disjuncta** var. **disjuncta**

wentzeliana Harms = **Indigofera hilaris**

wildemanii Bak. f. = **I. ambelacensis**

zigzag De Wild. = **I. hilaris**

Sphaeridiophorum abyssinicum Jaub. & Spach = **Indigofera linifolia**

linifolium (L. f.) Desv. = **I. linifolia**

KOTSCHYA / *28*

An African and Madagascan genus.

Nine species are insufficiently known: no fruit seen in 3 species (= c. 10%) and no ripe fruit in further 4 species; seeds are unknown for 5 species (= 18 %) and ripe seeds unknown for another species. Four species (= c. 14%) are known only from the type.

Kotschya aeschynomenoides (Welw. ex Bak.) Dewit & P. A. Duvign.

syn.: *Damapana aeschynomenoides* (Welw. ex Bak.) Kuntze

Erect, rarely decumbent, aromatic shrub 0,15-0,5-3 m tall; stems sticky and glandular, densely covered with bristly tubercular-based hairs.

KOTSCHYA AESCHYNOMENOIDES

Grassland ; evergreen bushland with *Hypericum ; Philippia* bushland ; *Oxytenanthera* thicket ; *Protea, Pteridium* grassland ; *Brachystegia* woodland ; evergreen forest margins ; wet places (seasonal streams, river banks, marshes, swamps, dambos, boggy drainage channels on granite outcrops, etc.) ; *Loudetia arundinacea* grassland with scattered trees ; among rocks ; at path in old cultivation ; ericaceous scrub ; 1200-3150 m alt.

Very variable.

Introduced in Guinea.

K. africana Endl. – Icon.: Du Puy & al., Legum. Madag.: 654, 2002 (var. **bequaertii)**.

syn.: *Smithia kotschyi* Benth. ; *S. africana* (Endl.) Taub. (both of var. **africana)**.

Erect shrub 1-4,5-6 m tall ; stems covered with glandular bristly tubercular-based hairs.

Forest edges ; wooded grassland ; short and tall *Hyparrhenia* grassland ; edges of bogs ; abandoned cultivations in forest ; fringing forest ; thickets ; scrub ; open parts of *Maytenus, Albizia* mist forest ; *Brachystegia microphylla* woodland ; swamp forest edges ; lake shores, where it often forms a distinct thicket zone with *Phragmites,* etc., inside sand beaches, pan and stream edges, etc. ; dambos ; rocky slopes ; seepage channels on fringe of evergreen forest ; "steppes" with *Acanthus ;* 810-2400 m alt.

Madagascar (var. **bequaertii)**.

Comprises 4 vars.: – var. **africana ;** – var. **bequaertii** (De Wild.) Verdc. [syn.: *Smithia riparia* R. E. Fries ; *S. chamaecrista* Benth., incl. var. *genuina* R. Vig. and var. *stipulata* R. Vig.].: – var. **latifoliola** Verdc.: – var. **ringoetii** (De Wild.) Dewit & P. A. Duvign.

K. bullockii Verdc.

Shrub or tree 1,8-3,6 m tall ; stems densely covered with short upwardly directed yellow very thick-based stiff hairs, later roughened with stipule-bases and eventually peeling and revealing a reddish almost powdery surface beneath.

Rocky outcrops with *Parinari curatellifolia ;* mossy roadside ditches ; granite outcrops on dambo margins with *Protea, Terminalia,* etc. ; watershed dambo systems ; 1414-1710 m alt.

K. capitulifera (Bak.) Dewit & P. A. Duvign. – Icon.: Trans. Linn. Soc. London 29 : tab. 33, 1875.

syn.: *Damapana capitulifera* (Bak.) Kuntze

Annual ascending or erect unbranched to much branched aromatic herb, 5-45 cm tall, ± decumbent at the base ; stems glabrous or covered with both bristly and short curved hairs ; stem and branches flowering at the apex.

Hard bare pans and very mixed *Brachystegia* woodland ; often amongst rocks or in marshy places ; grassland surrounding peaty bog ; grassland, particularly short seasonally waterlogged on sandy soil ; lateritic dambos ; with *Eriocaulon* spp., *Gentianaceae,* etc. ; 1070-2070 m alt.

Much variation in habit, with somewhat the habit of a small *Phyllanthus.*

Comprises 2 vars.

K. carsonii (Bak.) Dewit & P. A. Duvign.

syn.: *Smithia harmsiana* De Wild. ; *S. setosissima* Harms (both of subsp. **carsonii)**.

Erect shrub 0,3-1,8(?4,5) m tall ; stems glandular, sticky, densely covered with ± golden bristly tubercular-based hairs.

KOTSCHYA CARSONII

Grassland at forest edges ; base of granite outcrops ; plateau in savanna ; *Brachystegia* woodland ; bushland ; moorland ; peaty swamps ; riversides ; 450-2250 m alt.

Comprises 2 subspp. Subsp. **reflexa** (Portères) Verdc. in W. Africa.

K. coalescens Dewit & P. A. Duvign.

Erect or rambling perennial herb or subshrub 0,75-1,8 m tall ; stems covered with bristly tubercular-based hairs.

Moist sandy dambos ; stream and river banks in moist grassland and bushland ; grassy savanna ; grassland and thicket at forest edges ; ±1500-2250 m alt.

K. eurycalyx (Harms) Dewit & P. A. Duvign.

Erect or decumbent herb or subshrub 12-50 cm tall from a woody rootstock ; stems with tubercular-based bristly hairs but later glabrous and sometimes with peeling epidermis.

Grassland with *Protea, Dissotis,* etc. ; rocky outcrops ; roadsides ; 1470-2250 m alt.

Comprises 2 subspp.

Close to **K. schweinfurthii.**

K. goetzei (Harms) Verdc.

Shrub 1,5-4,5 m tall ; stems covered with long golden tubercular-based bristly hairs and a shorter pubescence as well, usually sticky.

Edges of forest ; evergreen bushland and grassland ; often in large stands ; 2100-2700 m alt.

K. imbricata Verdc.

Shrub with many slender woody unbranched stems to 0,6 m tall ; stems covered with rather dense erect white hairs above, chestnut-brown and somewhat fissured at the base ; fruit unknown.

"Isenga" woodland with granite rocks ; 1200 m alt.

Only known from the type collected in 1969.

K. longiloba Verdc.

Subshrubby herb 1,5-1,8 m tall growing in clumps ; branches glandular, densely covered with very sticky yellow bristly tubercular-based hairs ; fruit unknown.

Floodplains and at foot of rocky slopes, in wet patch of black soil ; 1050 m alt.

K. lutea (Portères) Hepper

Shrub 1,2-3 m tall, very ramose from the base with woody branches, scaberulous, tubercular. Fruit known !

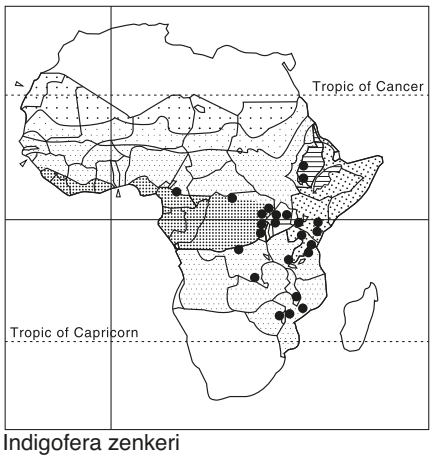
Humid meadow ; savanna with *Lophira lanceolata, Pterocarpus erinaceus, Cussonia barteri,* subject to fires ; sometimes in large populations ; slopes with *Mansonia ;* 550-1560 m alt.

K. micrantha (Harms) Hepper

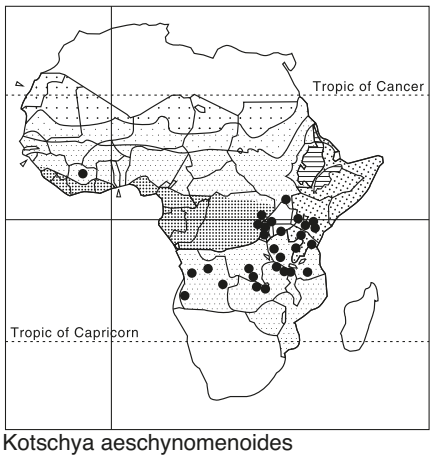
Slender herb with glabrous stem <15 cm tall ; roots fleshy, white with numerous secondary rootlets ; stem partly swelling at the base ; branchlets ascending, slender, very slightly viscid ; flowers small in small heads terminating lateral branches ; ripe fruit unknown. Very distinctive.

Swamps on "bowal".

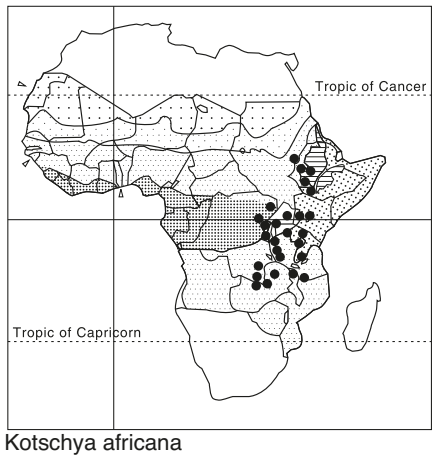
Only known from the type collected in 1905.



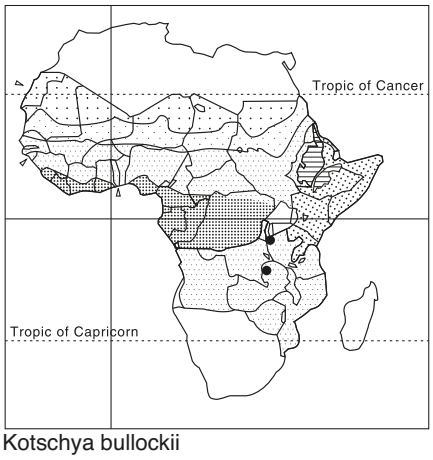
Indigofera zenkeri



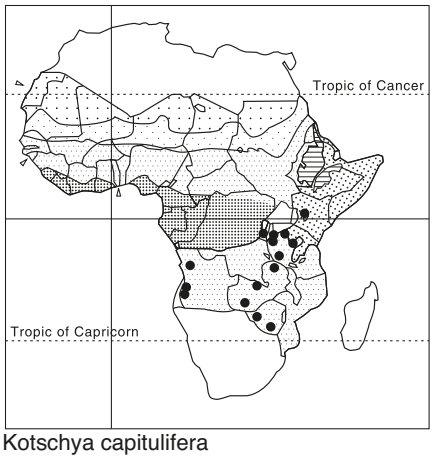
Kotschya aeschynomenoides



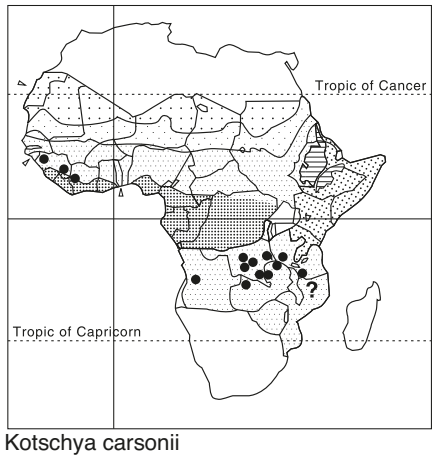
Kotschya africana



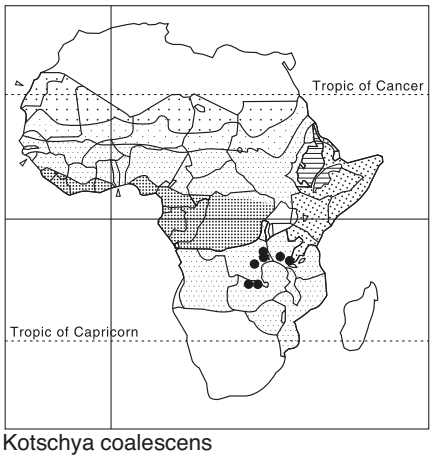
Kotschya bullockii



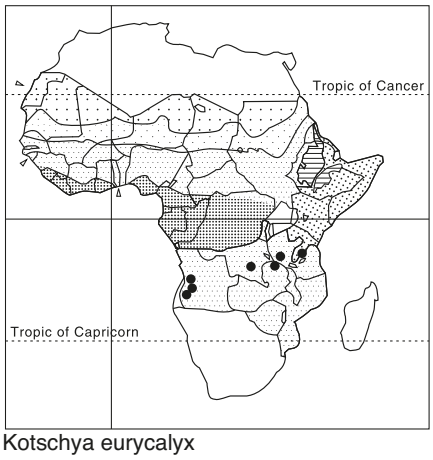
Kotschya capitulifera



Kotschya carsonii



Kotschya coalescens



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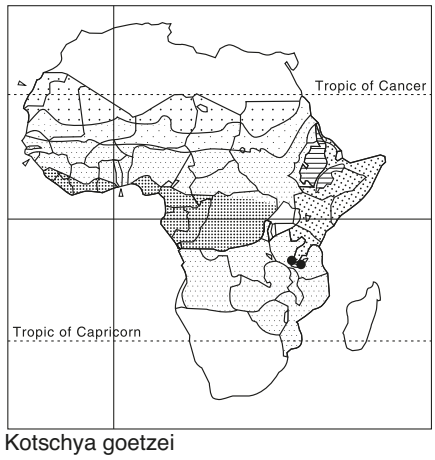
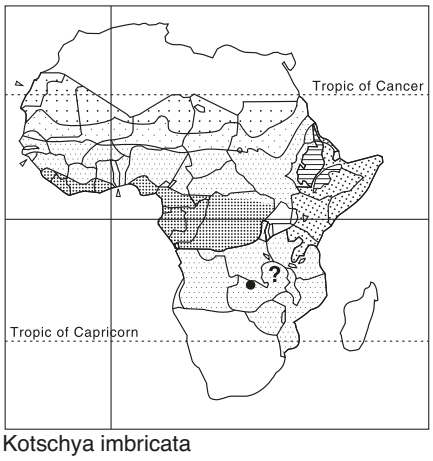
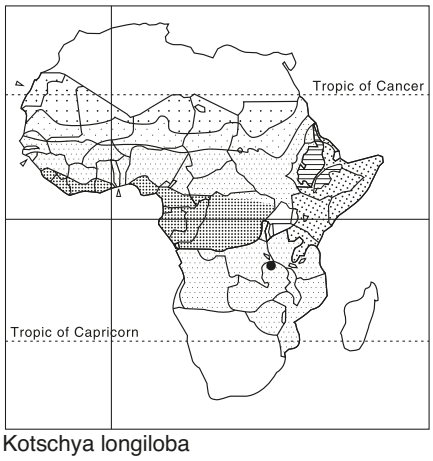


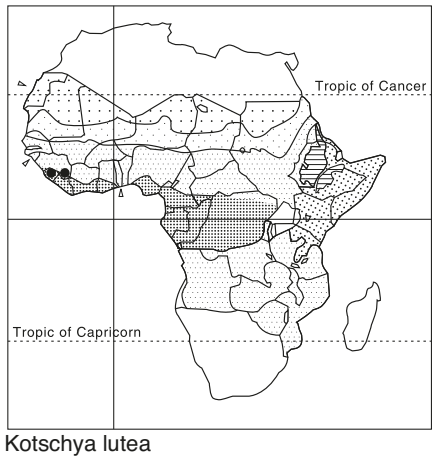
Kotschya goetzei



Kotschya imbricata



Kotschya longiloba



Kotschya lutea

K. ochreata (Taub.) Dewit & P. A. Duvign.

syn.: *Smithia bingilensis* Pellegr., nom.

Shrub 0,8-3 m tall with stems and branches hairy to hairy with bulbous-based hairs.

Swampy ground in savanna ; along waters ; meadows ; shrubby vegetation ; in saddle of ridge ; 500 (?and less)-1300 m alt.

Comprises 2 vars. (variable species).

K. oubanguiensis (Tiss.) Verdc.

Distinguished from **K. stolonifera** by : stems glabrescent or with very short pubescence ; standard squarish ; wings and keel slightly broader (± 1,3 and 2 mm wide, respectively).

Swamp on clay.

Only known from the type collected in 1923.

Near *S. stolonifera.*

K. platyphylla (Brenan) Verdc.

Shrub or slender-stemmed tree 4,5 m (? or more) tall ; stems minutely asperous with short very thick-based hairs but without longer hairs.

Gregarious on exposed ridges ; 1800-1900 m alt.

K. princeana (Harms) Verdc.

Bushy subshrub or shrub 0,75-1,8 m tall ; stems purplish-brown, covered with long greyish-white bristly spreading hairs scarcely if at all tubercular-based ; ripe fruit unknown.

Grassland ; 1600-1950 m alt.

K. prittwitzii (Harms) Verdc.

Erect subshrub or shrub ± 0,9-1,8 m tall ; stems pubescent when young with tubercular-based hairs ; bark becoming fissured and somewhat flaky on the older stems.

Grassland ; thorn scrub with *Xeromphis, Gardenia jovis-tonantis, Parinari curatellifolia ; Brachystegia boehmii* woodland ; grassy and rocky places ; bushland ; damp places by rivers and lakes ; riverine forest on sandy alluvium ; pastures and hillsides on red clay loam ; locally common ; 1200-1750 m alt.

Comprises 2 vars.

K. recurvifolia (Taub.) F. White

syn.: *Smithia congesta* Bak. ; *S. drepanophylla* Bak. (both of subsp. **recurvifolia)**.

Erect much-branched somewhat aromatic sticky shrub 0,2-3,6 (-4,5) m tall ; stems pubescent and with longer whitish or golden bristly tubercular-based hairs, sometimes also covered with persistent stipules.

Grassland ; moor ; bamboo forest glades ; forest edges ; secondary thicket ; usually on volcanic soils ; open evergreen bushland ; open parts of evergreen forest ; streamsides ; seepage channels of granite outcrops ; roadsides ; hillsides ; 1200-3300 m alt.

Comprises 4 subspp.

K. scaberrima (Taub.) Wild

Shrub 0,9-3 m tall ; stems covered with tubercles which render them scabrid ; these tubercles correspond to the tubercular-based hairs of other species ; the older stems are purple-brown, ridged, lenticellate and glabrescent.

Rocky slopes ; grassland with *Xerophyta, Helichrysum* above *Widdringtonia* forest ; 1200-2000 m alt.

KOTSCHYA

K. schweinfurthii (Taub.) Dewit & P. A. Duvign.

Erect subshrub ± 50 cm tall with young stems and branches hirsute-bulbous (adult almost glabrous) ; fruit unknown.

Open savanna woodland.

Close to **K. eurycalyx.**

K. speciosa (Hutch.) Hepper

syn.: *K. eylesii* nom. in sched.

Erect shrub or subshrub 0,9-1,5 m tall ; stems numerous, branching, densely covered with bristly tubercular-based hairs ; ripe pods and seeds unknown.

Brachystegia woodland ; bushland ; grassland ; sandy lake shores ; often on granite kopjes ; 1200-1800 m alt.

Very similar to **K. strigosa** but has considerably larger petals (standard : 14 x 8-10,5 not 6-13 x 3-4 mm) ; in habit closest to **K. coalescens** but bracteoles not joined.

K. stolonifera (Brenan) Dewit & P. A. Duvign.

syn.: *Smithia strigosa* Benth. var. *vanderystii* Bak. f.

Perennial erect or decumbent herb 0,6-2 m long, sometimes with short stolons but this may not be a constant feature ; stems covered with spreading tubercular-based hairs ; ripe seeds unknown.

Swampy places ? ; ± 1200 m alt.

K. strigosa (Benth.) Dewit & P. A. Duvign.

bas.: *Smithia strigosa* Benth. s. str. [excl. var. *vanderystii* Bak. f. (= **K. stolonifera)**].

syn.: *Damapana strigosa* (Benth.) Kuntze ; *Sarcobotrya strigosa* (Benth.) R. Vig.

Erect or sprawling subshrub 0,3-2,4 m tall ; stems bristly with tubercular-based hairs.

Grassland ; bushland ; cultivations ; *Brachystegia* woodland ; *Brachystegia, Julbernardia, Uapaca* and other woodlands ; evergreen fringing forest ; streamsides ; lake shores ; marsh edges ; peaty or sandy soil ; old fallow land ; bushy rocky rather dry places ; 780-1950 m alt.

Madagascar (var. **strigosa)**.

Comprises 2 vars. (intermediates occur) : – var. **strigosa ;** – var. **grandiflora** Dewit & P. A. Duvign.

K. strobilantha (Welw. ex Bak.) Dewit & P. A. Duvign.

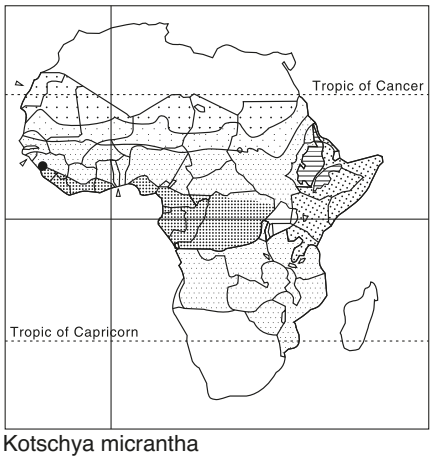
syn.: *Damapana strobilantha* (Welw. ex Bak.) Kuntze

Erect rarely prostrate shrub branched from the base or subshrub 0,15-2 m tall ; young stems with bristly hairs which are somewhat thickened at the base, older ones soon glabrous usually with a rather peeling epidermis.

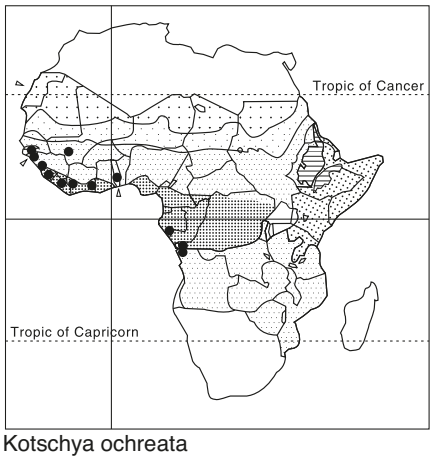
Brachystegia, Julbernardia, Uapaca and other mixed woodlands ; bushland ; grassland with scattered trees ; swampy grassland ; dambo margins ; sometimes in dry rocky places ; meadows ; along water ; area subject to fires ; grassy primary thickets ; sunny sandy situation ; thickets on dry sandy-clayey very hard soil, with short grasses ; sometimes frequent enough ; 1050-1900 m alt.

The abundant material of this common species shows a good deal of variation.

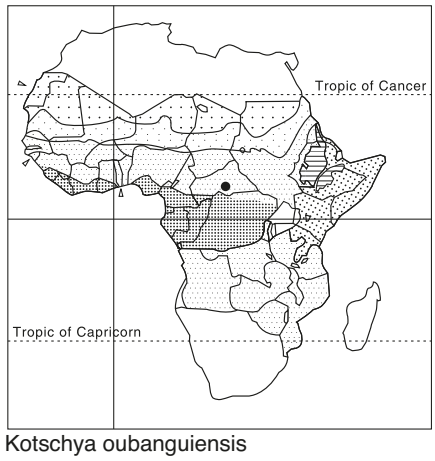
Comprises 2 vars.: – var. **strobilantha ;** – var. **kundelunguensis** Dewit & P. A. Duvign.



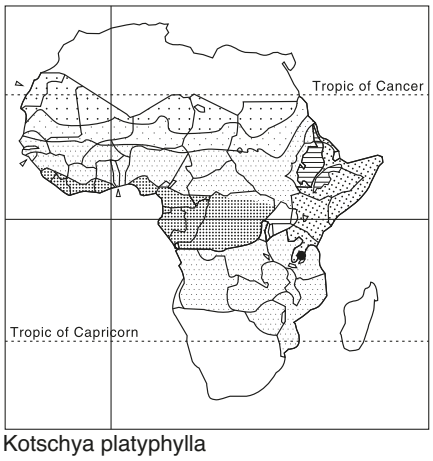
Kotschya micrantha



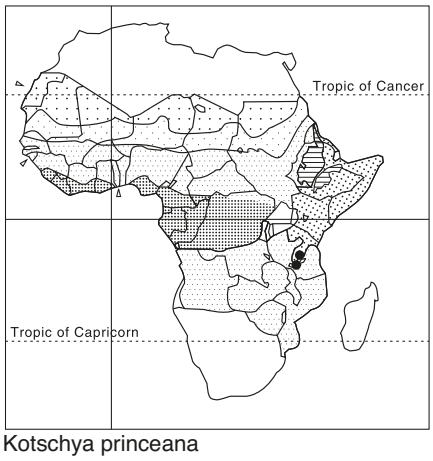
Kotschya ochreata



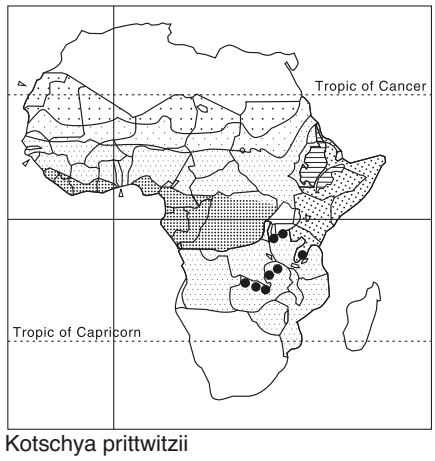
Kotschya oubanguiensis



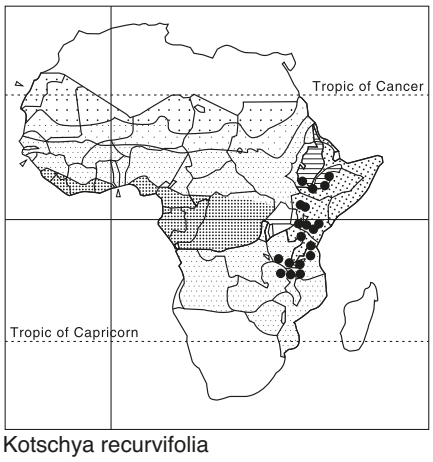
Kotschya platyphylla



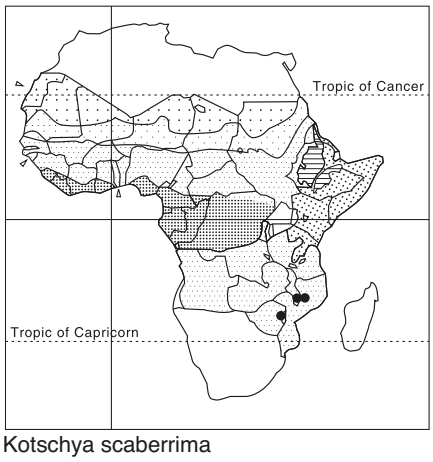
Kotschya princeana



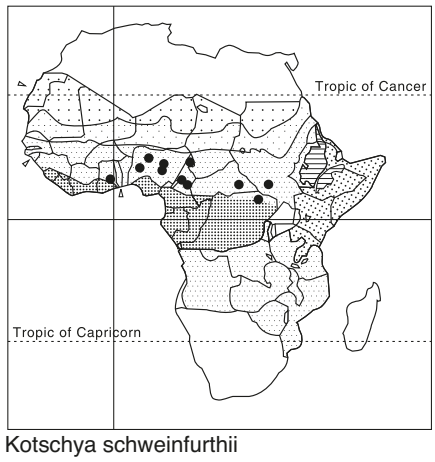
Kotschya prittwitzii



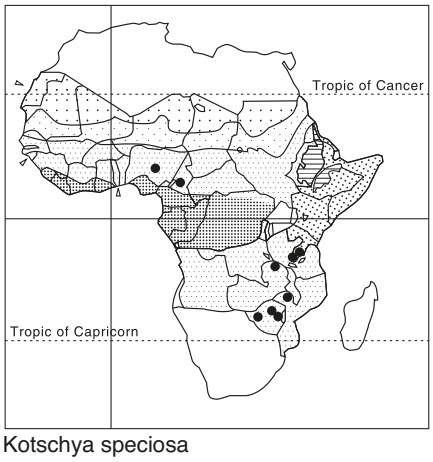
Kotschya recurvifolia



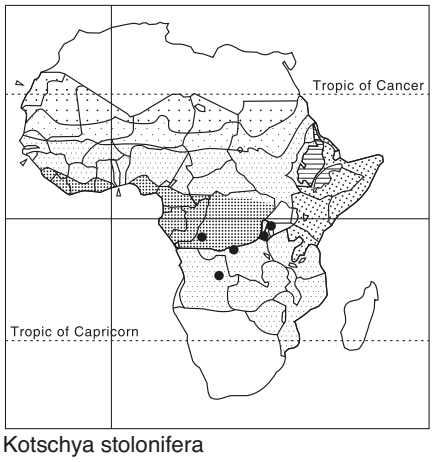
Kotschya scaberrima



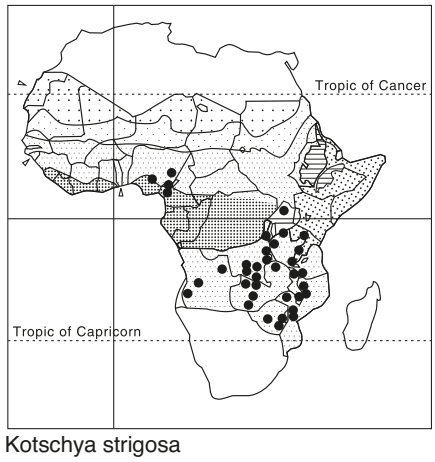
Kotschya schweinfurthii



Kotschya speciosa



Kotschya stolonifera



Kotschya strigosa

KOTSCHYA

K. suberifera Verdc.

Tree ± 2 m ; branches thickened to 2,5 cm Ø, covered with a thick, corky, brown, corrugated bark ; young branchlets similar but densely covered with persistent stipules, and tubercular-based hairs ; leaves congested at the apices of branchlets ; ripe fruit unknown. Species strikingly distinct.

Dominant over a small area in a hollow on top of hill in shallow stony soil with *Dissotis, Syzygium, Hymenocardia, Chrysophyllum,* etc.

Only known from the type collected in 1952.

K. thymodora (Bak. f.) Wild

Erect much-branched shrub 1,8-4,5 m tall ; stems very sticky and glandular, covered with shorter pubescence and also with longer yellow tubercular-based hairs.

Forest edges ; open evergreen bushland ; sometimes in secondary *Hyparrhenia* grassland ; often in marshy places ; *Uapaca* formations in foothills ; grassland slopes with *Protea, Philippia,* etc. ; 1000-3200 m alt.

S. Africa (Transvaal ; subsp. **thymodora)**.

Comprises 2 vars. : – var. **septentrionalis** Verdc. in N part of range.

K. uguenensis (Taub.) F. White

Erect shrub (1-)1,8-4,5(-6) m tall, stated to smell unpleasant ; stems covered with sticky spreading bristly yellow tubercular-based hairs.

Forming impenetrable thickets ; margins of water courses ; edges of forest ; evergreen bushland and moor ; *Syzygium* swamp forest ; 1000-2010 m alt.

K. uniflora (A. Chev.) Hepper

Prostrate or ascending woody shrub ; stems glabrous, scaly with strips of bark ; branches glabrous and angular at the apex, 20-60 cm long, 3-5 mm Ø ; with fibrous roots between the stone-flags ; youngest shoots densely yellow-pubescent.

Sandstone cliffs ; 600-800 m alt.

SYNONYMS :

Kotschya carsonii (Bak.) Dewit & P. A. Duvign. fa. *multifoliolata* Dewit & P. A. Duvign. = **Kotschya carsonii** subsp. **carsonii**

trochainii Berhaut = **Aeschynomene crassicaulis**

uguenensis sensu F. White 1962 = **Kotschya africana** var. **latifoliola**

volkensii (Taub.) Dewit & P. A. Duvign. = **K. aeschynomenoides**

LABLAB / *1*

Lablab purpureus (L.) Sweet subsp. **uncinatus** Verdc. var. **uncinatus**

(bas. : *Dolichos purpureus* L.)

syn. : Enum. 2 : 99, 1992 ; *Lablab uncinatus* A. Rich., nom. nud. ; *Dolichos uncinatus* Schweinf. 1896, non L. 1763 (= **Teramnus uncinatus)**, nom. illegit. ; *D. lablab* L. var. *uncinatus* Chiov.

Climbing or sometimes erect perennial (rarely annual) herb 1-6 m long ; stems pubescent or glabrous ; inflorescence slender ; fruits small (wild form).

Fallow land ; bushland ; cultivations ; river banks, dambos, etc. ; termite mounds ; rocks ; *Acacia, Combretum, Terminalia* thickets ; *Baikiaea* mutemwa on Kalahari sand ; *Brachystegia* mixed woodland ; *Acacia* woodland ; relict evergreen forest ; open glades in evergreen forest at margins ; coastal swampy woodland ; forest gallery ; in elephant grass at forest edge ; rain-forest with *Chrysophyllum albidum, Cola gigantea, Erythrophleum suaveolens, Alstonia boonei, Parinari excelsa, Milicia excelsa,* at edge of clearing ; *Loudetia arundinacea* grassland with scattered trees ; also cultivated but is then always of purely local origin ; 0-2400 m alt.

Species exceedingly variable, originating in Africa and now widely cultivated throughout the tropics.

S. Africa, Swaziland ; Madagascar.

L. purpureus subsp. **uncinatus** var. **rhomboideus** (Schinz) Verdc. in Namibia, ?Botswana, fide Verdcourt in Fl. Zambes. 3(5) : 83, 2001. – Two varieties not always recognized as distinct in recent floras.

Subsp. **purpureus** and subsp. **bengalensis** (Jacq.) Verdc. (of Asiatic origin) are widely cultivated.

Not mapped.

SYNONYM :

Lablab javanicus Miq. = **Vigna luteola**

LATHYRUS / *2*

Rootstock of one species not known. – Several species cultivated in E part of Africa (see Enum. 2 : 99, 1992).

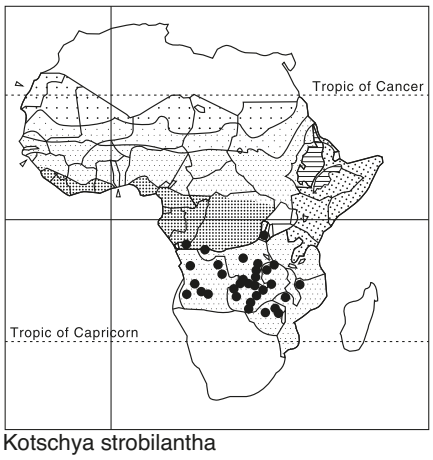
ASMUSSEN, C. B. & A. LISTON (1998). Chloroplast DNA characters, phylogeny, and classification of Lathyrus (Fabaceae). *Amer. J. Bot.* 85 : 387-401.

KENICER, G. J. & al. (2005). Systematics and biogeography of Lathyrus (Leguminosae) based on internal transcribed spacer and cpDNA sequence data. *Amer. J. Bot.* 92 : 1199-1209.

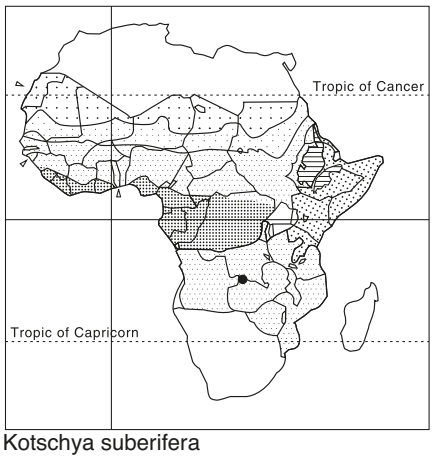
Lathyrus hygrophilus Taub., incl. var. *angustifolius* Bak.

syn. : *L. intricatus* Bak. ; *L. bequaertii* De Wild. ; *L. tshitirungensis* De Wild. ; *L. kilimandscharicus* Taub., excl. var. *scioanus* Fiori

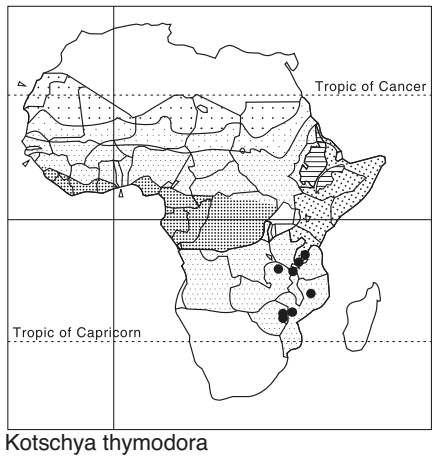
Straggling or climbing herb 0,3-2,1 m long, often considered to be an annual, but rootstock not known and, judging by the woody bases of some stems and several field notes, probably always a perennial ; stems 0,5-1,5 mm Ø, much branched, at first usually pubescent, later glabrous, sometimes with sparse to dense small red glands.



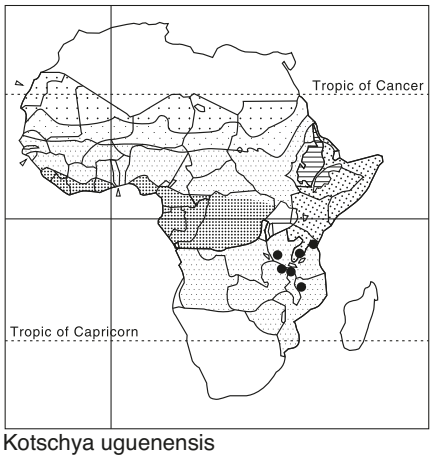
Kotschya strobilantha



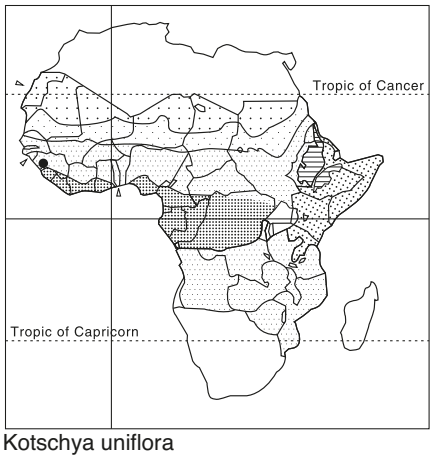
Kotschya suberifera



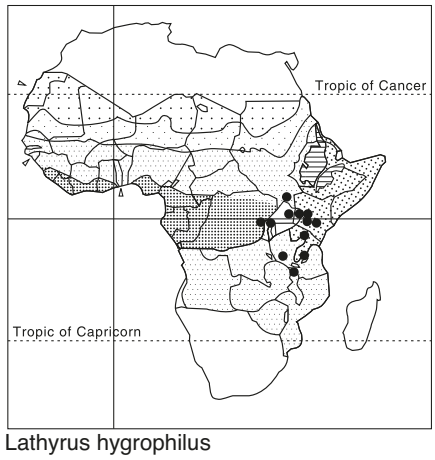
Kotschya thymodora



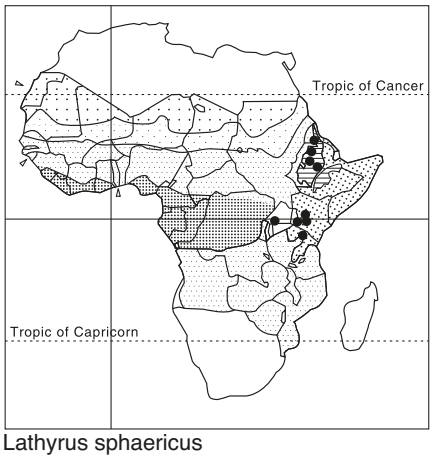
Kotschya uguenensis



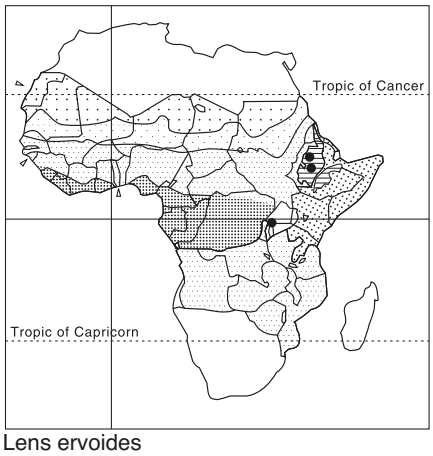
Kotschya uniflora



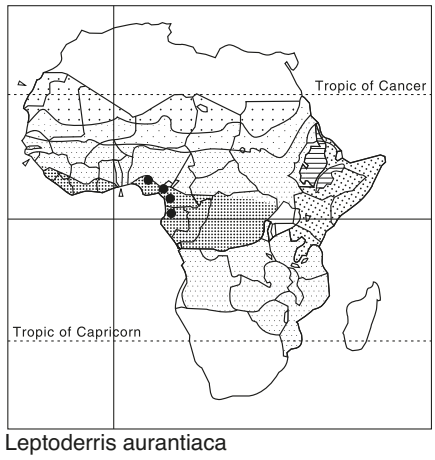
Lathyrus hygrophilus



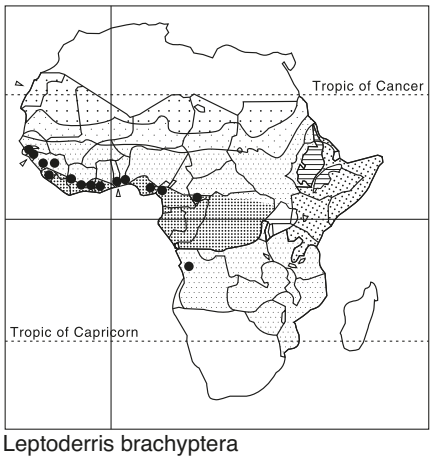
Lathyrus sphaericus



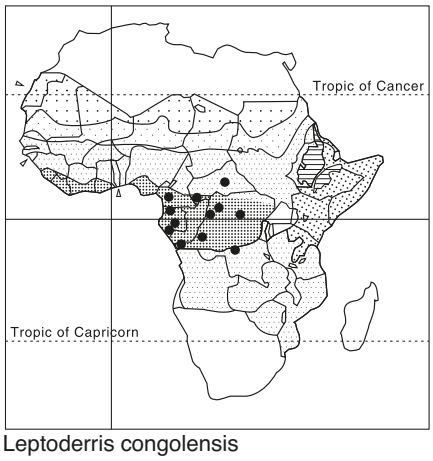
Lens ervoides



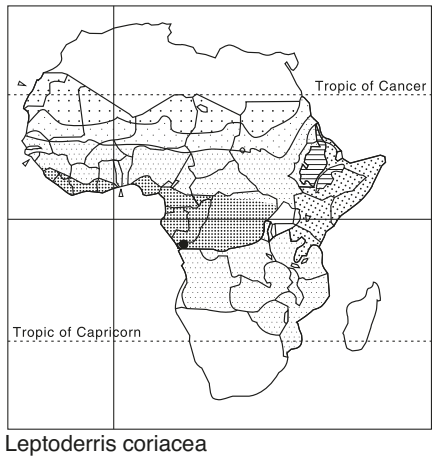
Leptoderris aurantiaca



Leptoderris brachyptera



Leptoderris congolensis



Leptoderris coriacea

LATHYRUS HYGROPHILUS

Grassland ; moorland ; bamboo forest ; forest edges ; swampy places ; meadow ; old lavas ; formations with *Acanthus ;* clearings ; stream banks ; 1380-4100 m alt.

Comprises 2 vars.

Not in Ethiopia (= *Vicia paucifolia)*.

(L. pratensis L.)

Perennial pubescent herb with 2 leaflets and yellow corolla.

Upland grassland ; c. 3000-3200 m alt.

Collected only a few times in Ethiopia (SU, BA), but seems to be native (fide Thulin in Fl. Eth. 3 : 250, 1989).

Not mapped.

L. sphaericus Retz.

Suberect or spreading annual herb (6-)10-30 cm long ; stems usually much branched below, glabrous in Africa.

Grassland at forest edges ; open scrub ; 1650-3200 m alt.

N Africa ; Atlantic Islands ; S and E Europe and E Mediterranean eastwards to Afghanistan.

SYNONYMS:

Lathyrus hygrophilus sensu Cufod. Enum.: 309, 1955, non Taub. = **Vicia paucifolia**

kilimandscharicus Taub. var. *scioanus* Fiori = **V. paucifolia**

malosanus Bak. = **V. paucifolia** var.

schimperi Engl. = **V. paucifolia**

LENS / *1*

FERGUSON, M. E. & L. D. ROBERTSON (1999). Morphological and phenological variation in the wild relatives of lentil. *Genet. Resources & Crop Evol.* 46 : 3-12.

Lens ervoides (Brign.) Grande

bas.: *Cicer ervoides* Brign.

syn.: *Ervum ervoides* (Brign.) Hayek ; *E. lenticula* Hoppe ; *Lens lenticula* (Hoppe) Webb & Berth. ; *Vicia ervoides* (Brign.) Fiori

Suberect, straggling or ± climbing annual herb 15-25 cm long ; stems slender, angular, much branched, sparsely hairy or ± glabrous ; stipules ± hastate or dentate.

Grassland ; 2300-3300 m alt.

Mediterranean region ; Caucasus.

[Lens culinaris Medik.**]**

Annual herb 20-60 cm tall with entire stipules, of unknown origin, is cultivated in NE & E African highlands.

Not mapped.

LEPTODERRIS / *19*

Lianes or scandent shrubs, several insufficiently known. No fruit recorded for 3 species and no mature fruit seen in further 2 species (= 5 together = 16 % + 10 % = 26 %). The ecology is unknown for 3 species (= 16 %) and one species (= 5 %) is known only from the type.

Leptoderris aurantiaca Dunn

Woody climber ; stems covered with flaking scales ; glabrous except the large pilose panicles ; flowers white or orange.

Forest ; 1-400 m alt.

L. brachyptera (Benth.) Dunn

bas.: *Lonchocarpus brachypterus* Benth.

syn.: *Derris brachyptera* (Benth.) Bak. ; *Spatholobus* ? *africanus* Bak. ; *Leptoderris reticulata* Dunn ; *Pterocarpus brachypterus* (Benth.) O. Kuntze ; *Deguelia brachyptera* (Benth.) Taub.

Straggling or climbing shrub (sometimes erect ± 1,7 m) to 15 m long or huge liane with stem to 1 m in girth ; stem exuding a red gum ; branches softly tomentose. Also a tree 15-30 m tall with trunk in old trees naked for a great height, 60-105 cm Ø at the base ; branches patent, crown broad, dense, depresso-ovoid, branchlets densely ferruginous-tomentose (fide Hiern, Angola).

Riverine forest ; slightly humid places ; river banks ; near mangrove swamps ; dense forest ; secondary thickets ; margins of primitive forest ; flowering infrequently.

Bioko/ Fernando Poo.

L. congolensis (De Wild.) Dunn, incl. var. *quinquefoliolata* De Wild. and var. *pycnantha* (Harms) Pellegr.

bas.: *Derris congolensis* De Wild.

syn.: *Leptoderris dewevrei* De Wild. ; *Derris dewevrei* De Wild. ; *Leptoderris pycnantha* Harms

Liane with stem to 15 cm Ø, or ? sarmentous shrub ; branches 6 mm Ø with longitudinal crests, pubescent to glabrescent.

Rain-forest on firm ground or flooded ; swamp ; flooded gallery forest.

L. coriacea De Wild.

syn.: *Derris coriacea* De Wild.

Liane with branches 5-6 mm Ø, reddish, pubescent becoming glabrous ; pod unknown.

Ecology unknown.

Only known from the type collected in 1913.

L. cyclocarpa Dunn

Climbing shrub, glabrous except the inflorescence ; pod disc-shaped, 3-4 cm Ø, 5 mm thick, 3 cm broad, glabrous, narrowly winged on one side, 1-seeded.

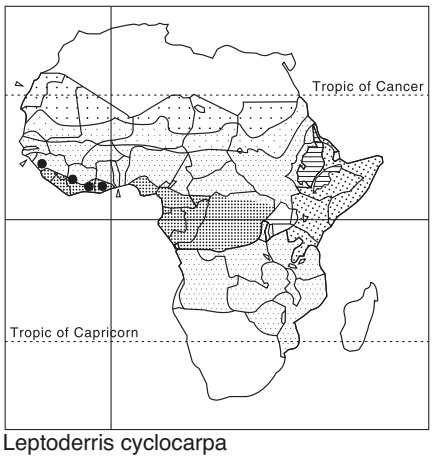
Ecology unknown.

L. cylindrica De Wild.

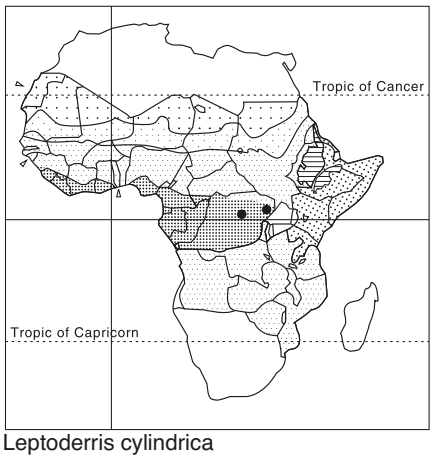
syn.: *Derris cylindrica* De Wild.

Liane with stem to 15 cm Ø and branches 3-4 mm Ø, glabrescent to glabrous ; pod unknown.

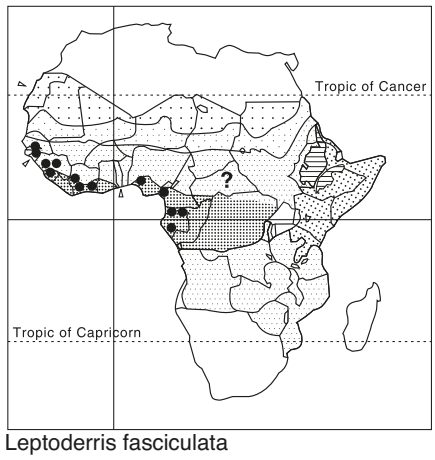
Only high-forest ; forest with *Cynometra.*



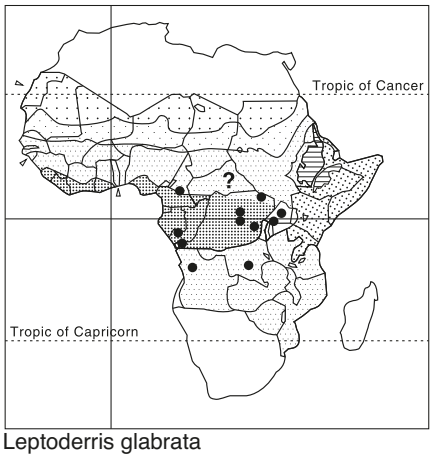
Leptoderris cyclocarpa



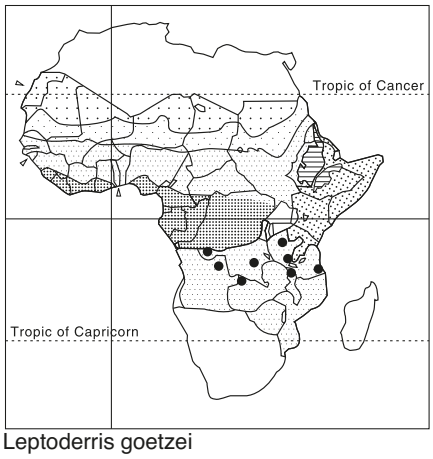
Leptoderris cylindrica



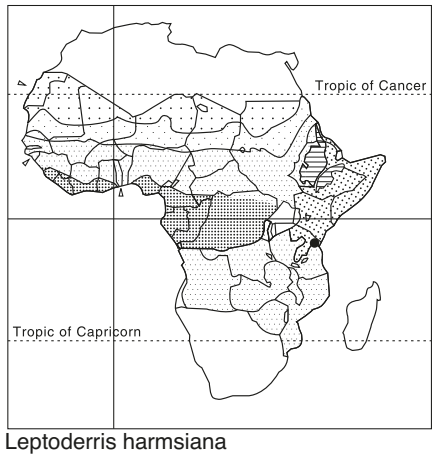
Leptoderris fasciculata



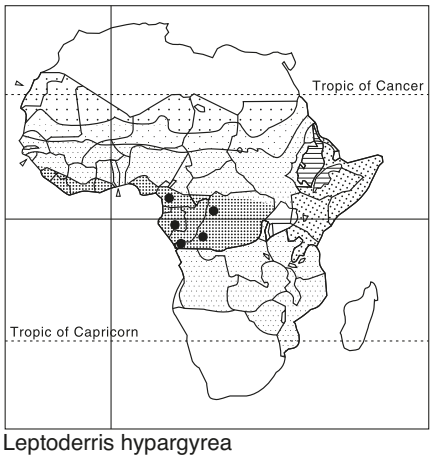
Leptoderris glabrata



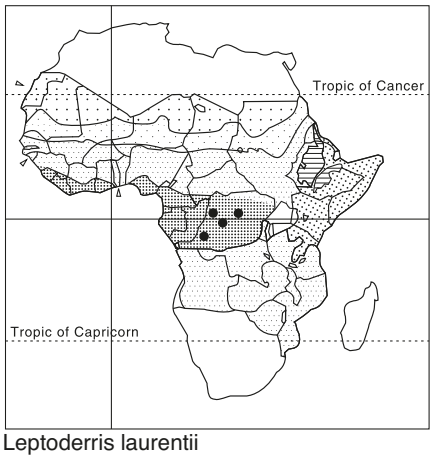
Leptoderris goetzei



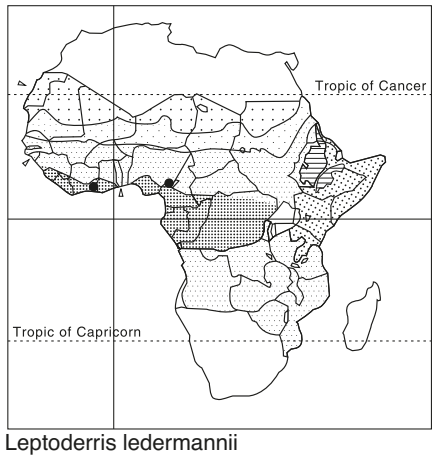
Leptoderris harmsiana



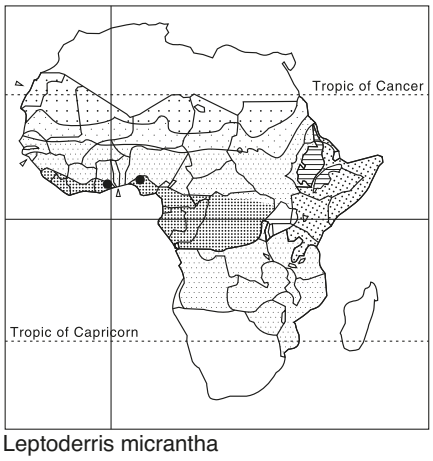
Leptoderris hypargyrea



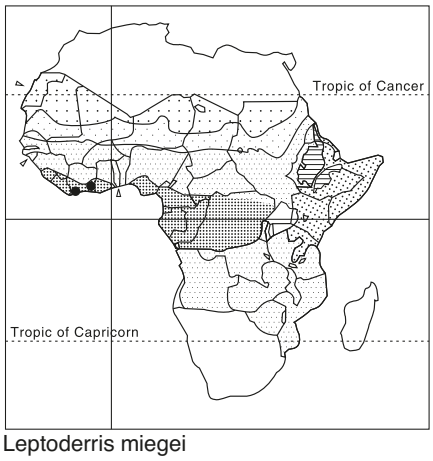
Leptoderris laurentii



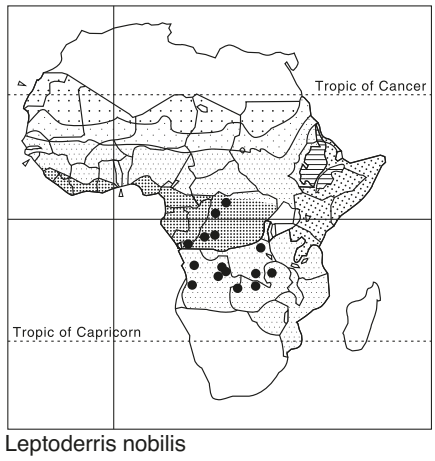
Leptoderris ledermannii



Leptoderris micrantha



Leptoderris miegei



Leptoderris nobilis

L. fasciculata (Benth.) Dunn, incl. var. *pauciflora* Pellegr. and var. *letestui* (De Wild.) Pellegr.; Syst. Georg. Pl. 73 : 97, 2003.

bas.: *Lonchocarpus fasciculatus* Benth.

syn.: *"L. aff. fasciculatus* Benth." sensu Harms in Mildbr. Deutsch. Zentr. Afr.-Exp. 2 : 263, 1911 (Mildbraed 2284); *L. dinklagei* Harms

Lofty woody climber to 15 m tall, shrub or tree with stem to 30 cm Ø and pendent liane-like branches ; branchlets brown pubescent to tomentellous, soon glabrescent ; flowers white in attractive (numerous) panicles.

Lake shore fringing forest ; forest gallery ; clearings ; edges of humid forest ; marigot sides ; to 1400 m alt.

Not in Liberia (= *L. sassandrensis)*.

L. glabrata (Bak.) Dunn

bas.: *Derris glabrata* Bak.

syn.: *Pterocarpus glabratus* (Bak.) Kuntze ; *Deguelia* ? *glabrata* (Bak.) Taub.

Woody climber 9-40 m tall with stem 6-12 cm Ø, or apparently sometimes a much smaller free-standing shrub ; branchlets 3-4 mm Ø with a short whitish to brownish pubescence or a dense tomentum, sometimes with longer spreading hairs intermixed, soon glabrescent.

Valley forest ; forest with *Terminalia ;* savanna in retimbering situation ; forest gallery ; high forest ; wooded savanna ; moist thickets ; 1200 (? and less)-1900 m alt.

Comprises 2 vars.: – var. **glabrata ;** – var. **glaberrima** Hauman (syn.: *L. nyanzae* Dunn ; *L. calva* Dunn).

L. goetzei (Harms) Dunn

bas.: *Derris goetzei* Harms

syn.: *Leptoderris kirkii* Dunn

Woody climber to 13-21 m tall ; branchlets yellowish or greyish tomentose to densely villous, tardily glabrescent.

Riverine forest or bushland ; wooded grassland ; rocky places ; forest gallery ; swamps ; swamp forest (mushitu) ; near sea-level to 1350 m alt.

L. harmsiana Dunn

syn.: *Derris harmsiana* Dunn, ms.

Woody climber ; branchlets rather densely covered with short golden-brown crisped hairs, sometimes also with larger spreading hairs intermixed, glabrescent ; mature fruit unknown.

Rain-forest ; sometimes at the edges or riparian ; 280-1050 m alt.

Limited material known.

L. hypargyrea Dunn

syn.: *L giorgii* De Wild.; *Derris giorgii* De Wild.; *D. hypargyrea* Harms ex Dunn

Liane 20 m long with branches 4-5 mm Ø ; tomentum grey ; mature fruit unknown.

Forest ; forest gallery ; common in thickets on formerly cultivated plantation-ground.

L. laurentii De Wild.

syn.: *Derris laurentii* De Wild.

Liane with stem to 12 cm Ø ; branches 5-7 mm Ø, slightly striate, reddish, with appressed, dense, ± caducous hairs.

Flooded forests ; stream sides.

L. ledermannii Harms

Scandent shrub ; stems thumb-like thick.

Brook sides in forest-like formation with *Spathodea, Ficus* etc.; small forest gallery.

L. micrantha Dunn

Climbing shrub.

Ecology unknown.

L. miegei Aké Assi & Mangenot

Very ramose liane to 15 m tall ; apex of young stems covered with a woolly tomentum, golden-brown, formed by caducous hairs 2-3 mm long, spreading or appressed ; woody branches to 6 cm Ø at the base.

Forest in the central lagoons region of Ivory Coast.

Near **L. ledermannii.**

L. nobilis (Welw. ex Bak.) Dunn, incl. var. *latifoliolata* Hauman

bas.: *Derris nobilis* Welw. ex Bak.

syn.: *Leptoderris pynaertii* De Wild.; *Derris pynaertii* De Wild.; *D. achtenii* De Wild.; *Leptoderris katangensis* De Wild.; *Deguelia nobilis* (Welw. ex Bak.) Taub.

Liane with stem to 10 cm Ø, or sarmentous shrub 12 m tall ; branches 5-8 mm Ø covered when young with dense short ± reddish-brown indumentum.

Forest ; forest gallery ; mushitu ; open forest in savanna ; quite common everywhere in thickets and dry waste places ; open grassy woods ; along road ; 900-1700 m alt.

Variable in size and shape of leaves due to habitat (in full sun and in shade).

L. reygaertii De Wild.

syn.: *Derris reygaertii* De Wild.

Liane with cylindrical stem 6-7 cm Ø, or ? tree ; branches 3-4 mm Ø, covered first with reddish-brown hairs, becoming glabrous and nearly black ; pod unknown.

High forest or secondary forest ; old clearings.

L. sassandrensis Jongkind

syn.: *L. fasciculata* sensu Fl. West Trop. Afr., Ed. 2, 1(2) : 521, 1958 quoad specim. Thomas 6307, Baldwin 9891, 10535, Linder 922, non (Benth.) Dunn

Large liane ; twigs with dense very short brown hairs.

Evergreen forest ; wetter extreme of moist semideciduous forests.

L. trifoliolata Hepper

Woody climber with *trifoliate* leaves.

Bush by side of stream in lowlying grassland flooded from the river during the rainy saison.

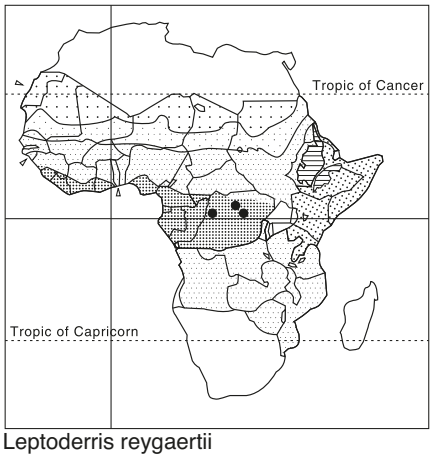
SYNONYMS :

Leptoderris calva Dunn = **Leptoderris glabrata** var. **glaberrima**

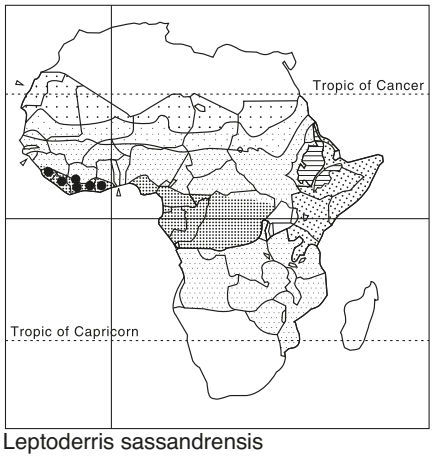
dewevrei (De Wild.) De Wild. = **L. congolensis**

dinklagei Harms = **L. fasciculata**

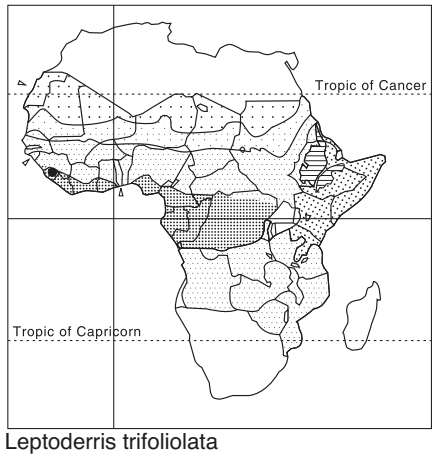
fasciculata sensu F.W.T.A. p.p. = **L. sassandrensis**



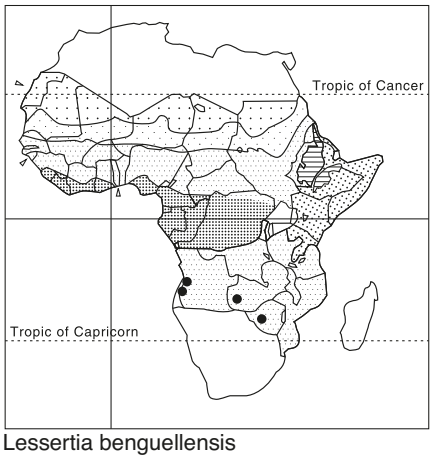
Leptoderris reygaertii



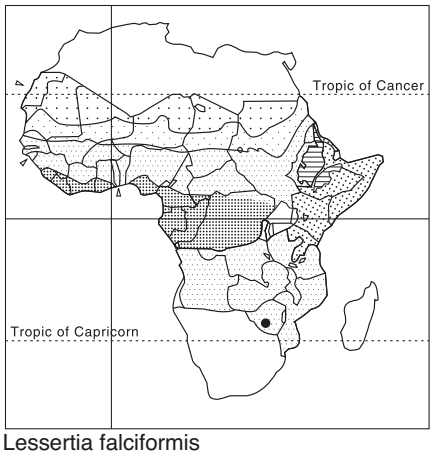
Leptoderris sassandrensis



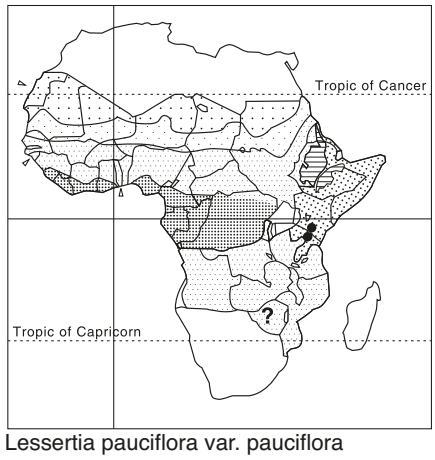
Leptoderris trifoliolata



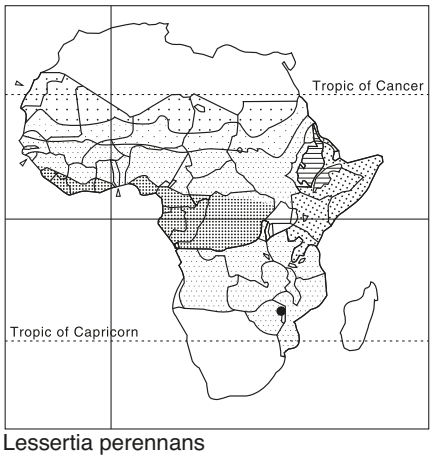
Lessertia benguellensis



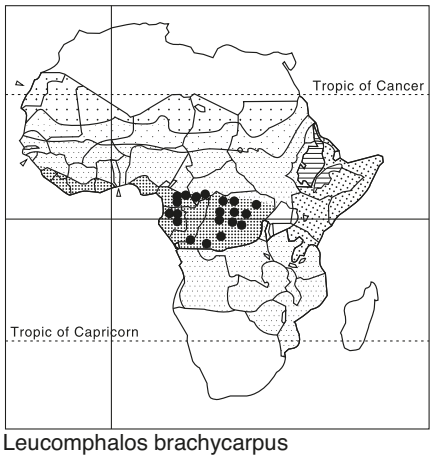
Lessertia falciformis



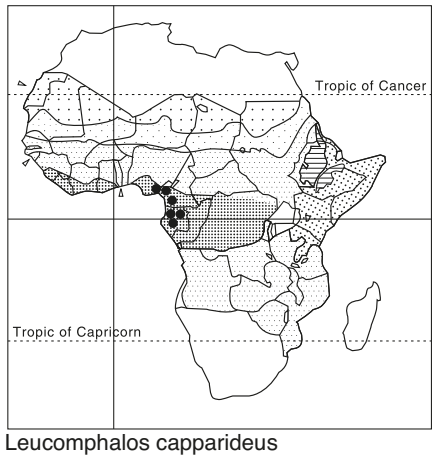
Lessertia pauciflora var. pauciflora



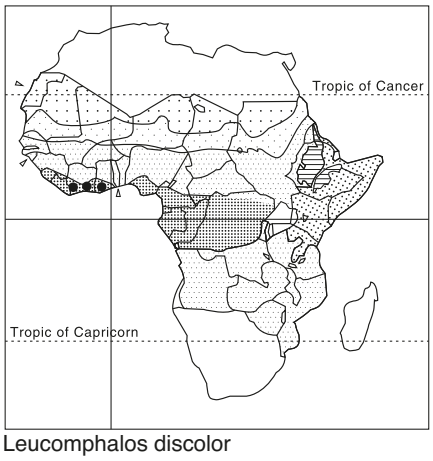
Lessertia perennans



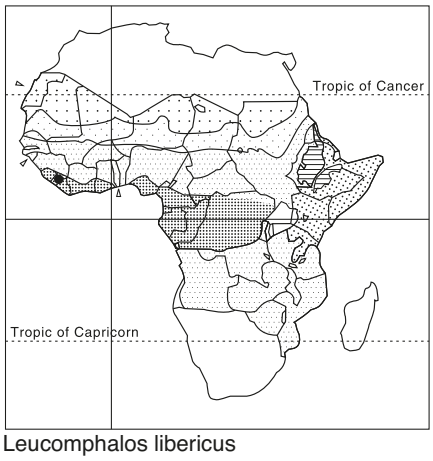
Leucomphalos brachycarpus



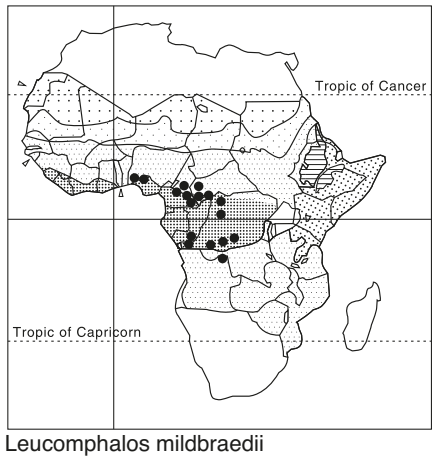
Leucomphalos capparideus



Leucomphalos discolor



Leucomphalos libericus



Leucomphalos mildbraedii

LEPTODERRIS

ferruginea De Wild. = **L. fasciculata**

giorgii De Wild. = **L. hypargyrea**

katangensis De Wild. = **L. nobilis**

kirkii Dunn = **L. goetzei**

nyanzae Dunn = **L. glabrata** var. **glaberrima**

pycnantha Harms = **L. congolensis**

pynaertii De Wild. = **L. nobilis**

reticulata Dunn = **L. brachyptera**

rutshuruensis Hauman = **L. fasciculata**

LESSERTIA / *4*

An African genus ; most of the species in S. Africa.

BALKWILL, M. -J. & K. BALKWILL (1999). The genus Lessertia DC. (Fabaceae-Galegeae) in Kwazulu-Natal (South Africa). *S. Afric. J. Bot.* 65 : 339-356.

Lessertia benguellensis Bak. – Icon.: Fl. Zambes. 3/7 : 16, 2003.

syn.: *L. emarginata* Schinz ; *Coluteastrum benguellense* (Bak.) Hiern

Erect robust perennial herb to 1,5 m tall, with many branching virgate stems from a woody rootstock ; stems herbaceous, pithy above ; flower racemes shorter than leaves ; flower yellow-greenish, streaked purple-bluish ; pod ovate, compressed.

Thickets, dry open woodland, on Kalahari sand, often on floodplains and river banks ; c. 900-1150 m alt. - Amongst red sandstone rocks in the desert (Angola).

Caprivi Strip, Namibia, Botswana, S. Africa.

L. falciformis DC.

Perennial herb ; stems 20-40 cm long, prostrate, white appressed-hairy or with ascending swollen simple hairs, from a long woody taproot ; flower pink or purplish ; pod falcate, membranaceous.

Dry open scrubland, on Kalahari sand and on calcrete pan margins in low rainfall areas ; 1100-1350 m alt.

Namibia, Botswana, S. Africa.

L. pauciflora Harv. var. **pauciflora**

Perennial herb suberect or prostrate or subshrub 5-35 cm tall ; stems much branched from the base, ascending to erect, ± strigose canescent, then glabrescent from a long woody taproot ; raceme 2-flowered, corolla purplish or reddish to pink ; pod long, narrow, ± straight.

Short grassland, dry stream beds on volcanic soil ; 1130-2200 m alt.

N Botswana, Namibia, S. Africa. – Zimbabwe ?

Very close to *L. falciformis* and difficult to separate from it only on morphological features, but racemes 2-flowered and pod straight (confusion in Zimbabwe ?).

Disjunct species : there is a gap of c. 2100 km between this and the nearest known locality in southern Africa.

Comprises 2 vars. in Africa : var. **schlechteri** L. Bolus in S. Africa.

L. perennans (Jacq.) DC. (fide Balkwill & Balkwill, o.c.: 353-354).

bas.: *Colutea perennans* Jacq.

syn.: *Lessertia polystachya* Harv.; *L. perennans* var. *polystachya* (Harv.) L. Bolus and var. *sericea* L. Bolus

LESSERTIA PERENNANS

Erect perennial herb or subshrub to 1,3 m tall from a woody taproot ; stems simple or branched from the base, erect or divaricate, herbaceous and pithy above, striate, yellowish-brown, thinly silky-villous with scattered white hairs ; flower pale purplish, mauve-red or blue, sometimes white ; pod ± ovate with few blackish seeds.

Submontane grassland ; river banks ; 1620-1800 m alt.

Lesotho, S. Africa.

SYNONYMS :

Lessertia emarginata Schinz = **Lessertia benguellensis**

polystachya Harv. = **L. perennans**

stipulata Bak. f. = **Astragalus atropilosulus** subsp. **abyssinicus**

LEUCOMPHALOS / *5*

A genus of 6 species with disjunct distribution : 5 in Africa including Madagascar, and 1 in E Asia (Hong Kong, SW China, Laos, Vietnam, Borneo). – Our treatment is based on Breteler in Wagen. Agric. Univ. Papers 94-4, 1994. (cf. Enum. 3 : 313, 1995).

Ripe fruit unknown in one species.

Leucomphalos brachycarpus (Harms) Breteler

syn.: *Baphia boonei* De Wild.

Liane with stem to 8 cm Ø, with a mostly brown-tomentose (rarely greyish) indumentum on branchlets ; branches of young specimens less densely hairy than of mature individuals ; branches glabrescent.

Mainly in semi-deciduous forest or forest gallery ; to ± 700 m alt.

L. capparideus Benth. ex Planch.

Usually lianescent shrub or tree to 15 m tall ; branches glabrous ; branchlets glabrous, sometimes with a few sparse hairs when very young.

Rain-forest ; 0-760 m alt.

Bioko/Fernando Poo.

L. discolor (J. B. Hall) Breteler

Liane to 25 m long or scandent shrub ; branches glabrous ; branchlets glabrous to very sparsely short-hairy when young.

Riverine forest.

L. libericus Breteler

Liane ; branches and branchlets appressed brown hairy, glabrescent ; ripe fruit unknown.

Rain-forest.

L. mildbraedii (Harms) Breteler – Icon.: Bot. Jahrb. Syst. 49 : 432, 1913.

syn.: *Bowringia madagascariensis* R. Viguier

Evergreen scrambling shrub 1,5-2 m tall or liane reaching 5-25 m ; branchlets glabrous, often sparsely hairy when young.

Semi-deciduous forest ; forest gallery ; to 750 m alt.

Disjunct distribution : Africa–E Madagascar (type of disjunction not known to occur in other species of Malagasy Leguminosae).

LONCHOCARPUS / *1*

Lonchocarpus Kunth in Humboldt, Bonpland & Kunth, Nov. Gen. Sp. (quarto edition) 6 : 383, 1824, conserved name, non *Lonchocarpus* Kunth in Benth. & Hook. f., Gen. Pl. 1: 547, 1865 (= *Philenoptera)*.

This genus of ± 150 species is confined to Tropical America with the exception of the amphiatlantic *L. domingensis* (vide R. Geesink, Scala Millettiearum, Leiden Bot. Ser. 8 : 98, 1984).

Lonchocarpus domingensis (Pers.) DC.; Howard, Fl. Lesser Antilles 4 : 503, 1988. – Icon.: P. Beauv., Fl. Oware 2 : pl. 76, 1810-11.

bas.: *Dalbergia domingensis* Pers.

syn.: *Robinia sericea* Poiret ; *Lonchocarpus sericeus* (Poir.) DC., incl. var. *glabrescens* Benth.; *Cystisus major* Sessé & Moç.; *Robinia violacea* P. Beauv. 1810-11, non Jacq. 1760 ; *R. argentiflora* Schumach. & Thonn.

Tree 6-20 m ; trunk 1,2 m in girth, usually branching low down ; branchlets brownish downy ; crown rounded ; branches rounded, glabrous with scattered white lenticels. Commonly flowering in the deciduous state.

Coastal rain-forest ; scattered ; coastal savanna ; fairly common in deciduous, semi-deciduous, fringing, transition forests in areas subject to inundation or near water ; niayes ; sometimes in savanna near forest area. – Also planted.

Cape Verde Islands ; Greater Antilles. – Occurs naturally in W Africa through to Zaire and S. America. – Not in Angola (= *Philenoptera nelsii*, *P. violaceae*)

SYNONYMS :

LONCHOCARPUS Kunth in Benth. & Hook. = **PHILENOPTERA**

Lonchocarpus affinis De Wild. = **Craibia**

argentea A. Chev., nom. = **Xeroderris stuhlmannii**

barlassinae Chiov. = **Philenoptera eriocalyx**

barteri Benth. = **Millettia**

brachybotrys Dunn = **Philenoptera eriocalyx**

brachypterus Benth. = **Leptoderris**

brevicaudata (Vatke) Harms = **Craibia**

bussei Harms = **Philenoptera**

capassa Rolfe = **P. violacea**

comosus Micheli = **Millettia**

crassifolius Harms = **Craibia brevicaudata** subsp. **baptistarum**

cyanescens (Schumach. & Thonn.) Benth. = **Philenoptera**

deguelioides Harms = **Craibia brevicaudata** subsp. **brevicaudata**

dewevrei Micheli = **Millettia versicolor**

dubius De Wild. = **Craibia affinis**

eetveldeanus Micheli = **Millettia**

eriocalyx Harms = **Philenoptera eriocalyx**

subsp. *wankieensis* Mendonça & E. P. Sousa = **P. wankieensis**

fasciculatus Benth. = **Leptoderris**

fischeri Harms = **Philenoptera bussei**

gossensii Hauman = **Millettia**

griffonianus (Baill.) Dunn = **Millettia**

heudelotianus Baill. = **M. barteri**

hockii De Wild. = **Philenoptera katangensis**

ichthyoctonus Baill. = **P. madagascariensis**

kanurii Brenan & J. B. Gillett = **P. kanurii**

katangensis De Wild. = **P. katangensis**

laurentii De Wild. = **Craibia**

laxiflorus Guill. & Perr. = **Philenoptera**

var. *sericeus* Bak. p.p. = **P. nelsii, P. violacea**

lucens Scott-Elliot = **Millettia**

macrostachyus Hook. f. = **M. chrysophylla**

madagascariensis (Vatke) Polhill = **Philenoptera**

menyharthii Schinz = **P. bussei**

mossambicensis Sim = **Millettia stuhlmannii**

multifolius Dunn = **M. rhodantha**

nelsii (Schinz) Schinz ex Heering & Grimme = **Philenoptera**

subsp. *katangensis* (De Wild.) Mendonça & E. P. Sousa = **P. katangensis**

pallescens Welw. ex Bak., incl. var. *gossweileri* Bak. f. = **P. pallescens**

var. *pubescens* Bak. f. = **P. katangensis**

philenoptera Benth. = **P. laxiflora**

polystachyus Bak. = **P. madagascariensis**

scheffleri Harms ex Bak. f. = **P. eriocalyx**

sericeus (Poir.) DC., incl. var. *glabrescens* Benth. = **Lonchocarpus domingensis**

sophiae Kotschy & Peyr. = **Philenoptera laxiflora**

sp. A. sensu Hepper in F.W.T.A., Ed. 2, 1: 523, 1958 = **Leptoderris fasciculata**

speciosus Bolus = **Bolusanthus**

staudtii Harms = ? **Andira inermis** subsp. **inermis**

sutherlandii (Harv.) Dunn = **Philenoptera**

theuszii Büttn. = **Millettia**

violaceus (Klotzsch) Oliv. = **Philenoptera**

wentzelianus Harms = **Craibia brevicaudata** subsp. **baptistarum**

zenkeri Taub. = **Millettia mannii**

zimmermannii Harms = **Craibia**

LOTONONIS / *18*

Nearly all of the c. 150 species occurring in southern Africa. For our area the fruit is unknown in one species, in one species (+1?) seeds have not been seen, and in another species no mature seeds are known; no ecology is recorded for one species, and 2 species are known only from the type.

Lotononis angolensis Welw. ex Bak. – Icon.: Fl. Zambes. 3(7): 236, 2003.

Stems numerous, prostrate, branched, somewhat flattened, often rooting at the lower nodes, radiating from a strong perennial taproot, forming a mat, (5-)20-60(-100) cm long; the whole plant, apart from pods, glabrous or glabrescent.

Grassland; cultivated land; bare ground; commonly in damp sandy or rocky spots along tracks; in ditches; dambo edges; also weed of cultivation; open places; bushy damp pasture; river banks; habit remarkably like that of an *Astragalus;* 1000-2250 m alt.

L. bainesii Bak., incl. var. *pottiae* Burtt Davy

Stems numerous, prostrate, radiating from a strong perennial taproot, forming a mat, 10-80 cm long, rooting at the nodes, finely pubescent, glabrescent.

Damp grassy places in valleys; disturbed places along channels, dams and quarries; also in cultivated places; to ± 1000 m alt.

Has been cultivated in Kenya. Also in other pasture research stations.

Botswana, Namibia, S. Africa.

L. brachyantha Harms

Annual or short-lived perennial plant, with a short stem, soon developing numerous slender radiating procumbent to prostrate branches from the top of an undivided taproot; branches to 10-30 cm long, densely strigose-pubescent with silvery, appressed, slightly biramous hairs.

Pans and valleys in short grassland; 900-1000 m alt.

Botswana, Namibia.

L. calycina (E. Mey.) Benth., incl. var. *hirsutissima* (Harv.) Dummer and var. *acuta* Dummer

bas.: *Lipozygis calycina* E. Mey. s. str.

syn.: *Lotononis tenella* Eckl. & Zeyher var. *calycina* (E. Mey.) Harv. and var. *hirsutissima* Harv.

Short-lived perennial plant developing numerous prostrate radiating branches from the top of an undivided taproot; flowering from first year of growth, ultimately (at least in S. Africa) rootstock sometimes branched; lower branches numerous, prostrate, forming mats, 5-20 cm long, slender, pilose; seeds unknown?

Short grassland, sometimes by rivers; ± 1700 m alt.

Shows considerable variation.

Namibia, S. Africa.

L. carinata (E. Mey.) Benth.

bas.: *Lipozygis carinata* E. Mey.

syn.: *Lotononis transvaalensis* Dummer; *L. pauciflora* Dummer; *L. florifera* Dummer, incl. var. *major* Burtt Davy

Stems numerous, erect and spreading from a branched perennial rootstock, 10-30 cm tall, slender, pubescent to pilose on younger parts; mature seeds unknown?

Short grassland; in Mozambique near a river; 500 m alt.

S. Africa.

L. decumbens (Thunb.) B.-E. van Wyk subsp. **rehmannii** (Dummer) B.-E. van Wyk – Icon.: van Wyk in Contrib. Bolus Herb. 14: 127 (details), 1991.

bas.: *L. rehmannii* Dummer

Stems numerous, prostrate, radiating from a slender branched perennial rootstock, forming mats, 10-30 cm long, slender, pubescent to pilose.

Ecology unknown in Zimbabwe (probably short grassland above 1800 m alt.).

S. Africa (subsp. **decumbens)**.

L. delicata (Bak. f.) Polhill

Annual, slender, hirsute, erect herb.

Sandy places.

Closely allied to *Crotalaria minutissima* but it is, with *Lotononis pseudodelicata,* a true *Lotononis* by its minutely but distinctly tuberculate seed surfaces and total absence of bracteoles.

L. eriantha Benth. – Icon.: van Wyk, Contrib. Bolus Herb. 14: 115, 1991.

Stems numerous, erect, from a woody rootstock, simple or sparingly branched above, 8-25 cm tall, resprouting after burning, pilose.

Pyrophyte of grassland and firebreaks; ± 1800 m alt.

S. Africa.

L. laxa Eckl. & Zeyh., incl. var. *multiflora* Dummer

syn.: *Crotalaria diversifolia* E. Mey.; *Lotononis diversifolia* (E. Mey.) Benth.; *L. woodii* Bolus

Stems numerous, erect or decumbent, branched, 10-50 cm long, sericeous with medifixed pubescence, from a stout branched perennial rootstock.

Grassland; evergreen bushland; often in stony or rocky situations; often most apparent after burning; 1500-2700 m alt.

Tending to occur in small disjunct populations; perhaps overlooked.

L. listii Polhill – Icon.: van Wyk, Contrib. Bolus Herb. 14: 100, 1991 (details).

Stems numerous, prostrate to weakly ascending, radiating from a strong perennial taproot, usually forming a mat, 10-120 cm long, rooting at the nodes, finely pubescent, glabrescent.

Grassy places along streams and flood plains; often in damp sandy spots, along roadsides; cultivated ground; 900-1450 m alt.

Namibia, S. Africa, Botswana.

L. mucronata Conrath – Icon.: van Wyk, o.c.: 127 (partial).

syn.: *L. gerrardii* Dummer, incl. var. *transvaalensis* Dummer

Stems numerous, prostrate, radiating from a slender branched perennial rootstock, forming mats, 10-30 cm long, slender, pubescent.

Short grassland; among rocks or on bare ground; 1800-2550 m alt.

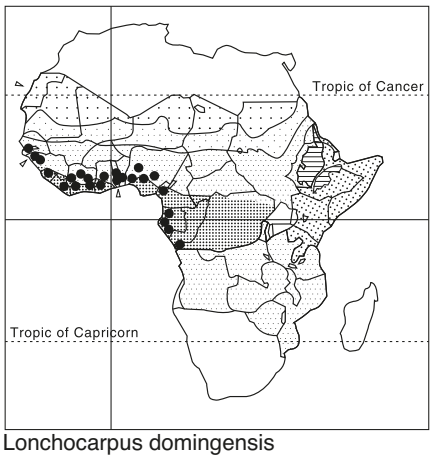
S. Africa.

L. newtonii Dummer – Icon.: van Wyk, o.c.: 147 (partial).

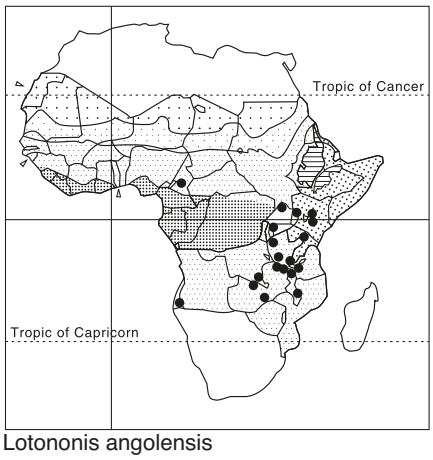
Annual slender hairy herb; stem ascending or erect, simple, 15 cm tall, yellowish.

Ecology unknown.

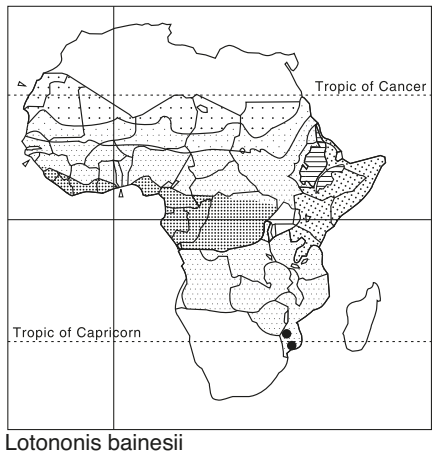
Only known from the type collected ante 1913.



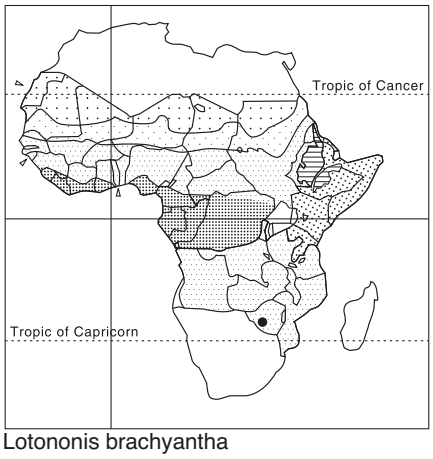
Lonchocarpus domingensis



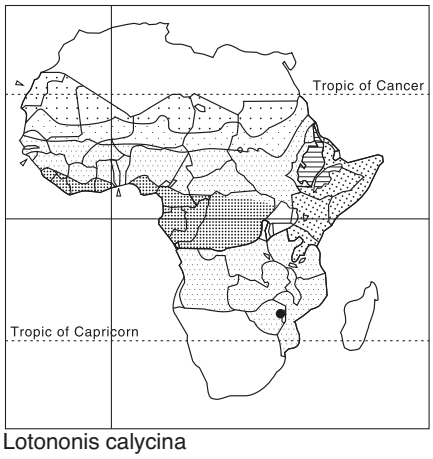
Lotononis angolensis



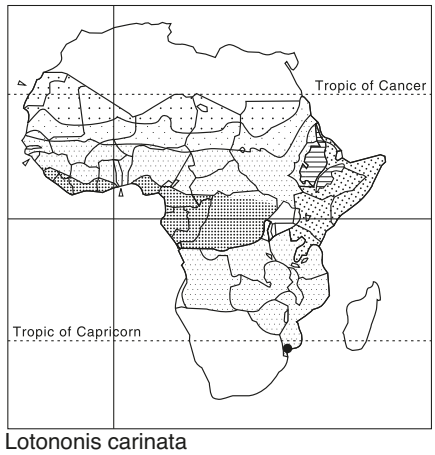
Lotononis bainesii



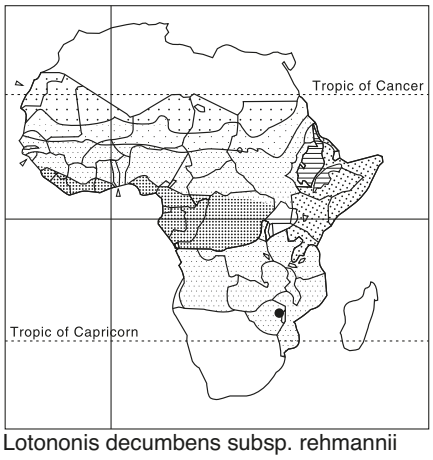
Lotononis brachyantha



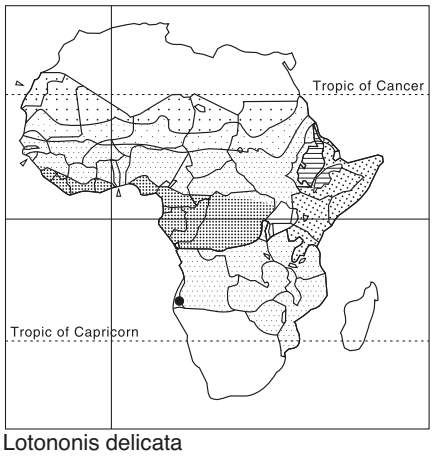
Lotononis calycina



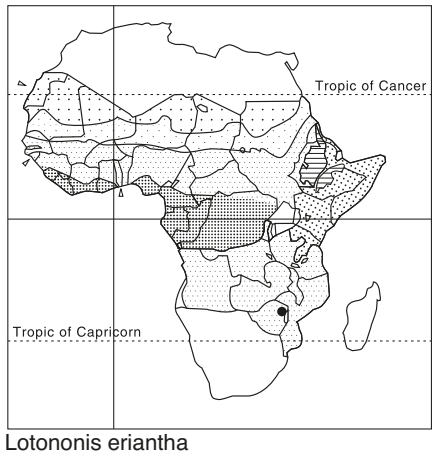
Lotononis carinata



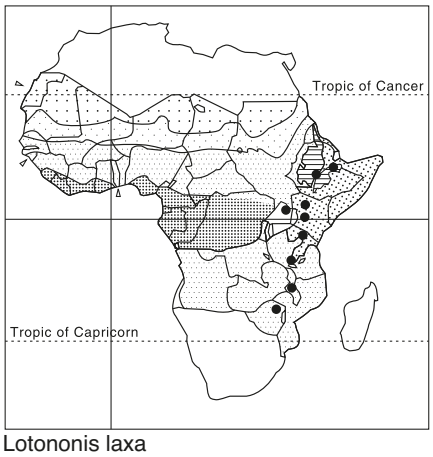
Lotononis decumbens subsp. rehmannii



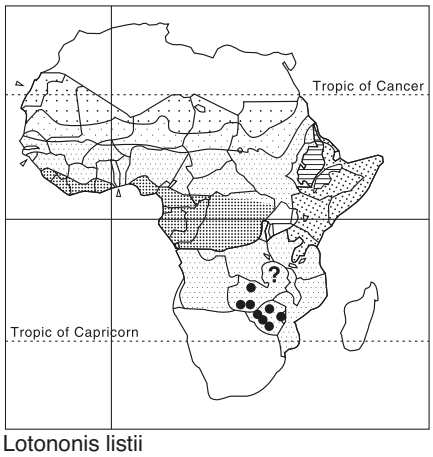
Lotononis delicata



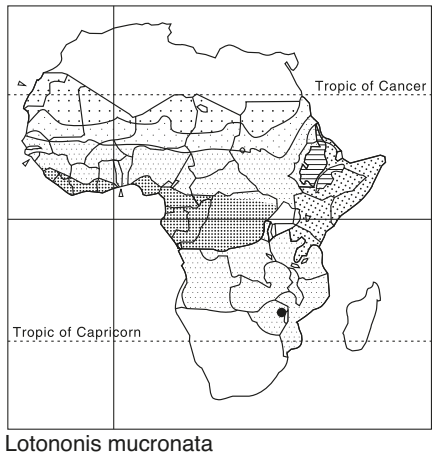
Lotononis eriantha



Lotononis laxa



Lotononis listii



Lotononis mucronata

L. platycarpa (Viv.) Pichi Serm.

bas.: *Lotus platycarpos* Viv.

syn.: *Lotononis lotoidea* (Del.) Batt., incl. var. *micrantha* Batt.; *Xerocarpus abyssinicus* (Hochst. ex A. Rich.) Schweinf.; *Lotononis leobordea* Benth., incl. var. *filicaulis* A. Terracc.; *Amphinomia dichotoma* Font Quer & Rothm., nom. illegit.; (for full synonymy see van Wyk, o.c.: 151-153).

Annual herb with prostrate, radiating branches from a very short stem, 1,5-50 cm long, pilose ; seeds orange.

Dry rocky places ; dried up river beds in semi-desert grassland ; also a weed of cultivated ground ; scree with small sandstone blocks intermixed with some sand ; beach of dry mud on sandstone ; thin, muddy-sandy pellicle ; with *Aerva, Fagonia, Pulicaria* or higher up with *Lavandula, Ochradenus, Salvia ;* in dwarf vegetation with *Eragrostis, Crypsis, Polycarpaea ;* locally more abundant ; open ground, roadsides and other disturbed places ; short grassland on sand ; 0-600-2300 m alt.

S. Africa ; Cape Verde Isl.; Morocco, Algeria, Libya, Egypt ; Arabia, Syria, Palestine, Pakistan.

L. pseudodelicata (Torre) Polhill

Slender, annual, erect, very ramose herb, ± 1,8 m tall, sparcely pilose with long hairs ; branches cylindrical, slender, often with red glands.

Watercourse ; 1350 m alt.

Very closely related to *L. delicata* (see Polhill, Kew Bull. 22 : 174, 1968, and idem Crotalaria in Africa : 376, 1982).

Only known from the type collected in 1937.

L. serpentinicola Wild – Icon.: van Wyk, o.c.: 171 (partial).

Annual or short-lived perennial herb with a short stem, soon developing numerous slender radiating prostrate to ascending branches from the top of an undivided taproot ; branches to 10-50 cm long, densely silvery-strigose-pubescent with slightly biramous hairs.

Grassland ; disturbed places by roads and quarries on serpentine or norite soils ; only known from northern and southern serpentines in Zimbabwe (see Kirkia 5 : 49-86, 1965).

L. stipulosa Bak. f. – Icon.: van Wyk, o.c.: 147 (partial).

Annual herb with a short stem, soon developing numerous slender radiating procumbent to prostrate branches to 10-50 cm long, pilose.

Open, sandy places on disturbed ground ; often along roads, fallow fields ; 900-1750 m alt.

L. stolzii Harms – Icon.: van Wyk, o.c.: 126 (partial).

Stems numerous, prostrate, radiating from a slender branched perennial rootstock, forming mats, 15-40 cm long, slender, pubescent ; pod and seeds unknown.

Grassland ; often in bare stony or sandy places ; 1800-2350 m alt.

L. tenuis Bak.

Copiously branched diffuse annual herb 15 cm tall, with slender thinly grey-silky branches.

Sandy ground by river (or rather rare in gravelly places by river).

Namibia.

SYNONYMS :

Lotononis abyssinica (Hochst. ex A. Rich.) Kotschy = **Lotononis platycarpa**
affinis Burtt Davy = **L. mucronata**
aristata Schinz, incl. var. *gazensis* Bak. f. = **Pearsonia aristata**
clandestina (E. Mey.) Benth., incl. var. *steingraeveriana* Schinz = **Lotononis platycarpa**
desertorum Dummer = **Rothia hirsuta**
dichotoma (Del.) Boiss. = **Lotononis platycarpa**
dinteri Schinz = **L. platycarpa**
diversifolia (E. Mey.) Benth. = **L. laxa**
erisemoides (Ficalho & Hiern) Torre = **L. calycina**
florifera Dummer, incl. var. *major* Burtt Davy = **L. carinata**
gerrardii Dummer, incl. var. *transvaalensis* Dummer = **L. mucronata**
grandifolia Bolus = **Pearsonia**
leobordea Benth., incl. var. *filicaulis* A. Terracc. = **Lotononis platycarpa**
lotoidea (Del.) Batt., incl. var. *micrantha* Batt. = **L. platycarpa**
omahekensis Dinter ex A. Schreiber = **Indigofera arenophila**
ornata Dummer = **Lotononis mucronata**
pauciflora Dummer = **L. carinata**
persica (Jaub. & Spach) Boiss. = **L. platycarpa**
rehmannii Dummer = **L. decumbens** subsp.
sessilifolia Harv. = **Pearsonia**
sphaerocarpa Boiss. = **Lotononis platycarpa**
steingroeveriana (Schinz) Dummer = **L. platycarpa**
tenella Eckl. & Zeyh. var. *calycina* (E. Mey.) Harv. and var. *hirsutissima* Harv. = **L. calycina**
transvaalensis Dummer = **L. carinata**
uniflora Kensit = **Pearsonia**
woodii Bolus = **Lotonis laxa**

LOTUS / *27*

A difficult genus of c. 100 (or 140 or 170) species, with the major diversity centres in the Mediterranean Region and in Macaronesia ; 49 species in the New World. – Some of our species records are perhaps doubtful (e.g. in N Chad and Sudan).

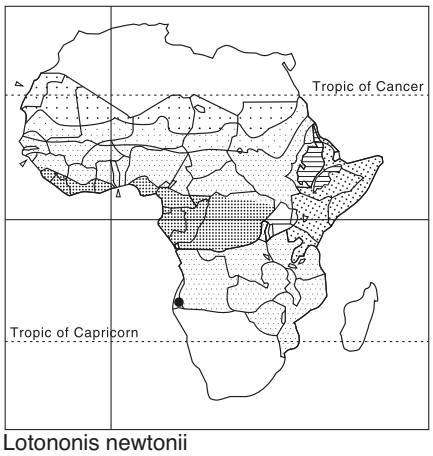
The pod is unknown in 1(+1) species, the mature pod in another one. No ecology is recorded for 2 species in our area. One species is known only from the type.

ALLAN, G. J. & J. M. PORTER (2000). Tribal delimitation and phylogenetic relationship of Loteae and Coronilleae (Faboideae : Fabaceae) with special reference to Lotus : evidence from nuclear ribosomal ITS sequences. *Amer. J. Bot.* 87 : 1871-1881.

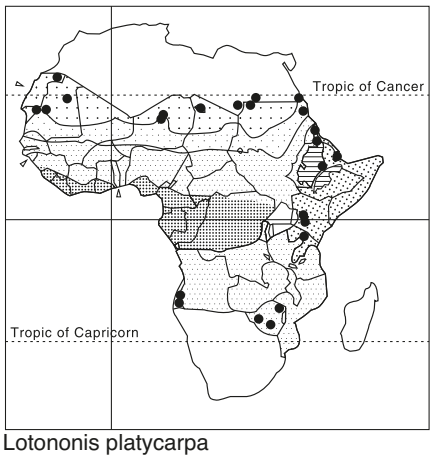
ALLAN, G. J. & al. (2003). Molecular phylogenetic analyses of tribe Loteae (Leguminosae) : implications for classification and biogeography. *In :* KLITGAARD, B. B. & A. BRUNEAU (Eds.), *Advances in Legume Systematics, 10, Higher Level Systematics :* 371-393. Royal Botanic Gardens, Kew.

ARAMBARRI, A. M. (1999). Illustrated catalogue of Lotus L. seeds (Fabaceae). *In :* BEUSELINCK, P. R., Ed., *Trefoil : the science and technology of Lotus. Proceeding of a symposium cosponsored by the American Society of Agronomy and the Crop Science Society of America in St. Louis, MO, USA, 22-24 March 1984 :* 21-41. American Society of Agronomy, Madison, USA (Special Publication 28) & Area de Botánica, Departamento de Biología, Facultad de Ciencias Agrarias y Forestales, Universidad Nacional de La Plata, La Plata.

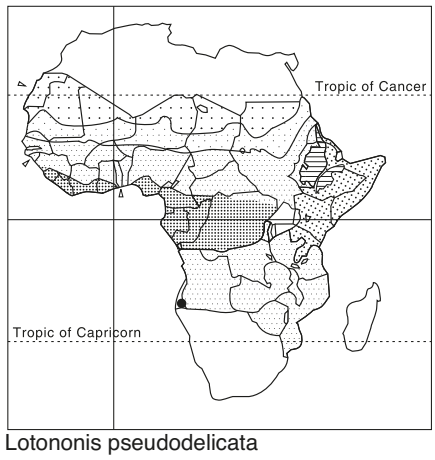
ARAMBARRI, A. M. & al. (2005). Taxonomy of the New World species of Lotus (Leguminosae : Loteae). *Austral. J. Bot.* 53 : 797-812.



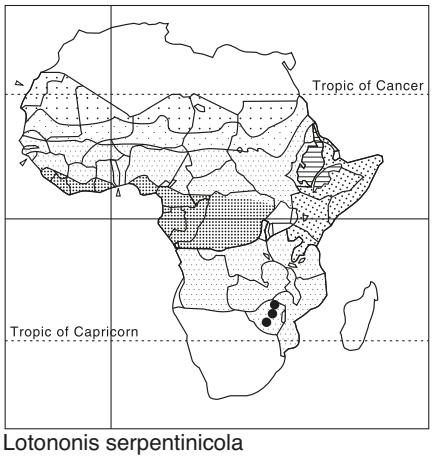
Lotononis newtonii



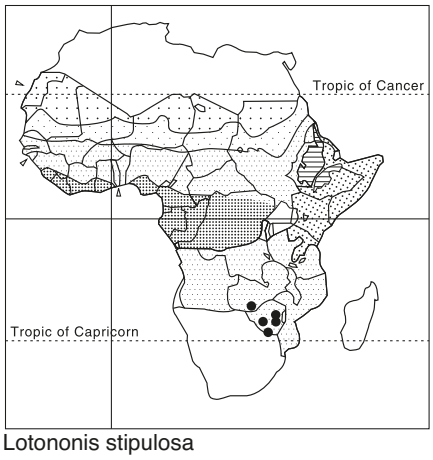
Lotononis platycarpa



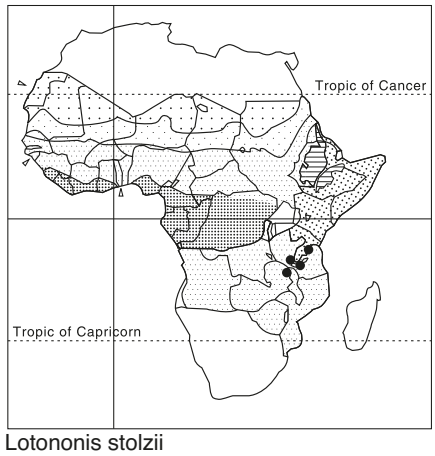
Lotononis pseudodelicata



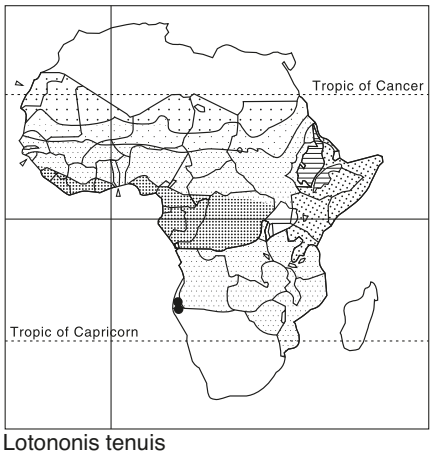
Lotononis serpentinicola



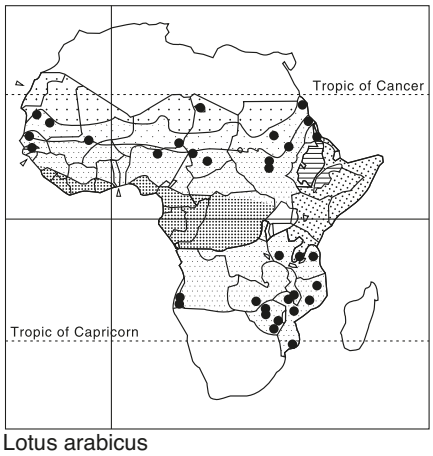
Lotononis stipulosa



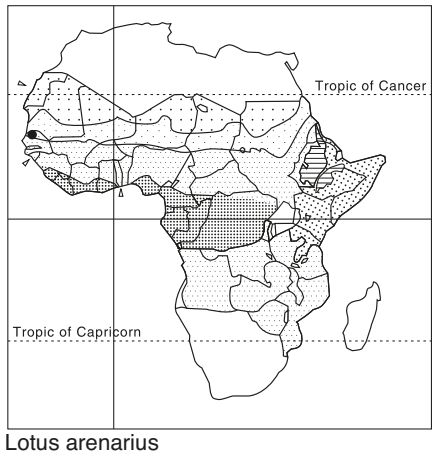
Lotononis stolzii



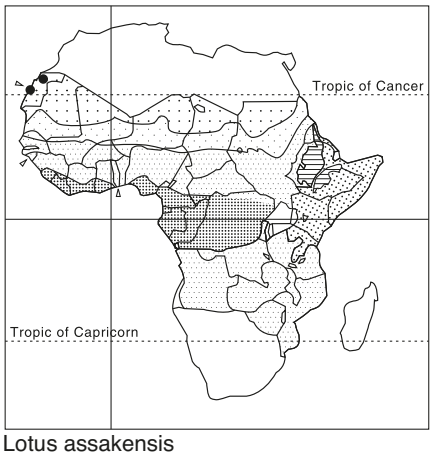
Lotononis tenuis



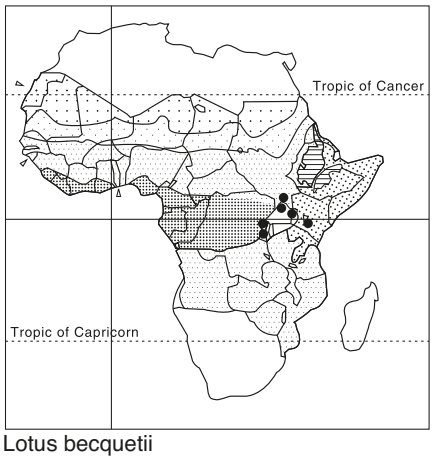
Lotus arabicus



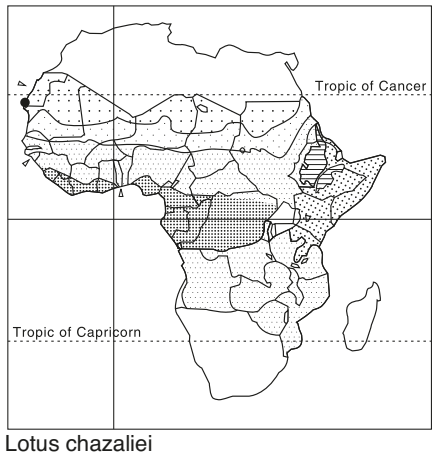
Lotus arenarius



Lotus assakensis



Lotus becquetii



Lotus chazaliei

LOTUS

Lotus arabicus L., *excl.* var. *trigonelloides* (Webb) Webb (= *L. glinoides)*, *excl.* var. *glabrescens* Schweinf p.p. and *L. lalambensis* (= *L. hebranicus)* and *excl.* var. *torulosus* Chiov. (= **L. torulosus)**.

syn.: *L. mossamedensis* Bak.; *L. roseus* Forssk.

Annual herb; stems richly branched from the base, spreading or erect, to 65 cm long, 6 mm Ø, yellowish, often pubescent or pilose throughout with ± spreading or arching hairs.

Sandbanks and mudbanks in rivers; grara; humid, clayey-sandy soil on pool and river banks; 45-1050 m alt.

S Algeria, Egypt (restricted to the Nile banks and some wetlands in oases, doubtful from desert areas); to Baluchistan; S. Africa. – Not in Morocco.

L. arenarius Brot., incl. fa. *typica* H. Lindb., var. *canescens* (G. Kunze) Brand, fa. *minor* Lange, fa. *fusca* H. Lindb., and var. *crispulum* H. Lindb. – Icon.: S. Castroviejo, Fl. Iber. 7/2 :810, 2000.

syn.: *Pedrosia arenaria* (Brot.) R. Lowe; *Lotus aurantiacus* Boiss.; *L. canescens* G. Kunze

Much-branched annual herb with a woody stock; stems (rarely) prostrate or ascendent-erect, 0,5-50 cm long, cylindrical, covered with long, soft hairs giving a greyish aspect.

Flooded river side.

Morocco; Canary Isl.; SW Spain, S & C Portugal.

L. assakensis Coss. ex Brand, incl. var. *longipes* Maire and var. *eu-assakensis* Maire; Sendtnera 8 : 50, 2002.

syn.: *L. ifniensis* A. Caballero, Discurso corr. apert Curso Acad. 1935-1936. Datos geobotánicos del territorio de Ifni. Appéndice : 77, 1935; *L. chazaliei* H. Boissieu var. *ifniensis* (A. Caballero) Maire (according to Monod syn. of *L. chazaliei,* probably by mistake); *L. glaucus* Ait. subsp. *ifniensis* A. Caballero in sched.; *L. glaucus* subsp. *ifniensis* (A. Caballero) A. Caballero in Paunero, Ann. Inst. Bot. Cavan. 10 : 94, tab. 3, 1950.

Perennial herb or sometimes subshrub, densely villous; stems branched, erect or prostrate and ascending, from a rootstock 8 mm Ø.

Clayey-sandy, cultivated grara; sandy depression in coastal hamada; beach.

Morocco.

L. becquetii Boutique

Perennial sparingly pilose or glabrescent herb with procumbent or ascending stems to 1,2 mm Ø, 70 cm long, drying yellowish-green.

Pastures; *Loudetia arundinacea* grassland with scattered trees; rain-forest with *Albizia, Macaranga, Croton, Ocotea ;* track sides; slopes; 1800-2500 m alt.

L. chazaliei H. Boissieu, incl. var. *dalmasii* Maire, but excl. var. *ifniensis* (A. Cabellero) Maire *(= L. assakensis)*.

Perennial herb, moderately to much branched, or undershrub; rootstock to 8 mm Ø with several to many erect or prostrate stems to 30 cm long and 2-3 mm Ø; plant very densely villous.

Drift-sand near the coast.

L. corniculatus L. var. **eremanthus** Chiov. (excl. *L. schoelleri* Schweinf.).

syn.: *L. mearnsii* De Wild. 1925, non Britton 1890; *L. friesiorum* Harms

LOTUS CORNICULATUS VAR. EREMANTHUS

Perennial herb with a woody or ± herbaceous rootstock and erect or straggling slender branches to 2 mm Ø and 60 cm long; the whole plant glabrous or almost so, and drying yellowish-green.

Marshy places in grassland; moist sites; 1400-2700 m alt.

Gillett considered that the material from Ethiopia is partly *L. palustris* Willd. (syn.: *L. lamprocarpus* Boiss.) and partly *L. corniculatus* L. subsp. *major* (Scop.) Hegi

L. discolor E. Mey., *excl.* var. *microcarpus* Brand (= **L. goetzei)**; but incl. var. *cacondensis* Hiern ex Bak. f.

syn.: *L. tigrensis* Bak.; *L. brandianus* Harms – Both of subsp. **discolor.**

Perennial herb, drying yellowish-green, the stems erect or straggling from a woody rootstock, to 70 cm long or occasionally more, and 2,5 mm Ø; hairs throughout the plant appressed, yellowish, rarely over 0,5 mm long; internodes rarely less than 15 mm long.

Grassland; scrub or evergreen forest edges; grassy savanna with clumps of spiny trees; ericoid bush in area of bamboo formation; rocklands; miombo woodland; 1200-4000 m alt.

S. Africa.

Comprises 2 subspp.: – subsp. **discolor ;** – subsp. **mollis** J. B. Gillett – Cf. under **L. mlanjeanus.**

L. garcinii DC. – Icon.: Folia Geobot. Phytotax. (Prague) 3 : 106, 1968.

syn.: *L. stocksii* Boiss.; *Ononis aucheri* Jaub. & Spach; *Crotalaria schweinfurthii* Deflers; *Aspalathus persica* Burm.; *Lotus sharifii* Rech. f. & Esfand.; *L. pumilus* Parsa, nom. illegit.

Annual or biennial herb, or shrublet, looking like a *Crotalaria,* densely white appressed-pilose; stems and branches erect or ascending often bending in towards the centre, 20-40 cm long, paniculate-ramose, occasionally overlapping to the ground, grey-green and slightly hairy; leaflets 3,4 or 5, *all springing from one point.*

Sandy or silty often saline ground.

Sinai; S. Arabia, Abu Dhabi, Ras al Khaimah; Oman; Yemen (Kew Bull. 56 : 715, 2001); Socotra; Abd al Kuri; Iran, Pakistan.

Not in Sudan.

L. glinoides Del., *excl.* var. *schimperi* (Steud.) Batt. (= **L. schimperi)**. – Icon.: L. Boulos, Fl. Egypt. 1: 299, 1999.

syn.: *L. trigonelloides* Webb in Webb & Berthel.; *L. arabicus* L. var. *trigonelloides* (Webb) Webb; *L. ehrenbergii* Schweinf. ex Vierh.

Annual appressed-hairy herb 10-30(-50) cm tall; stems ascending, profusely branching.

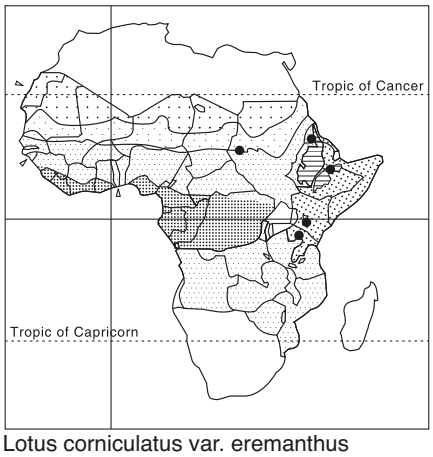
Wadis; sandy reg, galb and kedia; gueltas; clayey grara with *Euphorbia balsamifera, E. echinus ;* also in gardens probably as a weed; humid mud; to 2300 m alt.

Variable species; intermediates between it and *L. schimperi* occur. Boulos in Fl. Egypt 1: 298, 1999, only recognizes one species (*L. glinoides)*.

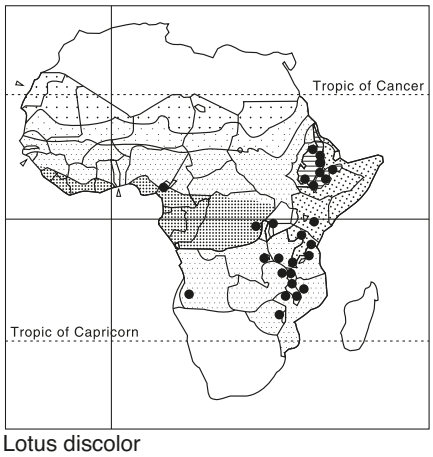
Canary Isl.; Morocco, S Algeria, Libya, Egypt; Arabia, Palestine, Jordan.

Comprises 3 vars.

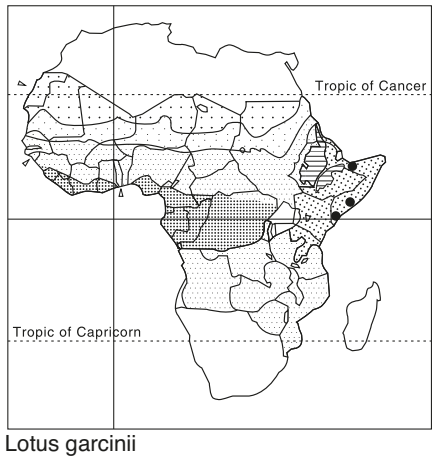
Not in Ethiopia (= *L. schimperi)*; not in Sudan (= *L. arabicus)*.



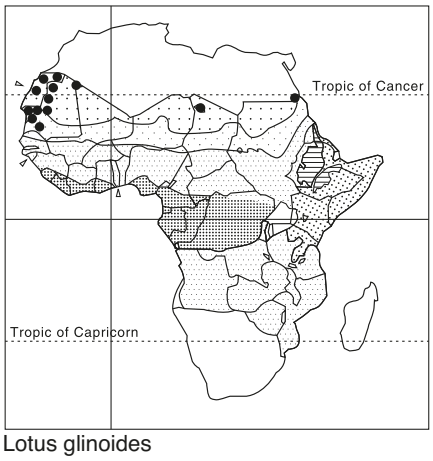
Lotus corniculatus var. eremanthus



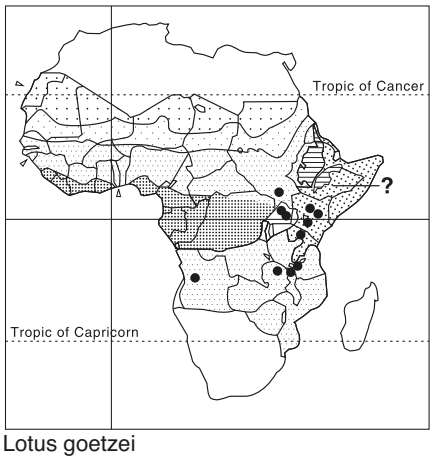
Lotus discolor



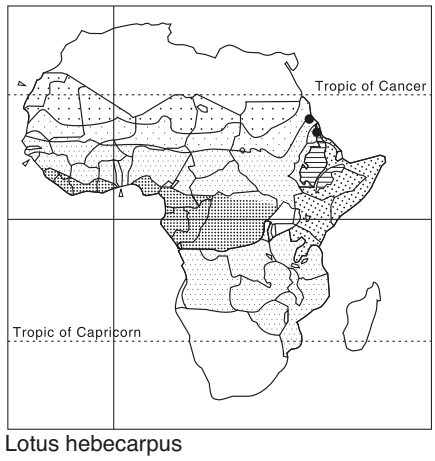
Lotus garcinii



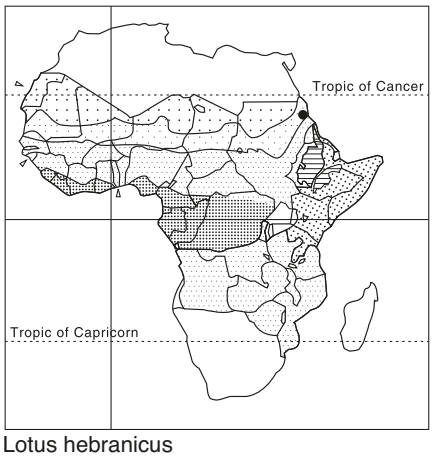
Lotus glinoides



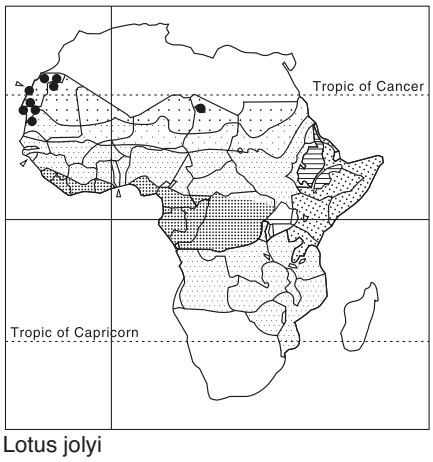
Lotus goetzei



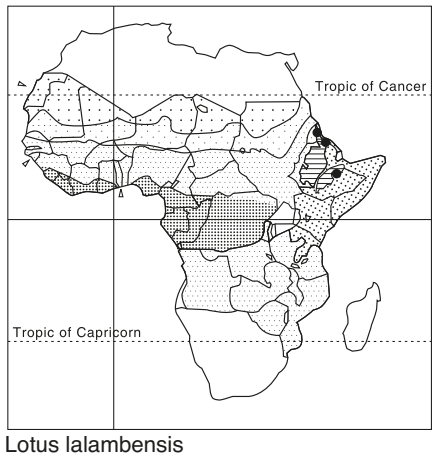
Lotus hebecarpus



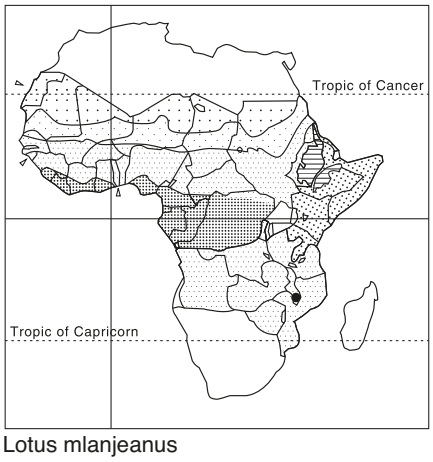
Lotus hebranicus



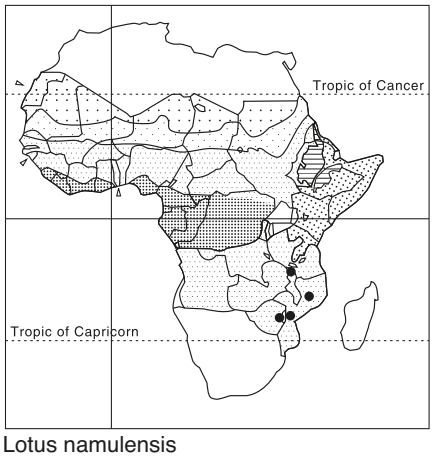
Lotus jolyi



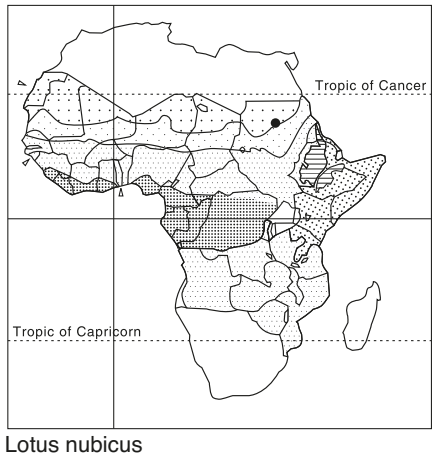
Lotus lalambensis



Lotus mlanjeanus



Lotus namulensis



Lotus nubicus

L. goetzei Harms

syn.: *L. discolor* E. Mey. var. *microcarpus* Brand ; *L. kilimanjaricus* Bak. f. ; *L. nyikensis* Bak. f. ; *L. jaegeri* Harms ; *L. oehleri* Harms

Perennial herb with a massive, woody rootstock ; stems prostrate, ascending or bushy, to 3 mm Ø and to 1(-2) m tall ; epidermis a dark purple or blackish-red when dry, often obscured by dense white or slightly fulvous spreading hairs to 1 mm long ; internodes on the side branches often very short (under 5 mm).

Grassland ; especially in scrub or at forest edges ; 200-3700 m alt.

Varies greatly (a member of the very difficult *L. discolor* complex endemic to the African mountains).

L. hebecarpus J. B. Gillett

Annual or sometimes perennial herb ; stems procumbent, to 40 cm long, 1,3 mm Ø, pilose.

Sandy soil, fairly common ; in valleys and among rocks ; sometimes abundant ; gravelly soil ; *Pennisetum* cultivation ; 0-60-1200 m alt.

Doubtful in Djibouti ; not in Flora of Somalia 1, 1993.

L. hebranicus Hochst. ex Brand ; Kew Bull. 56 : 716, 2001. – Icon.: L. Boulos, Fl. Egypt 1: 299, 1999 ; Publ. Cairo Univ. Herb. 5 : pl. 10b, 1974 (sub nom. *L. deserti)*.

syn.: *L. deserti* Täckh. & Boulos ; *L. arabicus* L. var. *glabrescens* Schweinf. p.p.

Very richly branched, erect or ascending, perennial shrublet to 80 cm tall, *glabrous ;* sometimes flowering in the first year.

Ecology not cited for *Eritrea ;* it is a plant of desert wadis.

Widespread in southern Sinai ; Egypt (rather widespread in the Eastern Desert).

Sudan ? Not in Ethiopia (= *L. lalambensis)*.

L. jolyi Batt., incl. var. *leiocarpus* Maire, var. *eriocarpus* Maire, subsp. *battandieri* Quézel & Santa, nom. inval.

syn.: ? *L. tibesticus* Maire var. *fallax* Maire

Perennial slightly, moderately to very ramose shrublet ; rootstock to 13 mm Ø with several to many prostrate to ascending, rarely erect stems to 1,2 m long, to1,5-2 mm Ø ; villous with hairs 0,1-0,8 mm long, loose to moderately dense, appressed.

Sandy wadis and reg ; sometimes very common ; sandy places in galb and kedia ; sands with *Tamarix ;* sandy hollow in the hamada with *Acacia seyal, Panicum turgidum ;* dunes ; humid places ; ± 40->1800 m alt. (2050 m in Algeria).

Morocco, S Algeria.

L. lalambensis Schweinf. – Icon.: L. Boulos, Fl. Egypt 1: 299, 1999.

syn.: *L. arabicus* L. var. *glabrescens* Schweinf. p.p. (cf. *L. hebranicus) ; L. brachycarpus* var. *lalambensis* (Schweinf.) Brand ; ? *L. brachycarpus* Hochst. & Steud. ex A. Rich. var. *major* Brand ; *L. hebranicus* Brand p.p. quoad specim. Schweinfurth 323 (Eritrea).

Prostrate herb to 50 cm long, annual or short-lived perennial, ± spreading pubescent.

Grassland, cultivations ; 1200-2000 m alt.

Variable species ; its distinction from *L. hebranicus* requires further studies. If the Sinai record is wrong, then *L. hebranicus* and *L. lalembensis* are well separated not only geographically but also ecologically ; the first species occurring in desert wadis, whereas the second is restricted to mountain regions (Sokoloff, Kew Bull. 56 : 716, 2001).

Egypt ; Yemen ; Saudi Arabia. Djibouti ?

Near *L. arabicus* but : – style 4-7 mm long (not 3,3-4) – occurring in montane grassland (not below 1000 m on river-banks and in desert oases). *L. goetzei* differs from *L. lalambensis* in the leaf rachis, which is never prolonged beyond the insertion of the lateral leaflets, the shape of the basal leaflets, and (usually) the shorter style.

[L. lebrunii Boutique]

Radicant plant forming mats, with ramose stems pubescent near the apex ; leaflets pilose all over, plant drying a darker green ; pod unknown.

Rocky savanna ; 2400 m alt.

An unsatisfactory species very near *L. becquetii* and also *L. goetzei ;* more materiel is desirable ; perhaps a product of introgression ; not mapped.

L. mlanjeanus J. B. Gillett

syn.: *Crotalaria minor* C. H. Wright ; *Lotus minor* (C. H. Wright) Bak. f.

Weak straggling herb ; stems slightly striate, with very sparse indumentum, becoming glabrous, hairs short and usually ± appressed ; with much red pigmentation, especially on the calyx.

Common in open grasslands ; *Uapaca* woodlands ; *Widdringtonia* forests ; usually in stony places ; 1800-2580 m alt.

Sometimes treated as a synonym under *L. discolor*, but on account of the characters and isolation of Mt. Mlanje the specific rank is recognized by Gillett.

L. namulensis Brand

syn.: *L. eylesii* Bak. f.

Inflorescences near the base at the ground on short shoots springing from a massive woody rootstock ; stems to 40 cm tall but usually shorter.

Area subject to grass fires ; 1650-2160 m alt.

A good deal of variation in the shape of the leaflets ; this species approches *L. discolor,* especially subsp. *mollis,* on the one hand and *L. goetzei* on the other, but it has not been seen from the areas where the shrubby *L. goetzei* is known.

S. Africa.

L. nubicus Hochst. ex Bak., *excl.* var. *montanus* (A. Rich.) Bak. (= *L. quinatus)*. – Icon.: L. Boulos, Fl. Egypt 1: 299, 1999.

Annual herb ; stems 7,5-20 cm long, herbaceous, many from the base, procumbent, densely appressed grey-silky ; hairs with small bulbous base.

Desert on sandy plains.

Egypt (Gebel Elba and southern Red Sea coastal region).

Not in Ethiopia (= *Argyrolobium rupestre* subsp. *remotum)*.

L. pseudocreticus Maire, Weiller & Wilczek

Perennial herb with a thick, many-headed rootstock from which diffuse much-branched long stems arise ; all parts densely appressed silvery-silky hairy.

Ecology unknown in Western Sahara.

Morocco (coastal sands, dunes).

LOTUS

L. quinatus (Forssk.) J. B. Gillett – Icon.: Fl. Ethiopia 3 : 226, 1989.

Prostrate perennial herb to 50 cm long, appressed or spreading pubescent.

Evergreen bushland ; degraded forest ; grassland ; roadsides ; old cultivations ; 1350-3000 m alt.

Yemen.

Comprises 2 vars.: – var. **quinatus** [syn.: *L. brachycarpus* Hochst. & Steud. ex A. Rich. var. *menachensis* Schweinf.; *Dorycnium quinatum* (Forssk.) C. Christ.]; – var. **brachycarpus** (Hochst. & Steud. ex A. Rich.) J. B. Gillett [syn.: *L. montanus* A. Rich.; *L. nubicus* Hochst. ex Bak. var. *montanus* (A. Rich.) Bak.; *L. brachycarpus* var. *montanus* (A. Rich.) Cufod., nom. inval.;. *Dorycnium schimperi* Jaub. & Spach].

L. robsonii S. Martin & Sokoloff

Perennial herb with creeping rhizome, probably sometimes suffrutescent ; rhizome sympodial, to 4 mm Ø; year-old shoots with leaves well spaced, almost erect, to 40 cm tall, or with prostrate presumably subterraneous lower part to 10-15 cm long which later becomes a part of the rhizome ; stems ± 1 mm Ø, with epidermis cream-coloured to reddish when dry, with ± dense indumentum of spreading curled hairs in the upper and younger part to subglabrous in the lower and older part but then usually with a tuft of hairs in the leaf axils where buds occur ; mature pod unknown.

Scrub, beneath *Erica* (*Philippia)* bushes ; ± 2400 m alt.

Only known from the type collected in 1958.

Can easily be separated from other *Lotus* with constantly *trifoliolate* leaves.

L. roudairei Bonnet ; Adansonia, Sér. 3, 19 : 321-328, 1997 – Icon.: J. Bot. (Morot) 7 : 233, 1893.

syn.: *L. fruticulosus* Coss., nom. nud., non Desf.; *L. hosackioides* Coss. in sched. and ex Roudaire, Rapp. sur la dern. expéd. des chott : 180, s.d., nom. nud.

Perennial herb woody at the base, glaucescent or canescent, appressed villous with numerous stems 15-25 cm tall, ascending, rarely procumbent, slightly ramose.

Rocky places on galb and kedia ; cliff of guelta ; rocks ; sands.

Morocco, Algeria, Tunisia.

L. schimperi Steud. ex Boiss.

Annual, prostrate, sparsely pubescent herb with spreading hairs ; stems 7-30 cm long.

Coastal plains.

Egypt ; Arabia, Abd al Khuri, Socotra ; Pakistan.

This species has been or is treated as conspecific with *L. glinoides* (e.g.: Boulos Fl. Egypt 1: 298, 1999) ; Gillett recognises two species (Kew Bull. 13 : 376, 1959) and suggests that some specimens are hybrids (Schweinfurth 1906).

L. schoelleri Schweinf.

syn.: *L. corniculatus* L. var. *schoelleri* (Schweinf.) Lanza

Perennial herb with a ± woody rootstock and erect or straggling stems to 60 cm long, but usually very much smaller : 3-5 cm ; whole plant practically glabrous.

Grassland ; damp places ; 2000-3000 m alt.

This species is diploid and the closely related *L. corniculatus* s.str. is tetraploid ; *L. schoelleri* typically is a very stunted form.

LOTUS

L. subdigitatus Boutique

Perennial plant ; ± erect herbaceous shoots springing up annually after fires from a massive woody rootstock ; stems subglabrous, the few hairs appressed ; *leaf rachis almost suppressed,* the 5 leaflets arising from one pulvinus ; fruit unknown.

Sandy burnt grassland overlying rocks ; savanna ; 1700 m alt.

Further material is needed.

L. tibesticus Maire – Icon.: Mém. Inst. Franç. Afrique Noire 8 : pl. IV, fig. 1, 1950.

Perennial herb ; stems procumbent or ascending, branched from the base ; all parts with long spreading, flexuous hairs (to 0,65 cm) ; or sometimes stems subappressed-villose ; flowers yellow to ± purple.

Volcanic screes ; sometimes frequent ; 2000-3500 m alt.

? Comprises 2 vars.: – var. **tibesticus** (syn.: *L. tibesticus* var. *genuinus* Maire) ; – var. **fallax** Maire : this taxon has the habit of *L. jolyi,* but with visible and glandular stipules and indumentum of shorter and ± appressed hairs.

Near *L. macranthus* Lowe (Madeira), *L. argyrodes* Murray (syn.: *L. argenteus* Brand, non Webb, Madeira), *L. loweanus* Webb (Madeira).

Revision needed.

L. torulosus (Chiov.) Fiori ; Kew Bull. 56 : 718, 2001.

bas.: *L. arabicus* L. var. *torulosus* Chiov.

syn.: ? *L. brachycarpus* var. *cuscutae* Schweinf.

Procumbent annual herb to 40 cm long, pilose.

Grassy patches in evergreen bushland ; disturbed deciduous bushland ; sandy or gravelly places ; cultivations ; 650-1450 m alt.

L. wildii J. B. Gillett – Icon.: Fl. Zambes. 3(7) : 5, 2003.

Scrambling, bushy perennial herb ± 0,35-1,5(? -3) m tall with erect branching stems, appressed pilose with hairs to 0,5 mm long ; leaflets densely dotted above with minute, dark red, impressed spots ; axillary glands large, black ; plant sometimes procumbent.

Grassland ; grassy slopes ; forest edge ; sometimes frequent ; *Acacia* veldt ; 600-2500 m alt.

Near *L. discolor.*

Lotus palustris Willd. is not present in our area.

INSUFFICIENTLY KNOWN:

Lotus jacobaeus L.

* * *

SYNONYMS :

Lotus arabicus L.
- var. *glabrescens* Schweinf. p.p. = **Lotus hebranicus, L. lalambensis**
- var. *torulosus* Chiov. = **L. torulosus**
- var. *trigonelloides* (Webb) Webb = **L. glinoides**

arguinensis Maire = **L. jolyi**

aurantiacus Boiss. = **L. arenarius**

borkouanus Quézel = **L. arabicus**

brachycarpus Hochst. & Steud. ex A. Rich.
- var. *cuscutae* Schweinf. = **L.** ? **torulosus**
- var. *lalambensis* (Schweinf.) Brand = **L. lalambensis**
- var. *major* Brand = **L. lalambensis**
- var. *menachensis* Schweinf. = **L. quinatus** var. **quinatus**
- var. *montanus* (A. Rich.) Bak. = **L. quinatus** var. **brachycarpus**

brandianus Harms = **L. discolor** subsp. **discolor**
canescens G. Kunze = **L. arenarius**
capillipes Batt. & Trab. = **L. jolyi**
chazaliei H. Boissieu var. *dalmasii* Maire and var. *ifniensis* (A. Caballero) Maire = **L. assakensis**
corniculatus L. var. *schoelleri* (Schweinf.) Lanza = **L. schoelleri**
deserti Täckh. & Boulos = **L. hebranicus**
discolor E. Mey. var. *microcarpus* Brand = **L. goetzei**
ehrenbergii Schweinf. ex Vierh. = **L. glinoides**
eylesii Bak. f. = **L. namulensis**
friesiorum Harms = **L. corniculatus** var. **eremanthus**
fruticulosus Coss., nom. nud., non Desf. = **L. roudairei**
glaucus Ait. subsp. *ifniensis* A. Caballero in sched. and subsp. *ifniensis* (A. Caballero) A. Caballero = **M. assakensis**
glinoides Del. var. *schimperi* (Steud.) Batt. = **L. schimperi**
hebranicus Brand p.p. = **L. lalambensis**
hosackioides Coss. in sched. and ex Roudaire, nom. nud. = **L. roudairei**
ifniensis A. Caballero = **L. assakensis**
jaegeri Harms = **L. goetzei**
kilimanjaricus Bak. f. = **L. goetzei**
maroccanus Ball var. *simulans* Maire = **L. arenarius**
mearnsii De Wild., non Britton = **L. corniculatus** var. **eremanthus**
minor (C. H. Wright) Bak. f. = **L. mlanjeanus**
montanus A. Rich. = **L. quinatus** var. **brachycarpus**
mossamedensis Bak. = **L. arabicus**
nubicus Cufod., non Hochst. ex Bak. = **Argyrolobium rupestre** subsp. **rupestre**
nubicus Hochst. ex Bak. var. *montanus* (A. Rich.) Bak. = **Lotus quinatus** var. **brachycarpus**
nyikensis Bak. f. = **L. goetzei**
oehleri Harms = **L. goetzei**
platycarpos Viv. = **Lotononis**
pumilus Parsa = **Lotus garcinii**
roseus Forssk. = **L. arabicus**
sharifii Rech. f. & Esfand. = **L. garcinii**
stocksii Boiss. = **L. garcinii**
tigrensis Bak. = **L. discolor** subsp. **discolor**
tibesticus Maire var. *fallax* Maire = **L.** ? **jolyi**
trigonelloides Webb = **L. glinoides**

LUPINOPHYLLUM = **TEPHROSIA**

LUPINUS / *3*

A genus of about 200 species, most numerous in W N. and S. America ; a second centre around the Mediterranean. Several species introduced (naturalized) in tropical Africa (See Enum. 2 : 102, 1992).

L. somaliensis poorly known, and seeds not seen.

AÏNOUCHE, A. & al. (2004). Molecular phylogeny, diversification and character evolution in Lupinus (Fabaceae) with special attention to Mediterranean and African lupines. *Pl. Syst. Evol.* 246 : 211-222.

KÄSS, E. & M. WINK (1997). Molecular phylogeny and phylogeography of Lupinus (Leguminosae) inferred from nucleotide sequences of the rbcL gene and ITS 1 + 2 regions of rDNA. *Pl. Syst. Evol.* 208 : 139-167.

SALMANOWICZ, B. P. (1999). Seed globulins in the Old World Lupinus species : Comparative study by HPLC. *Genetic Resources Crop Evol.* 46 : 409-417.

Lupinus princei Harms – Icon.: Agnew & Agnew, Upl. Kenya Wild Fl.: pl. 50, 1994.

Erect annual or short-lived perennial bushy herb with softly tomentose stem 30-120 cm tall ; flowers blue with a white and yellow median zone to the standard, rarely all white.

Upland grassland ; in Kenya locally common in grassland, possibly associated with old pastoral encampments (fide Agnew & Agnew o.c.: 146) extending down to upper fringes of *Brachystegia* woodland ; 1500-2800 m alt.

Closely allied to Mediterranean *L. pilosus* L., and to *L. somaliensis.*

L. somaliensis Bak.

Perennial herb ; stems pilose with hairs 1-2 mm long ; flowers blue with a little orange ; fruit unknown.

On rocks ; c. 1500-1550 m alt.

Only known from 2 original collections dating from the end of the 19th century.

L. tassilicus Maire (*L. digitatus* aggregate).

syn.: *L. luthereaui* Maire ; *L. pilosus* L. susbp. *tassilicus* (Maire) Quézel & Santa, comb. inval.; *L. varius* auctt. non L.; *L. pilosus* subsp. *luthereaui* (Maire) Maire

Annual branched stems, ± woody at base, silky-villous, 30-50 cm tall from a woody rootstock ; flowers blue with a yellow spot to the standard, wings blue, keel greenish-white to yellowish.

Desert wadis ; loose sand ; in gardens.

Morocco, Algeria, Libya.

Note : **L. digitatus** Forssk. according to Greuter & al., Med-Checklist 4 : 134-135, 1989, is known only from Egypt.

MACHAERIUM / *1*

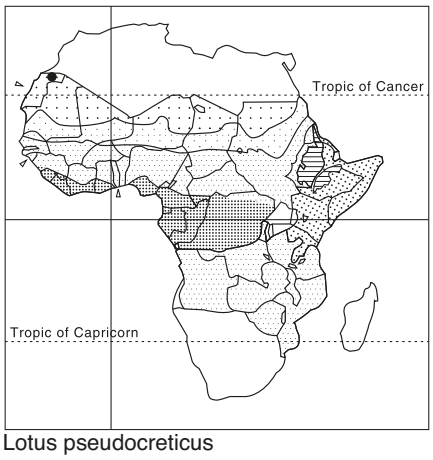
Machaerium lunatum (L. f.) Ducke

syn.: Enum. 2 : 102, 1992 ; *Drepanocarpus africanus* G. Don ; *Pterocarpus apterus* Gaertn.; *Sommerfeldtia obovata* Schumach.

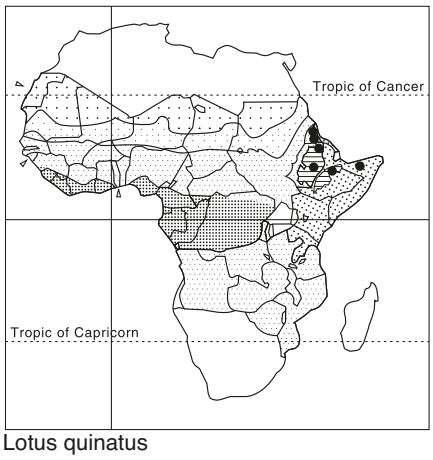
Straggling or erect shrub, widespreading, glabrous, with recurved stipular thorns 3-3,5 m tall ; flowers purple ; pod broadly sickle-shaped, flat.

Swampy places, along salt marshes, tidal river estuaries, often in association with mangrove formations ; rice fields ; coastal.

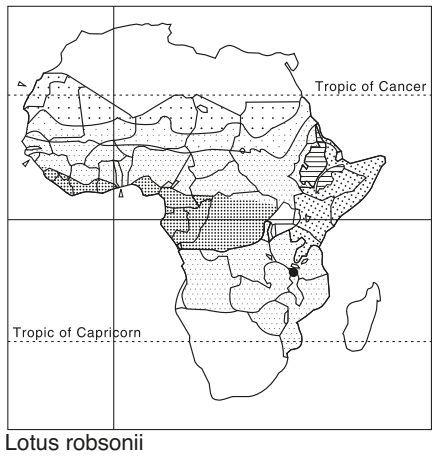
Bioko/Fernando Poo ; E coast of Central America, Greater and Lesser Antilles, S. America.



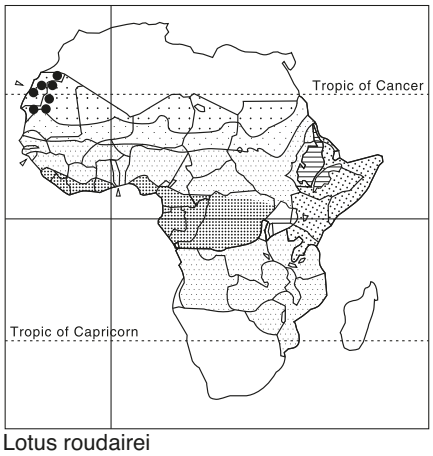
Lotus pseudocreticus



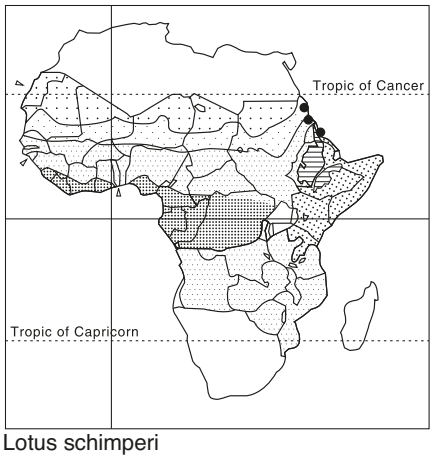
Lotus quinatus



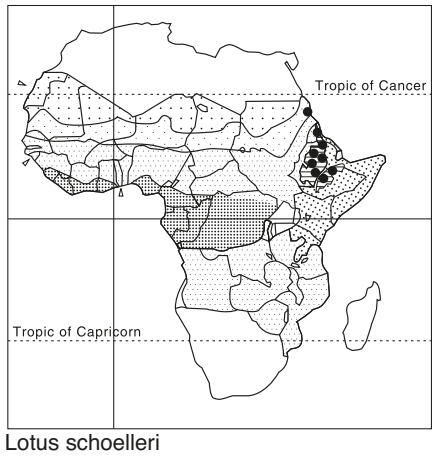
Lotus robsonii



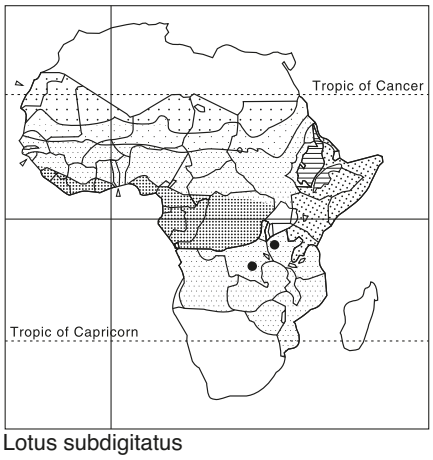
Lotus roudairei



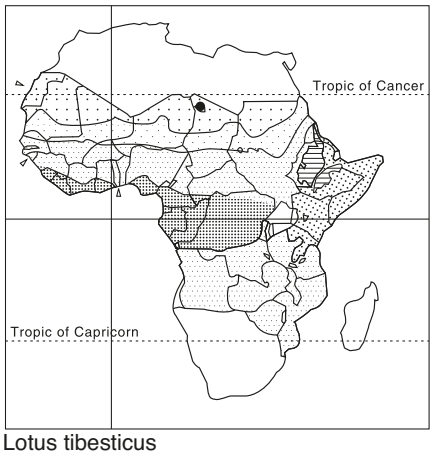
Lotus schimperi



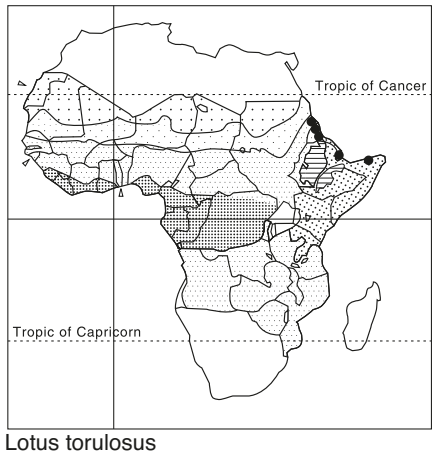
Lotus schoelleri



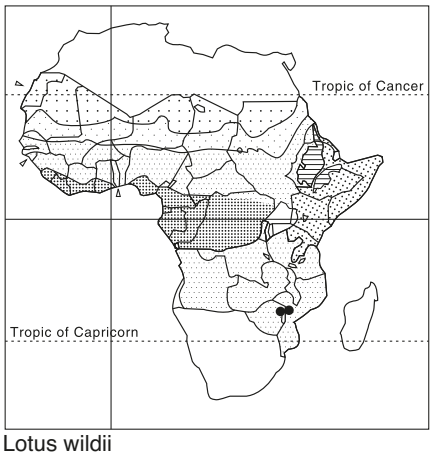
Lotus subdigitatus



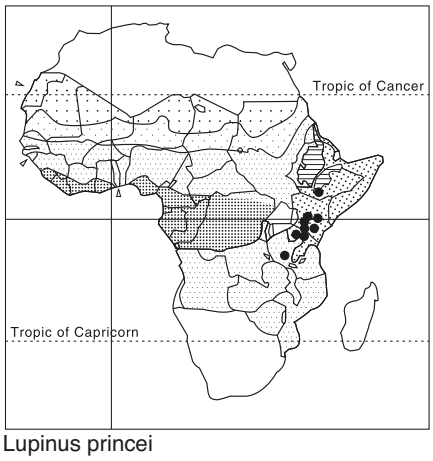
Lotus tibesticus



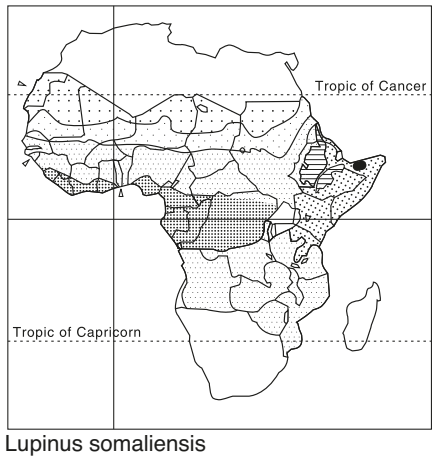
Lotus torulosus



Lotus wildii



Lupinus princei



Lupinus somaliensis

MACROTYLOMA / *22*

The fruit is unknown in 1 species, the seeds in 3 species and mature seeds in further 2 species. For one species no ecology is recorded. Two species are known only from the type.

MACKINDER, B. (1998). Macrotyloma (Leguminosae-Papilionoideae) in the Flora Zambesiaca area. *Kirkia* 17 : 69-84.

Macrotyloma africanum (R. Wilczek) Verdc.

Annual or short-lived perennial climbing or trailing herb 0,3-1,3 m long, often forming a tangled mass ; stems glabrous or sparsely puberulous.

Grassland ; *Acacia, Commiphora* bushland ; termite hills in seasonally flooded grassland ; miombo ; mixed deciduous woodland and grassland ; sometimes in wetter sites ; rocky outcrops ; sandy areas ; old cultivated land ; roadsides ; laterite ; disturbed ground ; plateau with tree-clumps ; *Isoberlinia, Brachystegia, Acacia, Combretum, Strychnos* scrub woodland ; *Sporobolus pyramidalis* pasture ; *Pterocarpus, Combretum* woodland ; sometimes as a weed ; disturbed ground ; 600-1800 m alt.

M. axillare (E. Mey.) Verdc.

bas.: *Dolichos axillaris* E. Mey.

syn.: *D. axillaris* E. Mey. var. *pubescens* E. Mey., nom. illegit. ; *Clitoria viridiflora* Bouton ex Hook. Ic. Pl. 2 : tab. 152, 1837 (= var. **glabrum)**.

Perennial climbing or trailing herb 0,2-3,5 m long ; rootstock often very stout and woody ; stems with appressed, spreading or tangled yellowish hairs or glabrescent.

Miombo ; seasonally flooded grassland ; thickets ; open forest ; edges of cultivations ; bushland ; savanna with *Hyparrhenia ;* forest gallery ; fallow land ; sandy places and sand dunes ; granite outcrop ; sometimes near rivers ; disturbed places ; hill slopes ; forest margins ; dambo edges ; termite mound ; grassland with scattered *Acacia, Combretum* etc. ; mopane, *Terminalia sericea* savanna ; *Brachystegia* woodland ; shrubberies bordering rainforest ; *Entada, Parinari* savanna ; dense *Pappea, Hymenodictyon, Trichocladus* woodland, etc. ; 0-2350 m alt.

Botswana, Namibia, S. Africa ; Madagascar ; Comoro Isl., Mascarenes ; Yemen ; Sri Lanka.

Comprises 3 vars. (intermediates known).

M. bieense (Torre) Verdc.

Rhizomatous undershrub with erect stem, ± 50 cm tall ; branches flexuous, elongated, canescent-tomentose.

Common in dry places amongst *Glumaceae.*

Only known from the type collected in 1906.

The drawing of the standard given by Torre is inaccurate (vide Verdcourt).

M. biflorum (Schumach. & Thonn.) Hepper

Prostrate or scandent herb to 2 m long from a woody rootstock ; stems annual, slender, often slightly flexuous, all axes with a spreading whitish pubescence.

Miombo woodland, on sandy soil ; humid places ; roadsides in red clayey soil ; cultivations on siliceous ground ; granite or ironstone outcrops ; grassy open savanna ; path edges ; forest fringe ; open savanna woodland with *Isoberlinia doka, Terminalia ;* 210-1500 m alt.

Comprises 2 vars.

M. brevicaule (Bak.) Verdc.

Perennial (?ever), erect herb ; stems 15-60 cm tall, slightly ramose or simple, ± woody with white, ± spreading hairs to glabrescent ; the stems send out lateral serpent-like secondary stems ; pods subterranean.

Among rocks ; open savanna woodland (*Combretum* sp. ; *Butyrospermum parkii, Alysicarpus* sp.) ; 360 m alt.

Few collections known.

M. daltonii (Webb) Verdc.

An apparently annual, or sometimes perennial, climbing or trailing herb to 70 cm long ; stems covered with fairly long soft hairs.

Grassland ; thicket ; open *Brachystegia* woodland and derived cultivations ; wase ground ; savanna ; clayey or stony soils ; termite mound ; fallow land ; *Acacia* woodland ; *Adansonia, Commiphora, Anogeissus* deciduous woodland ; *Anogeissus, Dodonaea, Grewia, Acacia* stunted deciduous woodland on steep sandstone slope ; *Anogeissus* bushland ; *Julbernardia* woodland on sandy soil ; *Baikiaea* woodland on Kalahari sands ; etc., 450-1500 m alt.

Cape Verde Islands ; Botswana.

Not in Namibia (= *M. uniflorum)*.

M. decipiens Verdc.

Prostrate perennial plant with filiform stems to 50(-? 100) cm long with spreading ± dense hairs becoming subglabrous.

Ecology unknown.

Only known from the type collected in 1948.

M. densiflorum (Bak.) Verdc.

Erect perennial herb 0,4-1,75 m tall, from a tough woody rootstock ; stems several, sparsely branched at base, densely covered with ± appressed silvery or ferruginous hairs.

Hedges of cultivation ; rock outcrops ; *Brachystegia, Julbernardia, Isoberlinia, Uapaca* woodland ; on Kalahari sand ; *Cryptosepalum* woodland on sand ; shallow ironstone soil ; bank of water run-off ditch, etc. ; 990-2010 m alt.

Comprises 2 vars. : – var. **densiflorum** (syn. : *Dolichos densiflorum* var. *angustus* Bak. f. ; *D. hendrickxii* De Wild. ; *D. ringoetii* De Wild.) ; – var. **longicalyx** Verdc.

M. dewildemanianum (R. Wilczek) Verdc.

bas.: *Dolichos dewildemanianus* R. Wilczek

syn.: *Dolichos erectus* De Wild. 1913, non Bak. f. 1894, nom. illegit., incl. var. *brevifolius* De Wild.

Erect, perennial herb 7-50 cm tall from a woody, fleshy root ; stems several, 3-20, with white ± appressed hairs ; seeds unknown.

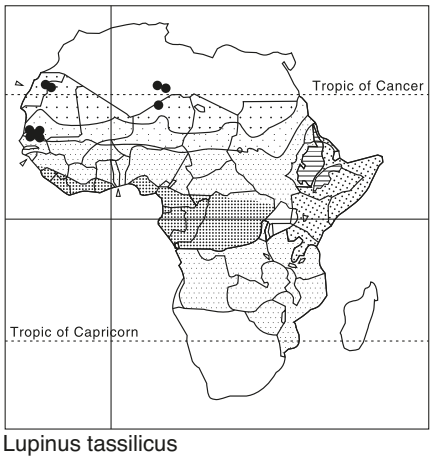
Grassland ; swamps ; burnt areas ; dry woodland ; bushland ; clearing ; open dry sandy soil ; 1400-1860 m alt.

M. ellipticum (R. E. Fries) Verdc.

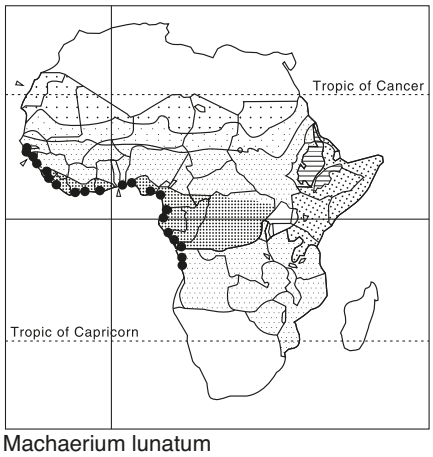
syn.: *Dolichos eriocaulus* Harms

Erect perennial herb 0,5-1 m tall from a tough, but perhaps not tuberous, woody rootstock ; stem single, branched, shortly woolly with dense grey or ferruginous spreading hairs.

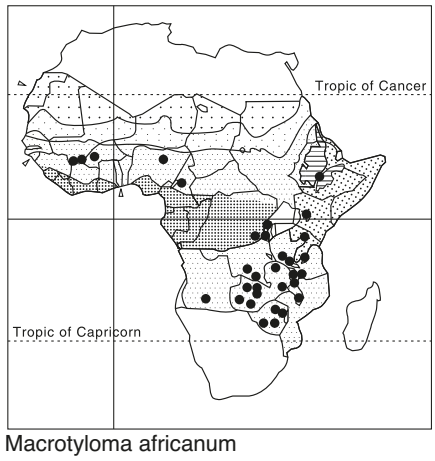
Brachystegia, Uapaca woodland ; secondary bush ; museshi woodland, etc. ; 1260-1800 m alt.



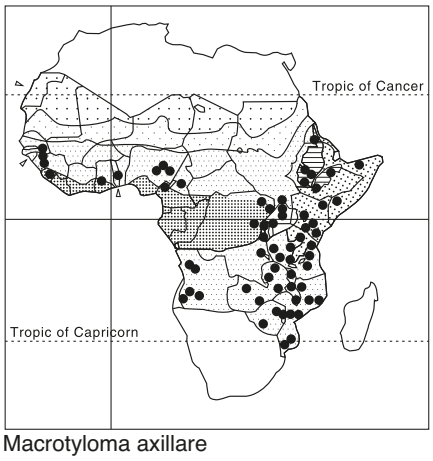
Lupinus tassilicus



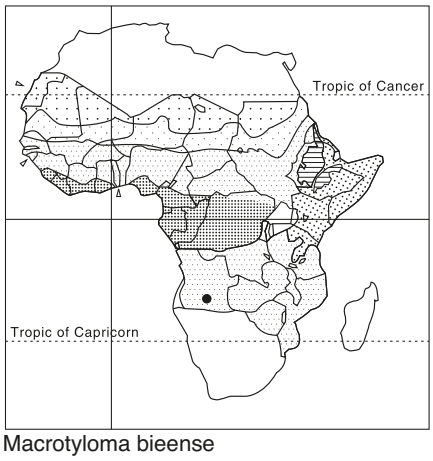
Machaerium lunatum



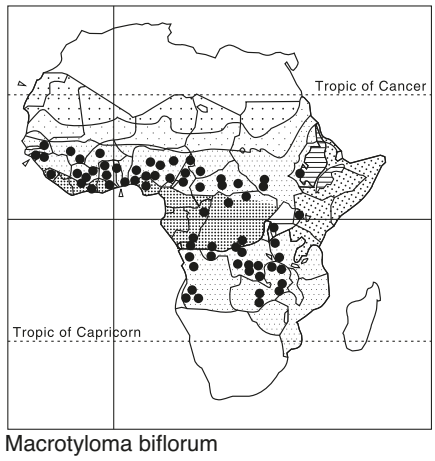
Macrotyloma africanum



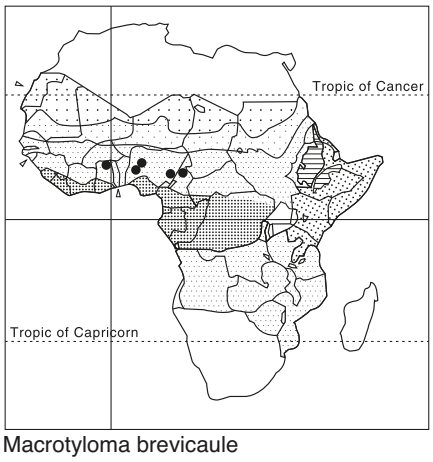
Macrotyloma axillare



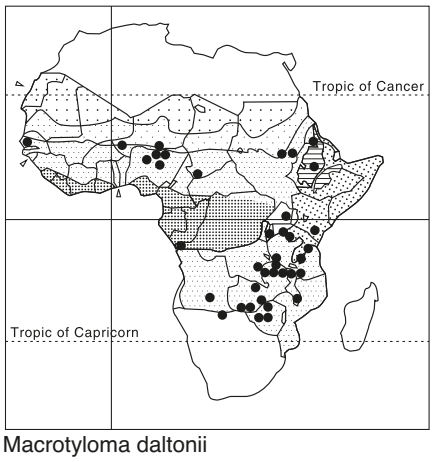
Macrotyloma bieense



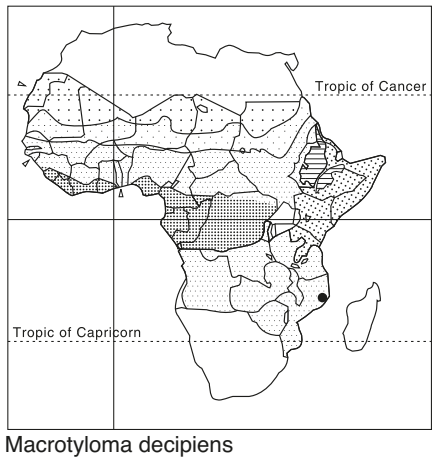
Macrotyloma biflorum



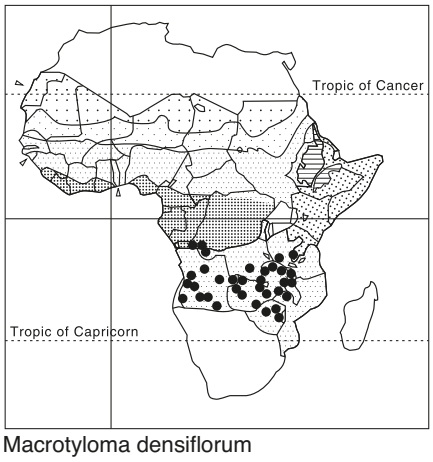
Macrotyloma brevicaule



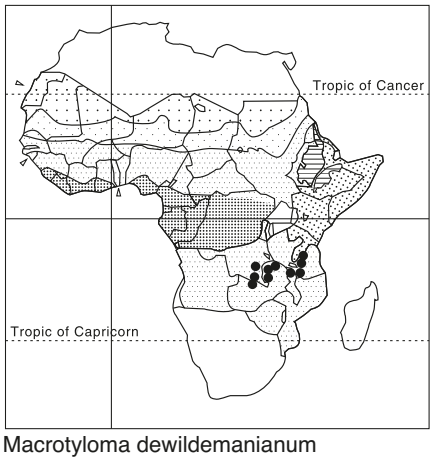
Macrotyloma daltonii



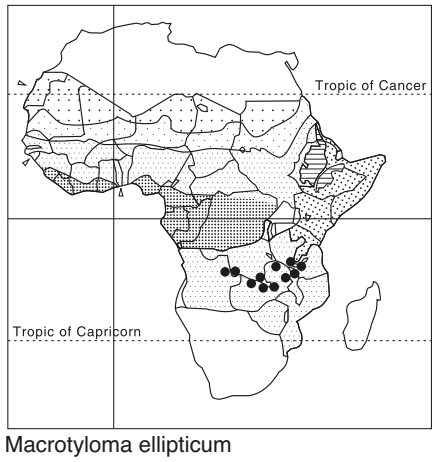
Macrotyloma decipiens



Macrotyloma densiflorum



Macrotyloma dewildemanianum



Macrotyloma ellipticum

MACROTYLOMA

M. fimbriatum (Harms) Verdc.

syn.: *Dolichos esculentus* De Wild.

Erect perennial herb, 12-60 cm tall, from a dark brown woody rootstock consisting of a carrot-like central stock ± 15 cm long, 2,5 cm Ø with thinner horizontal roots ; stem ? single, simple, sparsely hairy or glabrous ; seeds unknown.

Secondary *Brachystegia* woodland ; banks of swampy grassland ; *Brachystegia, Uapaca* woodland on sand ; open dry woodland ; cleared woodland ; rocky hilltop ; *Brachystegia spiciformis, B. boehmii* degraded woodland, etc. ; 600-1800 m alt.

M. geocarpum (Harms) Maréchal & Baudet ; Pasquet & al., Biochem. Syst. Ecol. 30 : 943-952, 2002. – Kersting's ground-nut.

Prostrate annual or perennial herb ; stems 5-8 cm long, rooting at the nodes, pubescent to ± glabrous.

Dry savanna woodland with *Combretum, Boswellia, Gardenia ;* 280 m alt. (Cameroon, wild plant) ; sand (Central Afr. Rep., wild).

Comprises 2 vars., one cultivated [var. **geocarpum**], the other wild [var. **tisserantii** (Pellegr.) Maréchal & Baudet] ; the more recent works indicate that the two taxa belong to different species.

M. hockii (De Wild.) Verdc.

Perennial herb ; stems erect 25-60 cm tall, caespitose, sparsely white pubescent arising from a woody rootstock ; pod and seeds unknown.

Woodland on grey water-logged clay ; very open forest on wet clayey soil.

M. maranguense (Taub.) Verdc.

syn.: *Dolichos zanzibarensis* Bak. f.

Perennial climbing or trailing herb ; stems 0,8-2,4 m long, often rooting at the nodes, pubescent, with short spreading hairs.

Hyparrhenia grassland ; fallow land ; *Acacia* savanna ; grasssland with scattered *Acacia, Cassia, Pterocarpus, Kigelia ;* lakeside on alkaline soil ; 310-1650 m alt.

S. Africa.

M. oliganthum (Brenan) Verdc.

Perennial herb ; some shoots erect at first, others trailing or twining, to 45 cm long ; rootstock thick and woody ; stems covered with spreading hairs. Seeds known !

Brachystegia, Uapaca woodland ; sandy soil ; old gardens ; grassland with *Cussonia* and shrubs ; thick bush ; rocky hillside, top of escarpment ; granite kop (in *Brachystegia* woodland) ; 550-1700 m alt.

M. prostratum Verdc.

Trailing perennial herb about 1 m long from a thin woody rootstock ; stems slender, covered with rather tangled white hairs ; mature seeds unknown.

Grassy areas in *Brachystegia* woodland ; sandy soil ; 1100-1350 m alt.

M. rupestre (Welw. ex Bak.) Verdc.

syn.: *Dolichos longistipellatus* Harms, incl. var. *gossweileri* Bak. f. ; *D. kasaiensis* R. Wilczek ; *Macrotyloma kasaiensis* (R. Wilczek) Verdc.

MACROTYLOMA RUPESTRE

Perennial herb from a woody many-headed root ; stems prostrate, somewhat flexuous, extending, slender, 15-100 cm long, longitudinally striated, densely appressed villous-silky or hairs subspreading, to ± subglabrous ; mature seeds unknown.

Rocky sandy hill-top ; open sand velt ; river banks ; *Eucalyptus* plantation ; *Guibourtia, Baikiaea* woodland on Kalahari sand ; grassland ; along the edges of forest ; roots penetrating the stony soil or clefts of the rocks ; ± 1200-1800 m alt.

Namibia.

M. schweinfurthii Verdc., non *Dolichos schweinfurthii* Harms

Annual (? ever) herb ; stems flexuous, 35-70 cm and more long, with subspreading hairs or appressed-interlaced.

Open teak plantation with some undergrowth of *Imperata cylindrica ;* roadside in savanna woodland ; ± 1000 m alt.

Very rare.

M. stenophyllum (Harms) Verdc.

Slender annual or perennial climbing or trailing herb 0,2-0,9 m long ; stems with sparse to rather dense spreading hairs. Seeds known !

Savanna on lateritic soil ; denuded plateau with pebbles, blocks and hardpan with iron + bauxite with intercalated humid earth with *Ctenium newtonii, Loudetia* cf. *kagerensis ;* savanna with *Daniellia, Lophira* and *Panicum, Hyparrhenia, Andropogon* grassland ; fallow land ; *Loudetia arundinacea* grassland with scattered trees, on rocky outcrop in thin soil with *Selaginella njamnjamensis, Aeollanthus* spp., *Aloe* sp. ; invading rice paddies during the dry season ; 780-1300 m alt.

M. stipulosum (Welw. ex Bak.) Verdc.

syn.: *Dolichos fischeri* Harms ; *D. stipulosus* Welw. ex Bak. var. *randii* Bak. f. and fa. *angustifoliolatus* Bak. f. ; *D. nanus* Harms ; *D. katangensis* De Wild. ; *Macrotyloma katangense* (De Wild.) Verdc.

Erect perennial herb 10-30 cm tall with a carrot-like woody rootstock ; stems covered with spreading white hairs.

Artificial pasture ; rocky outcrops ; wet savanna ; *Julbernardia, Brachystegia* mixed deciduous woodland on sandy soil ; laterite ; *Julbernardia globifera, Brachystegia boehmii* woodland ; *Brachystegia, Diplorhynchus, Monotes* woodland ; open grass "mumua" woods in moist situation ; 1000-1950 m alt.

M. tenuiflorum (Micheli) Verdc.

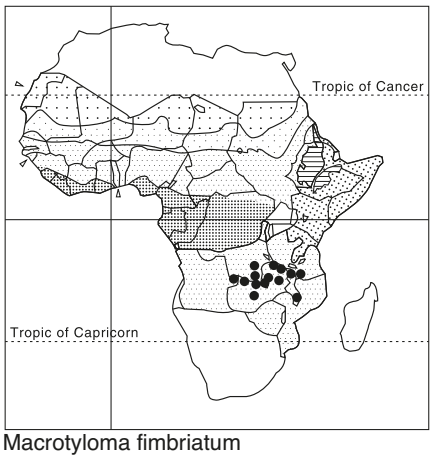
Completely prostrate herb with stems to 0,8 m long from a woody rootstock ; stems slender, densely covered with spreading to somewhat appressed pale hairs, often rooting at the nodes.

Footpath ; stony dry places ; on ferruginous hard-pan in *Terminalia glaucescens* savanna ; cultivated ground ; degraded savanna on calcareous schist, bare ground ; *Annona* savanna ; tall grass margin ; stony dry places ; 540-1300 m alt.

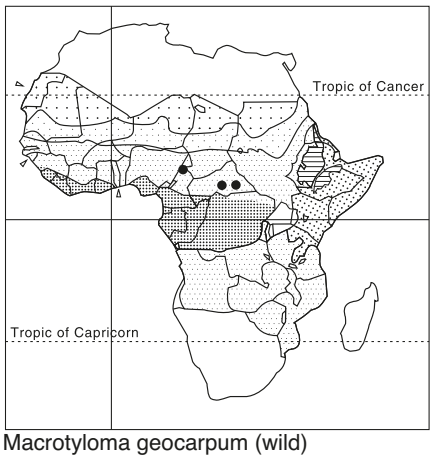
M. uniflorum (Lam.) Verdc.

syn.: *Dolichos pubescens* L., nom. rejic. (Taxon 47 : 871, 1998).

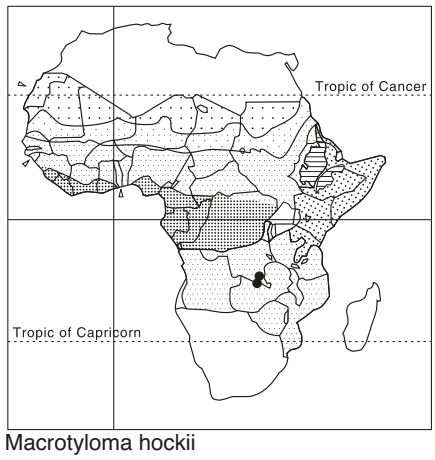
Perennial or annual climbing herb to 0,6 m long, often from a tough rootstock, possibly sometimes suberect ; stems sparsely to fairly densely covered with ± spreading soft whitish hairs.



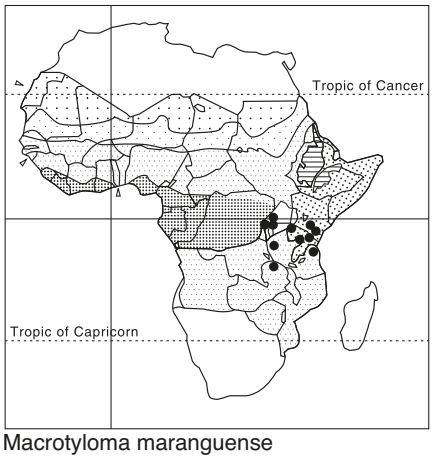
Macrotyloma fimbriatum



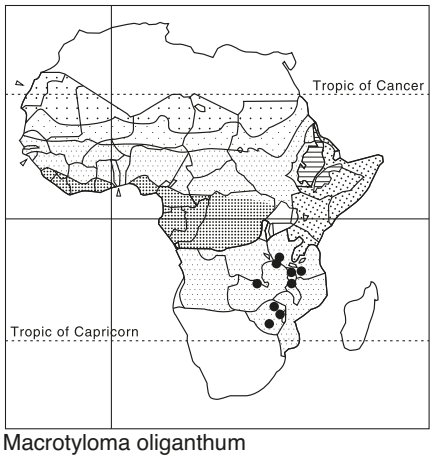
Macrotyloma geocarpum (wild)



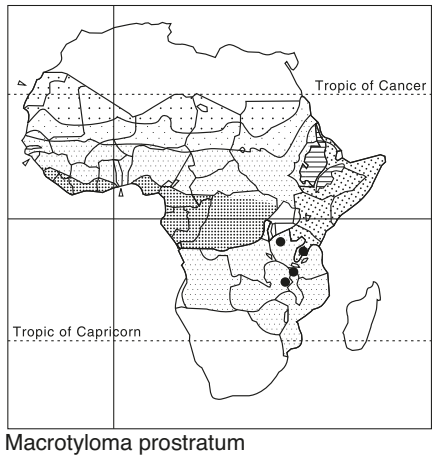
Macrotyloma hockii



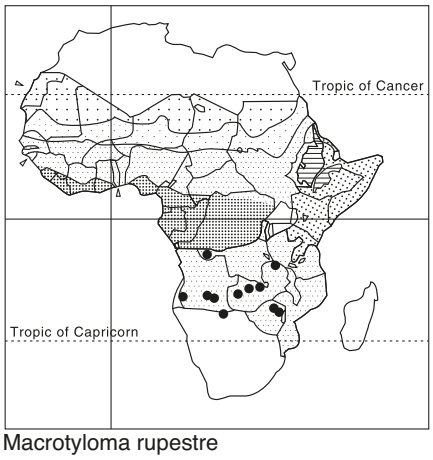
Macrotyloma maranguense



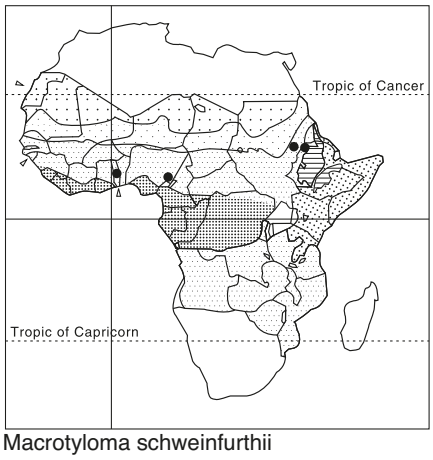
Macrotyloma oliganthum



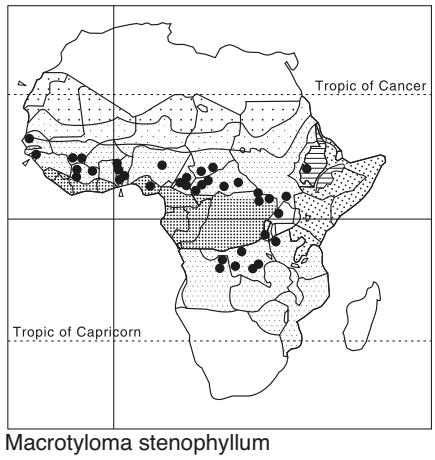
Macrotyloma prostratum



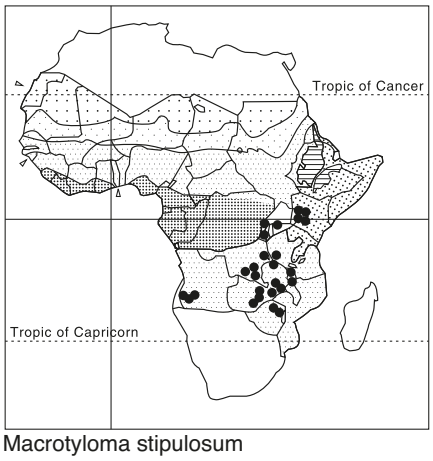
Macrotyloma rupestre



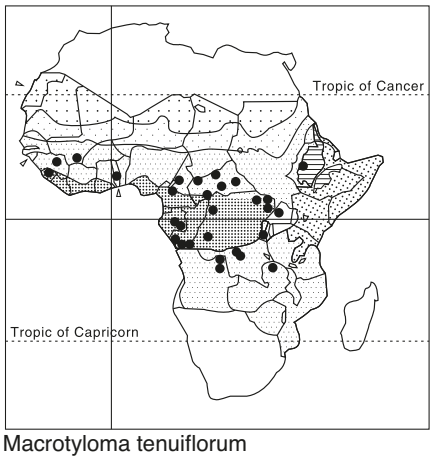
Macrotyloma schweinfurthii



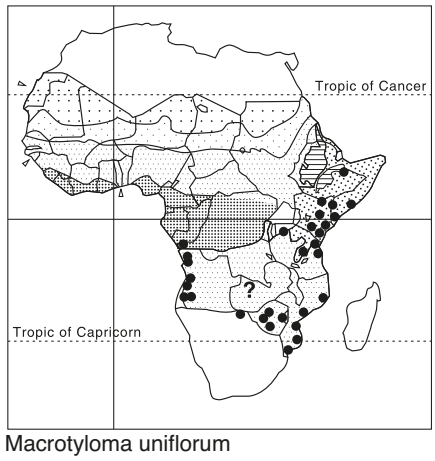
Macrotyloma stenophyllum



Macrotyloma stipulosum



Macrotyloma tenuiflorum



Macrotyloma uniflorum

MACROTYLOMA UNIFLORUM

Acacia bushland ; often on rocky outcrops ; old cultivations ; grassland with scattered *Hyphaene, Sterculia,* etc.; dry *Acacia, Commiphora* thickets ; sand dunes ; orange-red loam on coral rag ; recent sands ; grassland and coastal thicket ; wastelands and other disturbed places ; sandy loam, etc.; 0-1700 m alt.

Namibia, Botswana, NE S. Africa. Var. **uniflorum** native of India and disjunctly to Namibia [fide B. Mackinder in Fl. Zambes. 3(5) : 114, 2001].

Comprises 4 vars.

SYNONYMS :

Kerstingiella biflora (Schumach. & Thonn.) Lackey = **Macrotyloma**

geocarpa Harms and var. *tisserantii* (Pellegr.) Hepper = **M. geocarpum** and var. **tisserantii**

tisserantii Pellegr. = **M. geocarpum** var.

uniflora (Lam.) Lackey = **M. uniflorum**

Macrotyloma chrysanthum (A. Chev.) Verdc., incl. var. *occidentale* (Harms) Verdc. = **Macrotyloma biflorum** var. **biflorum**

kasaiense (R. Wilczek) Verdc. = **M. rupestre**

katangense (De Wild.) Verdc. = **M. stipulosum**

MEDICAGO / *4*

A genus of ca. 50 species, most numerous around the Mediterranean. Several species cultivated in pastures and for fodder in tropical Africa ; a few of them naturalized in certain areas (See Enum. 2 : 104,1992).

BARAKAT, H. M. & al. (2002). DNA fingerprinting markers for Medicago sativa L. and Medicago polymorpha L. using RAPD-PCR. *Egypt. J. Bot.* 42 :21-31

BÉNA, G. & al. (2005). Medicago-Sinorhizobium symbiotic specifecity evolution and the geographic expansion of Medicago. *J. Evol. Biol.* 18 :1547-1558.

STEELE, K. P. & M. F. WOJCIECHOWSKI (2003). Phylogenetic analyses of tribes Trifolieae and Vicieae, based on sequences of the plastid gene matK (Papilionoideae : Leguminosae). *In :* KLITGAARD, B. B. & A. BRUNEAU, Eds., *Advances in Legume Systematics, part 10, Higher Level Systematics :* 355-370. Royal Botanic Gardens, Kew.

Medicago laciniata (L.) Mill., incl. var. *laciniata* and var. *brachyacantha* Boiss.

bas.: *M. polymorpha* L. var. *laciniata* L.

syn.: See note below.

Spreading annual herb, subglabrous or sparsely pilose, with decumbent or ascending stems 15-35 cm long, branching from the base ; corolla yellow, 4-5 mm long ; pod of 3-7 (c. 5) coils, glabrous, with hooked spines.

Grassland, woodland, disturbed ground ; 1150-2200 m alt. (1150-1725 m in Somalia) ; short dry grassland, pastures especially where seasonally waterlogged, rainfall 600-900 mm p.a.; 1500-2550 m (E. Africa). – Sandy regs, wadis, cultivated ground, sandy depression in hammada (Mauritania, Western Sahara).

Canary Isl.; Madeira ; N Africa ; Namibia, Botswana, Lesotho, S Africa ; S Yemen, Socotra, SW Asia to Pakistan-India (Punjab). – Introduced in other areas with "mediterranean" climate. Adventitious in Europe to the Netherlands, Germany, Russia, and in N. and S. America.

Plants from E Morocco-Western Sahara are described as *M. laciniata* var. *saharae* Nègre by R. Nègre (put in synonymy under var. *brachyacantha* by Heyn, Ann. spp. Medic.: 58, 1963) ;

MEDICAGO LACINIATA

Nègre also reports var. *longispina* Benth. (subvar. *horrida* Maire) from the same area (put in synonymy under var. *laciniata* by Heyn, o.c.: 57). – Subsp. *schimperiana* P. Fourn. (syn.: *M. aschersoniana* Urb.) recorded by Cufodontis (Enum.: 245, 1955) from Eritrea has not been confirmed there by Thulin (in Fl. Ethiopia 3 : 245, 1989). – Greuter & al., Med-Checklist 4 : 139, 1989, include these subspecies and varieties without particular taxonomic distinction under *M. laciniata.*

M. lupulina L.

Annual or short-lived perennial herb ; stems prostrate or ascending, 15-60 cm long, ± pubescent ; corolla yellow, 2-3 mm long ; pod with a single coil, unarmed, 1-seeded, c. 3 mm Ø.

Upland grassland, especially on disturbed ground or in cultivations ; 1600-2060 m alt. (Somalia) ; 900-2850 m (Ethiopia, probably introduced).

Europe, N Africa, temperate Asia (from 33°-60° N latitude). – Introduced in other temperate regions as well as in E. Africa.

M. minima (L.) L. (fide Greuter & al., Med-Cheklist 4 : 140, 1989 ; L. in Fl. Angl.: 21, 1754 ; non Bartal.).

bas.: *M. polymorpha* L. var. *minima* L.

Softly hairy annual herb ; stems prostrate to ascending, arising from the base, 20-60(-90) cm long ; corolla yellow, c. 4 mm long ; pod of 3(-5) coils, spiny (or spineless).

Grassland, disturbed ground, pastures, roadsides, usually in sandy places ; 1150-1425 m alt. (Somalia), 1650-3050 m (Ethiopia).

Canary Isl., N Africa ; Socotra ; Europe north to S Sweden ; S Asia.

M. orbicularis (L.) Bartal. – Icon.: L. Boulos, Fl. Egypt 1: 273, 1999.

bas.: *M. polymorpha* L. var. *orbicularis* L.

syn.: *M. applanata* Hornem.; *M. biancae* (Urban) Pinto da Silva ; *M. cuneata* J. Woods ; *M. marginata* Willd.

Annual herb to 40 cm tall, almost glabrous ; stems many from the base, procumbent, 4-angular, grooved ; pod unarmed.

Open grassy areas in evergreen bushland ; grassland, scrub ; disturbed ground ; 1150-1350 m alt. (Somalia), 1650-2750 m (Eritrea, Ethiopia).

Mediterranean Region, Sinai, Arabia, Iran.

Adventice in temperate regions.

M. polyceratia (L.) Trautv. – See **Trigonella polyceratia**

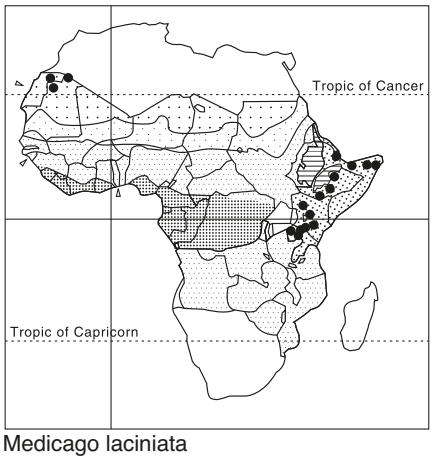
[M. polymorpha L.**]**

syn.: *M. hispida* Gaertn.; *M. denticulata* Willd.; *M. nigra* Krock.

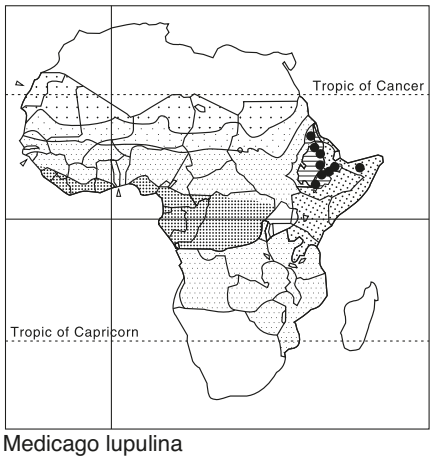
A weakly spreading, ± glabrous annual herb ; pod of c. 3 coils, spiny (or spineless, var. **brevispina)**.

Weed in cultivations and pastures, almost certainly introduced ; reported from Eritrea, Ethiopia, Djibouti, E. Africa, Fl. Zambes. area [var. **polymorpha** and var. **brevispina** (Benth.) Heyn ; (bas.: *M. denticulata* Willd. var. *brevispina* Benth.; syn.: *M. apiculata* Willd.)]. – Also in N Africa, S Africa, S Yemen (Socotra) ; and in Europe ; W and Central Asia to China, Japan ; introduced in other dry warm temperate regions.

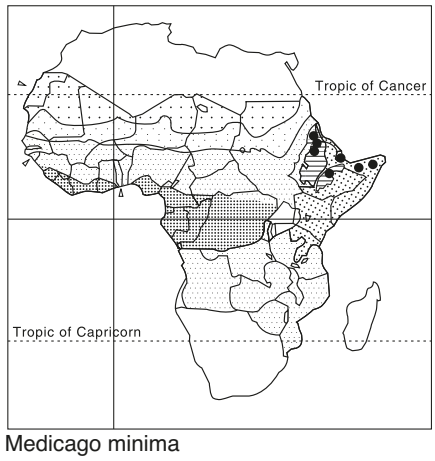
Not mapped.



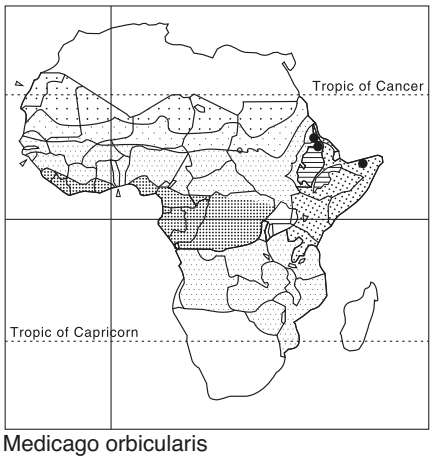
Medicago laciniata



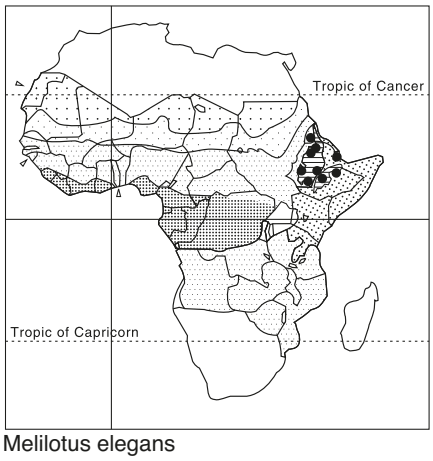
Medicago lupulina



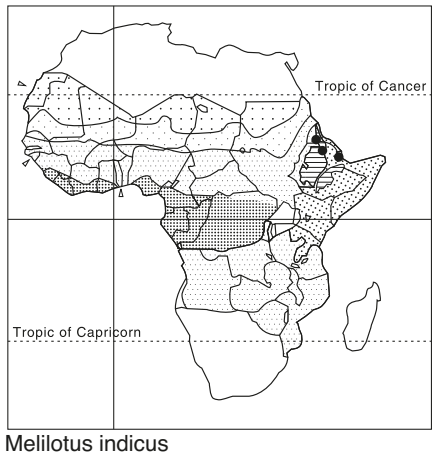
Medicago minima



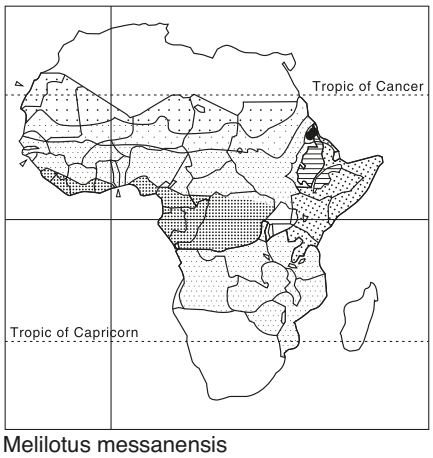
Medicago orbicularis



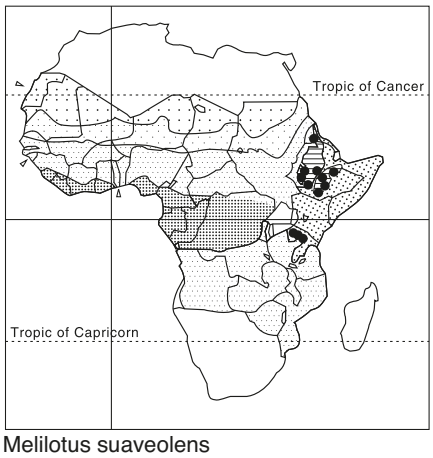
Melilotus elegans



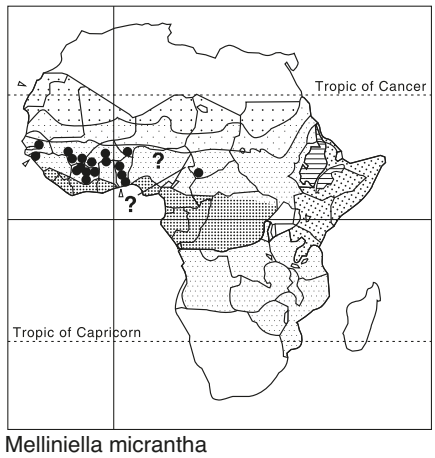
Melilotus indicus



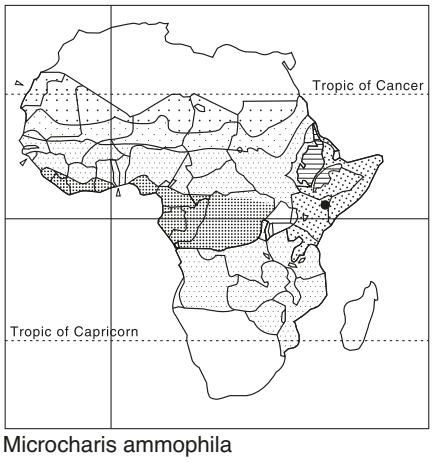
Melilotus messanensis



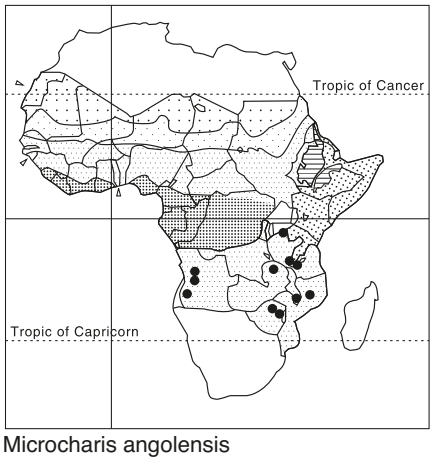
Melilotus suaveolens



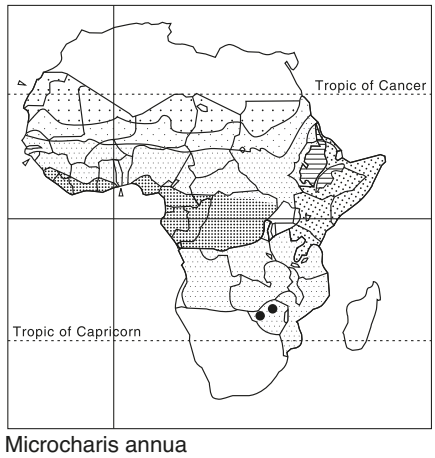
Melliniella micrantha



Microcharis ammophila



Microcharis angolensis



Microcharis annua

MELILOTUS / *4* (?)

A Eurasian genus of about 20 species, also a few in N Africa. It is doubtful whether any of the species are native to Ethiopia (fide Thulin in Fl. Eth. 3 : 245, 1989). A few species cultivated (and naturalized) in tropical Africa (See Enum. 2 : 104, 1992). – Good illustrations in L. Boulos, Fl. Egypt 1 : 279, 1999.

GAZAR, M. (2003). Pollen morphology of the three genera of subfamily Papilionoideae in Egypt (Melilotus, Trifolium and Trigonella). *Acta Bot. Hungar.* 45 : 279-296.

STEELE, K. P. & M. F. WOJCIECHOWSKI (2003). See above under *Medicago.*

[Melilotus albus Medik **]** ("alba").

syn.: *M. argutus* Rchb.

Erect, branched, ± glabrous annual or short-lived perennial herb 0,4-1,2 m tall ; corolla white ; pod weakly reticulately veined.

Cultivated or disturbed ground ; c. 2000 m alt. (Ethiopia : SU, HA).

Europe ; N Africa ; W and C Asia ; introduced in E. Africa, Fl. Zambes. area (along irrigation channels, in sunny places), S. Africa and elsewhere.

Not mapped.

M. elegans Salzm. ex Ser.

syn.: *M. abyssinica* Bak.

Erect annual herb, 0,3-1,2 m tall ; stems branched, quadrangular ; racemes 15-30-flowered ; corolla yellow ; pod with transverse or sigmoid veins.

Cultivated or disturbed ground ; c. 1700-2800 m alt. (Ethiopia).

Mediterranean region, Egypt.

M. indicus (L.) All. *(" indica ").*

bas.: *Trifolium melilotus-indica* L.

syn.: *Melilotus parviflorus* Desf. ("parviflora") ; *M. permixtus* Jord. ; *M. tommasinii* Jord. ; *M. bonplandii* Ten.

Erect slender annual herb, long-hairy when young ; stems branched, quadrangular, 15-50 cm tall ; stipules often with a small tooth near the base ; corolla yellow ; pod with a prominent irregular network of veins.

Disturbed ground, weed in cultivations ; 1600-2500 m alt. (Ethiopia) ; weed of cultivations, rainfall 600-1300 mm p.a. ; ± 2000 m alt. (E. Africa ; introduced).

Mediterranean region, Eurasia. Introduced elsewhere e.g. in Western Sahara, Niger, Sudan, Uganda, Kenya, Fl. Zambes. area, S. Africa, Socotra, and in other warm temperate regions.

M. messanensis (L.) All.

syn.: *M. siculus* (Vitman) B. D. Jackson

Erect or ascending glabrous annual herb 20-60 cm tall ; racemes 3-10-flowered ; corolla yellow ; pod concentric-striate.

Disturbed ground ?; 2200 m alt. (Ethiopia).

Mediterranean region, Egypt, Sinai.

M. suaveolens Ledeb.

syn.: *M. officinalis* sensu auctt., non (L.) Pallas ; *M. altissima* sensu auctt., non Thuill.

Erect annual herb 1-1,6 m tall ; rhachis of larger leaves prolonged ; racemes at least 30-flowered ; corolla yellow ; pod with irregular network of veins ; very fragrant plant.

Grassland, on disturbed ground, also weed in cultivations ; 1500-2400 m alt. (Ethiopia). – Alkaline alluvium near lakes and watercourses, rainfall 700-800 mm p.a. ; 1500-1700 m alt. (first record in Tanzania from 1956 as a single plant, now common in the Serengeti plains and area around).

N Asia, India.

MELLINIELLA / *1*

Melliniella micrantha Harms – Icon. : Bot. Jahrb. Syst. 51 : 360, 1914.

Prostrate or erect annual (sometimes perennial) herb with slender ± glabrous stems 10-25 cm tall forming mats ; leaves simple, rounded, with stipules similar to those of *Alysicarpus ;* flowers small, red in dense glomerules ; can be confused with *Alysicarpus* but pod different (not articulate, dehiscent).

Degraded lateritic and sandy soils ; gravelly soils locally abundant (Burkina Faso) ; hardpan ; savanna along ditches.

MICROCHARIS / *33*

A very natural group (glabrous corolla, keel without spurs, vexillar stamen nearly always without an anther (in *M. spathulata* fertile), and anthers, at least those of the 4 shorter stamens, with hyaline scales at the base).

Five (or six) species (= ± 15 %) are known only from the type gathering (sometimes poor). For two species *(M. cana, M. spathulata)* no *ripe* seeds are recorded (= ± 6 %).

CORTÉS-BURNS, H. & al. (2004). See under **Indigofera,** p. 66.

Microcharis ammophila (Thulin) Schrire

bas.: *Indigofera ammophila* Thulin

Perennial, slightly woody herb to 0,5 m tall, with spreading branches, covered with spreading biramous hairs, which are mostly white but yellowish on the young shoots.

Open flat bushland on deep sandy soil with widely spaced trees of *Delonix, Acacia, Commiphora ;* ± 420 m alt. – The endemic *Endostemon ctenoneurus (Lamiaceae)* has been described from the same locality.

M. angolensis Bak., non *Indigofera angolensis* D. Dietr. *(= I. suffruticosa).*

syn.: *Indigofera richardsiae* J. B. Gillett

Slender annual herb to 45 cm tall, with medifixed hairs on the stems stiffly curved, spreading at the tips.

Open sandy forests ; along river banks ; short grassland on sandy soils ; swamps ; *Ricinodendron*, *Hyphaene* associations ; 800-1400 m alt.

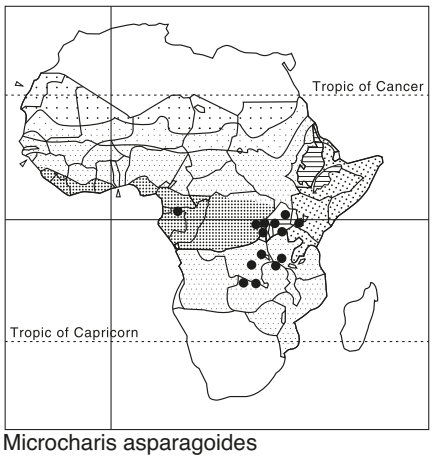
M. annua (Milne-Redh.) Schrire

bas.: *Indigofera annua* Milne-Redh.

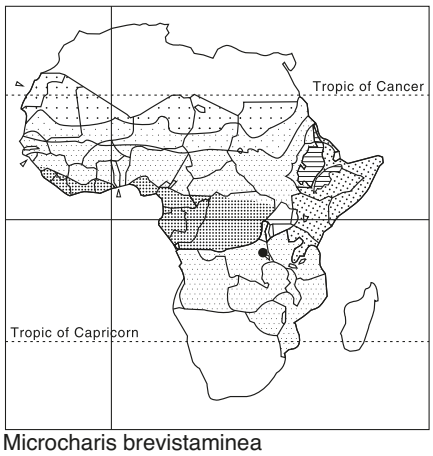
Annual herb to 18 cm tall, very ramose ; branches ascendent or slightly spreading, slender, rounded, glabrous. Only few very delicate flowers known.

Ecology unknown.

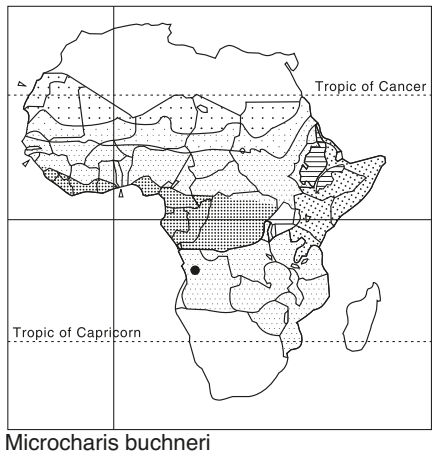
? Only known from the type collected in 1932.



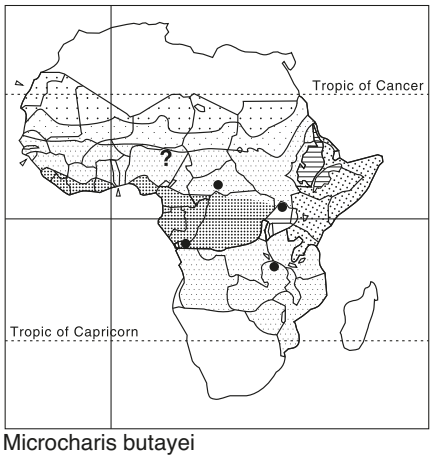
Microcharis asparagoides



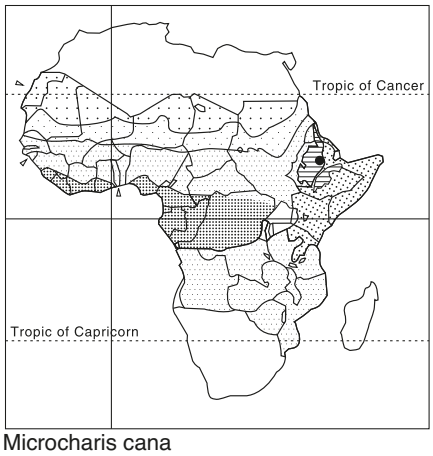
Microcharis brevistaminea



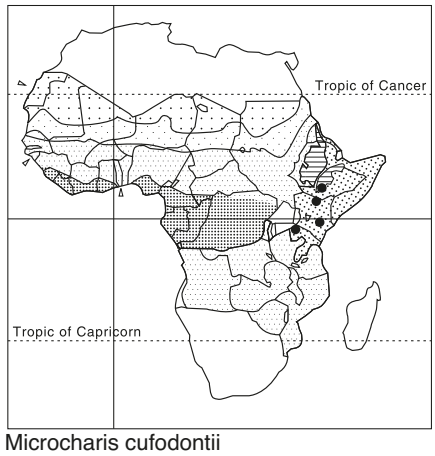
Microcharis buchneri



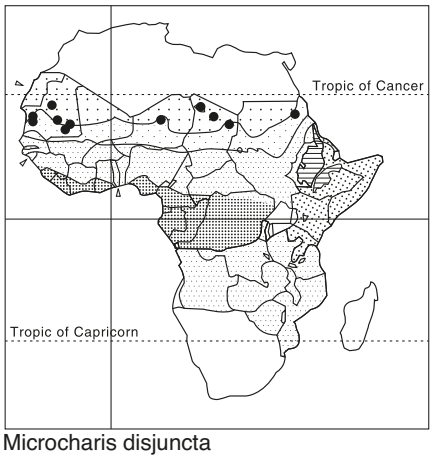
Microcharis butayei



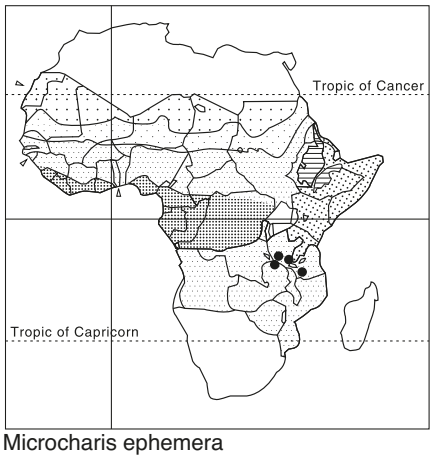
Microcharis cana



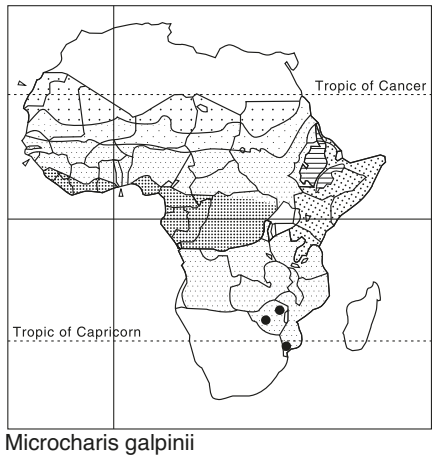
Microcharis cufodontii



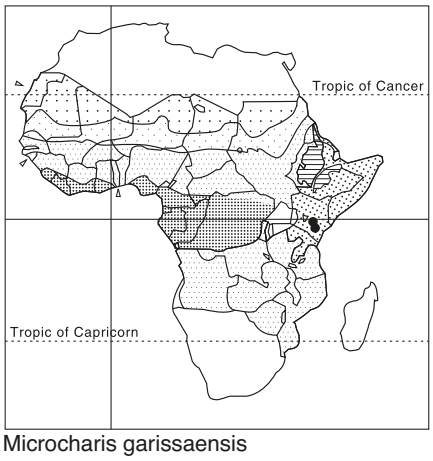
Microcharis disjuncta



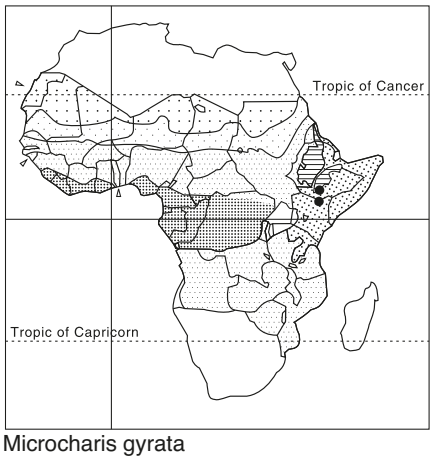
Microcharis ephemera



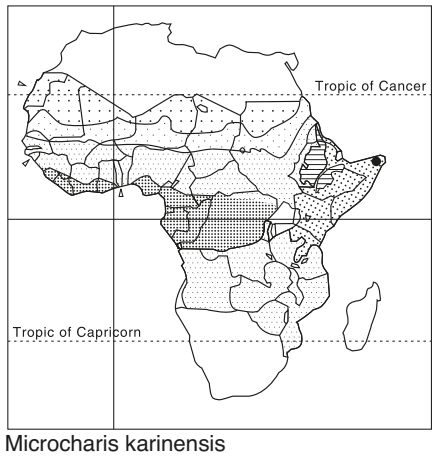
Microcharis galpinii



Microcharis garissaensis



Microcharis gyrata



Microcharis karinensis

MICROCHARIS

M. asparagoides (Taub.) Schrire

bas.: *Indigofera asparagoides* Taub., excl. var. *tisserantii* Pellegr. (= **M. tisserantii)** and subsp. *ephemera* J. B. Gillett (= **M. ephemera)**.

Perennial plant with a woody rootstock and numerous slender, prostrate or ascending stems 5-60 cm long, glabrous to very sparingly strigulose, simple or ramose.

Short grassland ; rocks ; lake shores ; savannas ; fallow land ; 1150-2000 m alt.

M. brevistaminea (J. B. Gillett) Schrire

bas.: *Indigofera brevistaminea* J. B. Gillett

? Annual herb with ribbed, nearly glabrous branches.

Under trees (? along river).

Only known from the type collected in 1908.

M. buchneri (Taub.) Schrire

bas.: *Indigofera buchneri* Taub.

Ramose, slender herb 1 m tall ; branches 4-angled, slightly appressed pilose.

Edge of sugar cane field.

Only known from the type collected ante 1896.

Near *M. angolensis.*

M. butayei (De Wild.) Schrire

bas.: *Indigofera butayei* De Wild.

syn.: *I. medicaginea* sensu Cronquist, Fl. Congo Belge 5 : 171, 1954, p.p., non Welw. ex Bak.

Annual or biennial procumbent herb ; stems to 30 cm long, sparsely appressed strigose.

Short grass beside paths ; river-banks ; savannas ; 900-1200 m alt.

Not in Angola (= *M. medicaginea)*.

M. cana (Thulin) Schrire

bas.: *Indigofera cana* Thulin

Perennial much-branched herb with prostrate to ascending, rather woody, ± zigzag stems to at least 20 cm long, densely covered with ± appressed to somewhat spreading biramous hairs and appearing greyish white or, on the youngest shoots, yellowish ; mature seeds unknown.

Acacia scrub on stony or rocky ground ; 1200-1800 m alt.

Only two collections known (1962, 1965).

M. cufodontii (Chiov.) Schrire

bas.: *Indigofera cufodontii* Chiov.

Perennial herb ± 20-50 cm tall ; stems ramose, crisped strigose, erect or ascending, slender, herbaceous at first, becoming woody with age, 2 mm Ø at the base.

Stony places in wooded grassland ; 1250-2000 m alt.

M. disjuncta (J. B. Gillett) Schrire ; J.-P. Lebrun, Eléments pour un atlas pl. vascul. Afr. sèche 1: 239-241, 1977 (with complete synonymy). – Cortés-Burns & al. (2004) : 697-698.

bas.: *Indigofera disjuncta* J. B. Gillett var. *disjuncta*

syn.: *I. acutifolia* Schinz 1888, non Schlechtd. 1838 ; *I. arenaria* sensu Bak., Fl. Trop. Afr. 2 : 79, 1871, non A. Rich. nec E. Mey.; *I. semhaensis* Vierh. p.p. quoad typum ; *I. welwitschii* Bak. var. *simplicifolia* Bak. f.

MICROCHARIS DISJUNCTA

Herbaceous, erect, dwarf, densely branched annual herb 5- ± 15 cm tall, with erecto-patent silky branches ; leaves simple (in var. **fallax** the upper ones often 3-foliolate ; the leaf shape varies greatly).

Dunes ; sands and screes ; light or rocky soils ; sometimes very common but ephemeral ; < 1800 m alt.

Disjunct area : Mauritania to Sudan, Libya, Saudi-Arabia ; Namibia, S. Africa. – Var. **fallax** (J. B. Gillett) Schrire in Socotran Archipelago and Oman.

Not in Ethiopia.

M. ephemera (J. B. Gillett) Schrire

bas.: *Indigofera asparagoides* Taub. subsp. *ephemera* J. B. Gillett

Erect annual, glabrous herb ; sometimes stems reddish below, green above, rather zigzag.

Hillsides ; gravelly soil between rock outcrops in open places ; poor gravelly soil on steep slope in *Brachystegia-Uapaca* woodland ; bank on stony loam ; open sunny spots on sandy soil ; sandy yellow soil ; sand among rocks ; sometimes common or fairly common ; 1150-1700 m alt.

M. galpinii N. E. Br. (1897), non *Indigofera galpinii* N. E. Br. (1925).

syn.: *M. pseudo-indigofera* Merxm.; *Indigofera pseudo-indigofera* (Merxm.) J. B. Gillett ; *I. graminea* Schltr., nom. nud.

Filiform or slender, annual, suberect herb ± 10-20 cm tall, with habitus of *M. praetermissa ;* stem ramose at the base, 4-angular becoming sulcate in the upper part, ± glabrous.

Sod on base of a kopje.

S. Africa [the first species of *Microcharis* that has been found (1891) south of the Tropic of Capricorn].

M. garissaensis (J. B. Gillett) Schrire

bas.: *Indigofera garissaensis* J. B. Gillett

Annual herb to 30 cm tall, with several stems white-strigose, the indumentum somewhat spreading and moderately dense.

Bare spots in *Acacia-Commiphora* open bushland on sandy alluvium or alkaline red sandy loam ; 110-700 m alt. Sometimes locally abundant.

An aberrant specimen (Gillett 16529) with a corolla colour very unusual for " *Indigofera* ", exactly matches that of *Tephrosia subtriflora* (? transmission of a cytoplasmic gene by an insect vector).

M. gyrata (Thulin) Schrire

bas.: *Indigofera gyrata* Thulin

Perennial herb 10-30 cm tall with spreading, sometimes almost prostrate branches, covered with stiff spreading biramous hairs, which are mostly white but yellowish on the young shoots.

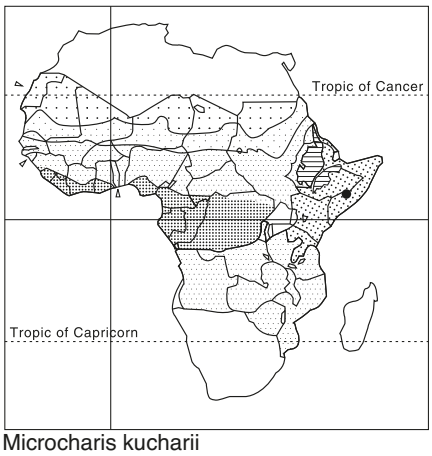
Locally common in *Acacia-Commiphora* deciduous bushland on red sandy soil or on limestone ; 290-780 m alt.

M. karinensis (Thulin) Schrire

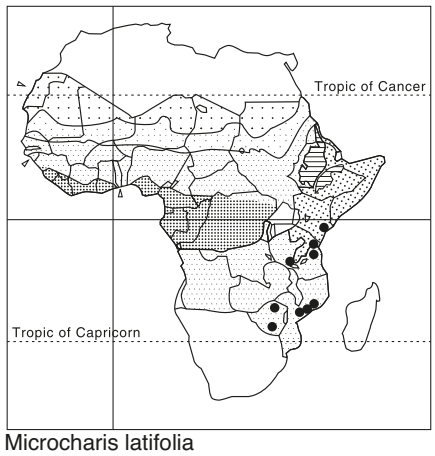
bas.: *Indigofera karinensis* Thulin

Intricately branched subshrublet forming cushions to 30 cm tall ; stems silvery, covered by biramous hairs with spreading tips.

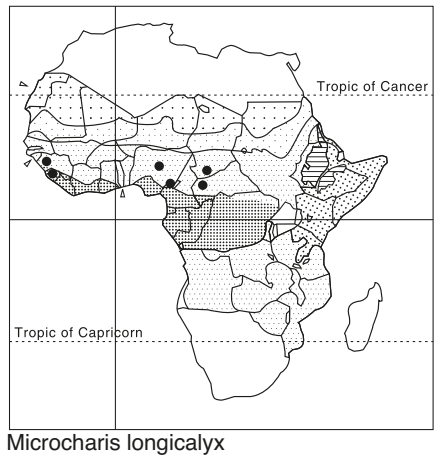
In large quantity mixed with *Indigofera eremophila* in the gravel of a wadi bottom ; ± 450 m alt.



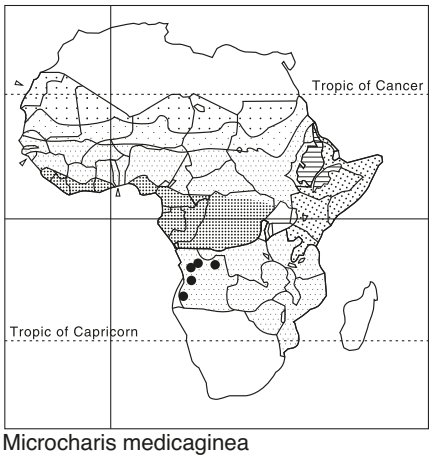
Microcharis kucharii



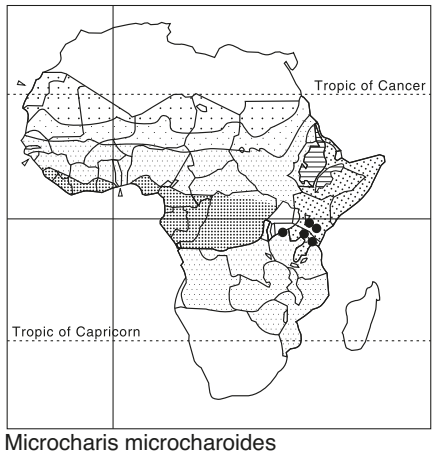
Microcharis latifolia



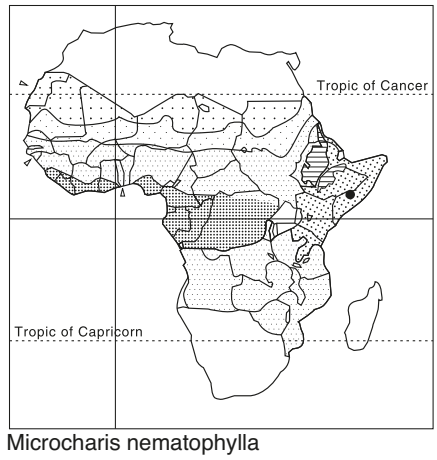
Microcharis longicalyx



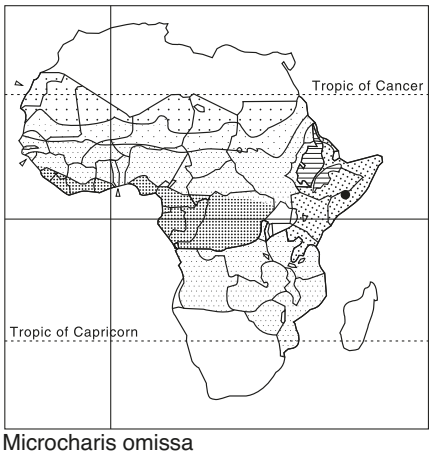
Microcharis medicaginea



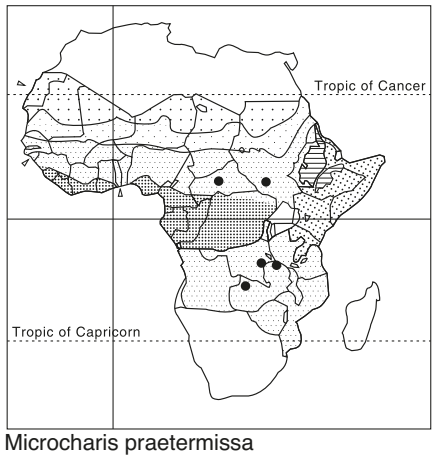
Microcharis microcharoides



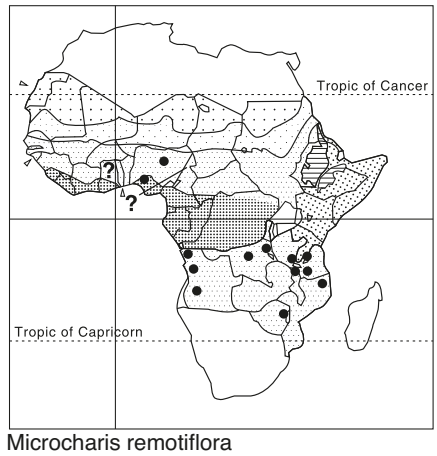
Microcharis nematophylla



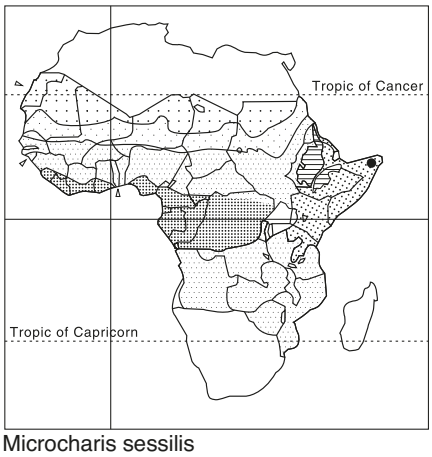
Microcharis omissa



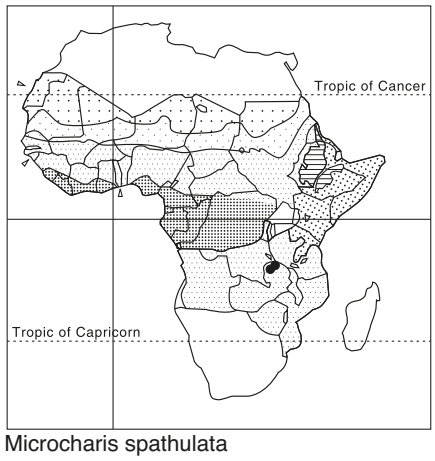
Microcharis praetermissa



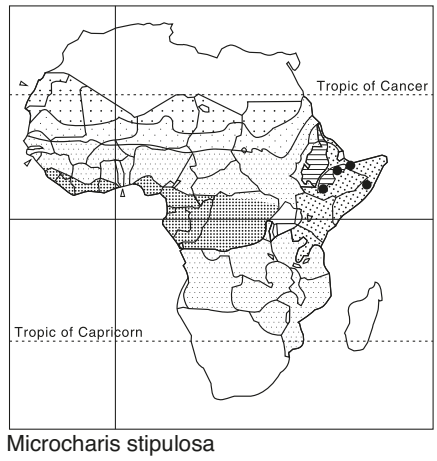
Microcharis remotiflora



Microcharis sessilis



Microcharis spathulata



Microcharis stipulosa

The flower colour is very unusual in the genus (cream, with purplish venation on standard). Closely related to **Microcharis contorta** (J. B. Gillett) Schrire (bas.: *Indigofera contorta* J. B. Gillett) from S Yemen (only known from the type collected before 1958); but the colour of flowers is unknown.

Only known from the type collected in 1986.

M. kucharii (Thulin) Schrire

bas.: *Indigofera kucharii* Thulin

Intricately branched shrublet forming cushions to 20 cm tall; stems silvery, covered by biramous hairs with spreading tips.

Stony soil on limestone hills with open *Acacia-Commiphora-Grewia* bushland; 180-220 m alt.

M. latifolia Benth., non *Indigofera latifolia* Micheli

syn.: *I. lobata* J. B. Gillett

Annual spreading herb; branches sparingly hispid, to 30 cm long.

Seasonally damp grassy places; 0-500 m alt.

M. longicalyx (J. B. Gillett) Schrire

bas.: *Indigofera longicalyx* J. B. Gillett

syn.: *I. lateritia* A. Chev. nom., non Willd. (1802) nec Bertol. (1832).

Annual herb with prostrate or erect branches to 20 cm long, ± hispid with rigid biramous hairs, ± spreading.

Plateau formation with *Isoberlinia* on sand; 360-1350 m alt.

M. medicaginea (Welw. ex Bak.) Schrire

bas.: *Indigofera medicaginea* Welw. ex Bak.

Slender prostrate annual or biennial or perennial herb, with the habit of a *Medicago;* stems 30 cm or more long, several times forked, with a few appressed grey bristles upwards.

Sparingly, in moist poorer meadow with short herbage by banks of stream.

Confused with *M. butayei.*

M. microcharoides (Taub.) Schrire

bas.: *Indigofera microcharoides* Taub.

syn.: *Rhynchotropis curtisiae* Johnst. (of var. **microcharoides)**.

Perennial or sometimes annual herb, ± woody at the base, to 50 cm tall; stems crisped strigose, often densely so.

Grassland; open *Acacia-Commiphora* bushland; dry open places in *Juniperus* dry evergreen forest; 100-2100 m alt.

Comprises 2 vars.: – var. **microcharoides;** – var. **latestipulata** (J. B. Gillett) Schrire; [bas.: *Indigofera microcharoides* var. *latestipulata* J. B. Gillett].

M. nematophylla Thulin

Erect dwarf shrub, ± 1 m tall; young stems covered by completely appressed silvery hairs, sulcate; older stems with longitudinally cracking epidermis and a pale brown inner layer; fruit unknown.

Undulating plain of orange sand in *Acacia-Commiphora* bushland with *Gyrocarpus angustifolius, Loewia glandulosa, Caesalpinia eriantha, Cordia monoica, Jatropha pelargoniifolia, Triumfetta.*

Only known from the type collected in 1987 and cut off from a single shrub searched for in vain in 1989.

Indigofera scopiformis was collected in 1989 from the same locality.

M. omissa Thulin, non *Indigofera omissa* J. B. Gillett – Icon.: Thulin, Fl. Somal. 4: 281, 1995.

Compact much-branched dwarf shrub, ± 40 cm tall; old stems purplish-brown, glabrescent; young stems silvery, covered by biramous hairs with spreading tips.

Very locally abundant on sandstone escarpment; the vegetation is scrubby, mainly with low bushes of *Commiphora* spp., *Euphorbia cuneata;* in practically the same locality as the endemic *Indigofera hiranensis.*

Only known from the poor type collected in 1985 and saved from the now destroyed National Herbarium of Mogadishu.

M. praetermissa (Bak. f.) Schrire

bas.: *Indigofera praetermissa* Bak. f.

syn.: *I. welwitschii* Bak. var. *remotiflora* sensu Cronquist, Fl. Congo Belge 5: 171, 1954, p.p., non Bak.

Delicate annual herb with sparse, somewhat spreading hairs; leaflets lanceolate, upper leaves digitately 3-foliolate (not pinnately 3-5-foliate as in *M.welwitschii)*.

Under trees.

M. remotiflora (Taub. ex Bak. f.) Schrire, *excl. Indigofera remotiflora* Taub. ex Bak. f. var. *angolensis* Bak. f. (= ?).

bas.: *Indigofera remotiflora* Taub. ex Bak. f.

syn.: *I. welwitschii* Bak. var. *remotiflora* (Taub. ex Bak. f.) Cronq. s. str.

Very near *M. welwitschii* but leaflets oblong-lanceolate, to 7 mm wide, narrowed abruptly at each end (not linear-lanceolate, not above 3 mm wide, tapering very gradually at each end). Difficult to separate the two species when both occur together.

River banks, etc. (cf. under **M. welwitschii)**.

M. sessilis (Thulin) Schrire

bas.: *Indigofera sessilis* Thulin

Spreading shrublet to 30 cm tall, often forming dense cushions; stems silvery, covered by slightly crisped biramous hairs.

Often characteristic constituent of the low scrub vegetation with *Acacia, Commiphora, Caesalpinia, Adenia,* etc. of the limestone plateaux; fairly widely distributed in the subcostal parts of NE Somalia.

M. spathulata (J. B. Gillett) Schrire

bas.: *Indigofera spathulata* J. B. Gillett

? Annual herb perhaps subwoody at the base, sometimes perennial; branches spreading, green, glabrous, subribbed, to 7 cm long; ripe fruit unknown.

Short grass; fairly common; gritty sandy soil among flat ironstone rocks; yellow sandy soil along track; semi-swamp; 1170-1500 m alt.

The only *Microcharis* with *fertile* vexillar stamen.

M. stipulosa (Chiov.) Schrire

bas.: *Indigofera stipulosa* Chiov.

Decumbent to erect perennial herb, woody below; stems ± covered by the persistant stipules, linear-lanceolate, 6-11 mm long.

Bush-woodland; rocky hillsides; on limestone; edge of escarpment with *Buxus* dominant and occasional *Juniperus;* 1350-1850 m alt.

MICROCHARIS

M. tenella Benth., non *Indigofera tenella* Vahl ex DC. – Icon.: Trans. Linn. Soc. London 25 : pl. 33, 1865.

syn.: *Indigofera hutchinsoniana* J. B. Gillett

Slender, annual herb to 30 cm tall, loosely ramose with spreading hairs.

Rocks after rain ; rocks in stream.

M. tenuirostris (Thulin) Schrire

bas.: *Indigofera tenuirostris* Thulin

Annual herb to 20 cm tall ; branches spreading, sparsely hirsute with spreading biramous hairs.

Gypsum plain with a sparse vegetation, the plant growing along a drainage line in a small depression ; sandy or silty ground in bushland ; in short grass in crevices of granitic rocks ; 220-± 410 m alt.

M. tisserantii (Pellegr.) Schrire

bas.: *Indigofera asparagoides* Taub. var. *tisserantii* Pellegr.

syn.: *I. tisserantii* (Pellegr.) Pellegr.

Perennial herb with numerous slender, simple or ramose stems 40-60 cm tall, grappling on to grasses.

Rock.

M. tritoides (Bak.) Schrire

bas.: *Indigofera tritoides* Bak.

Perennial herb to 50 cm tall, erect or decumbent, densely appressed silvery pubescent.

Semi-desert grassland ; deciduous bushland, often in rocky places ; also coastal dunes ; 0-1530 m alt.

Very variable.

Arabia.

Comprises 2 subspp.: – subsp. **tritoides** [syn.: *Indigofera leptocarpa* Hochst. & Steud. ex Balf. f. p.p., non Eckl. & Zeyh.; *I. tenuisiliqua* Schweinf.]; – subsp. **obbiadensis** (Chiov.) Schrire [bas.: *I. sesquijuga* Chiov. var. *obbiadensis* Chiov.; *I. tritoides* Bak. var. *obbiadensis* (Chiov.) J. B. Gillett].

M. wajirensis (J. B. Gillett) Schrire

bas.: *Indigofera wajirensis* J. B. Gillett

Perennial herb with spreading stems to 40 cm long, rather densely covered with stiff spreading biramous hairs.

Open *Acacia-Commiphora* bushland on sand ; ± 70-240 m alt.

M. welwitschii (Bak.) Schrire, *excl. Indigofera welwitschii* Bak. var. *remotiflora* (Taub. ex Bak. f.) Cronquist (bas.: *I. remotiflora* Taub. ex Bak. f. = **M. remotiflora).**

bas.: *Indigofera welwitschii* Bak.

syn.: *I. variabilis* De Wild. 1904, non N. E. Br. 1903 (= *I. bainesii)*, nom. illegit.

Ramose, delicate annual herb 10-40 cm tall, erect, ascending or prostrate, with a sparse indumentum of stiff spreading biramous hairs.

Rocky hills and outcrops ; crevices and shallow soil on granitic rocks ; shortly-grassy meadows ; moist meadows at banks of river ; marshy pastures ; stony dry ranges ; 1200-1300 m alt.

SYNONYM :

Microcharis pseudo-indigofera Merxm. = **M. galpinii**

MILLETTIA / *96*

Genus with several insufficiently known species (cf. also Enum. 2 : 105, 1992, at the end of the species list). The flowers is unknown on 1 species, the fruit in 21 (+2?) species, and the mature fruit in further 7 species (= 22 % + 7 % = 29 %) ; mature seeds are unknown in 1 species. No ecology is recorded for 10 species (= c. 10 %), and 13 (+1?) species are known only from the type, another one only from the syntypes and one species is known only from 2 collections which are perhaps not conspecific (= c. 14 %).

ADOMOU, A. C. & L. J. G. VAN DER MAESEN (2002). Milletia sect. Efulgentes and sect. Opacae (Leguminosae, Papilionoideae), an overview. *Syst. Geogr. Pl.* 71 : 445-447.

Millettia aboensis (Hook. f.) Bak.

bas.: *M. macrophylla* Benth. var. *aboensis* Hook. f.

Tree 9-12 m, with conspicuously rusty-hairy pubescence on the petioles, branchlets, inflorescence and fruits ; flowers very handsome, purple, in erect woody racemes to 45 cm long.

Forest.

M. achtenii De Wild.

Half-erect shrub ; flowering branches 3-4 mm Ø, with many lenticels ; fruit unknown ?

Riparian sites.

Not collected in Zaire since 1915 ; known from Congo-Brazzaville.

M. acuticarinata Bak. f.

Shrub 4 m tall ; flowers grow from short dense racemes ± 3-9 mm long on a long rachis 20-28 cm long ; standard and wings red with purple lines, keel rose with white lines.

Humid forest.

M. angustidentata De Wild.

Liane or subshrub 60 cm tall ; young stems pubescent 2-3 mm Ø ; mature pod unknown.

Gallery forest ; *Manihot* cultivations ; thickets by lakeside ; 780-960 m alt.

M. angustistipellata De Wild.

Liane with brownish pubescent stems becoming glabrous, 2-3 mm Ø ; pod unknown.

Forest.

Only known from the type collected in 1921.

M. aromatica Dunn

Graceful tree 4-9 m, much branched above, erect, with a lax crown ; wood sulphur-yellow, aromatic ; trunk 15-22,5 cm Ø (or ? 30-60) at the base ; branches rugose, soon glabrous ; mature pod unknown.

Bushy slopes ; not common ; bushy wooded places, rather rare.

M. barteri (Benth.) Dunn

bas.: *Lonchocarpus barteri* Benth.

syn.: *L. heudelotianus* Baill. ; *Millettia calabarica* Dunn ; *M. demeusei* De Wild. ; *M. gentilii* De Wild. ; *M. urophylla* Welw. ex Bak. ; *Phaseolodes urophyllum* (Welw. ex Bak.) O. Kuntze

MILLETTIA BARTERI

Shrub 1,5-1,8 m tall or lofty woody climber 9-30 m with pith in the stems ; trunk 5-10 cm Ø ; stems 1,5 cm Ø, with a corky longitudinal crest ; branches 3-8 mm Ø, dark purple, pubescent, becoming glabrous.

Flooded or swampy forests ; forest gallery ; river sides ; forest liable to flooding ; thickets ; primitive forests ; sometimes common or frequent ; 1-200 (? and more) m alt.

São Tomé.

Not in Senegal.

M. bequaertii De Wild.

Tree to 8 m or shrub ; branches 5 mm Ø, brownish, tomentose ; mature seeds unknown.

Gallery forest ; fields ; to 1300 m alt.

Perhaps only a form of the variable **M. oblata.**

M. bibracteolata Pellegr.

Liane ; branchlets villous, soon glabrous, lenticellate ; fruit unknown.

Ecology unknown (? forest).

Only known from the syntypes collected in Dec. 1929 – Feb. 1930.

M. bicolor Dunn

Liane ; branchlets finely villous reddish-brown with rather rare long hairs ; pod unknown.

Ecology unknown.

Only known from the type ?

M. bipindensis Harms ; Kew Bull. 15 : 22, 1961.

Liane ; stems to 14 cm Ø, with reddish to black branches, 4 mm Ø, ± densely reddish-brown pubescent, becoming glabrous.

Rain-forest ; often riparian.

M. bussei Harms

Shrub or tree 3-25 m tall ; all young parts other than the corolla densely yellow-brown pubescent, upper surface of leaves first velvety-silky, later glabrescent.

Riverine forest ; deciduous woodland ; wooded grassland ; *Brachystegia* and *Terminalia-Acacia-Sclerocarya* woodland on sandy soils ; forest of dense shrubs and tall *Sterculia appendiculata, Milicia excelsa* with *Oxytenanthera ;* sisal plantations ; 10-500 m alt.

M. chrysophylla Dunn

syn.: *M. melanocalyx* Dunn ; *M. macrostachya* (Hook. f.) Dunn 1911, non Collett & Hemsl. 1890 ; *Lonchocarpus macrostachyus* Hook. f.

Straggling shrub or tree 15 m tall with a bushy crown ; leaflets 8-15 × 3-5 cm with silky white hairs on the under-surface ; bark lenticellate.

Beside streams and rivers, rain-forest.

M. comosa (Micheli) Hauman

syn.: *M. brunneosericea* De Wild.

Liane or straggling shrub with cylindrical, ± flexible branches, 2-3 mm Ø, often nearly black with long, reddish-brown, ± scattered and deciduous hairs ; older stems becoming 3-angled or 3-winged, 8 mm Ø.

Forest ; savanna with *Hymenocardia* (very invasive) ; forest edges ; plantations ; secondary forest.

Comprises 2 vars.

MILLETTIA

M. conraui Harms, incl. var. *ledermannii* Dunn

Tree to 8 m ; bark brown, lenticellate ; flowers bluish, showy, in short dense racemes.

Forest edges ; 1350-2200 m alt.

M. coruscans Dunn

Tree 8 m ; branches, densely velvety, becoming glabrous ; leaves coriaceous.

Ecology unknown.

M. dinklagei Harms

syn.: *M. kennedyi* Hoyle

Shrub or tree, to 4,5-5 m tall ; branches cylindrical, subglabrous, becoming densely lenticellate ; or liane to 15 m ; young branches silky-bronze.

Bush on sandy littoral ; riparian ; 1-1100 m alt.

M. discolor De Wild.

Shrub or liane ; flowering branches 3-4 mm Ø, covered with light-brown appressed hairs and punctiform lenticels ; pod unknown.

Ecology unknown.

Only known from the type collected in 1910 (? = **M. dinklagei).**

M. drastica Welw. ex Bak.

syn.: *M. seretii* De Wild. ; *M. rubra* De Wild. ; *M. drasticoides* De Wild. ; *M. giorgii* De Wild.

Tree 10-20(-30) m, with trunk 25-60 cm Ø ; or shrub 2 m tall, sometimes sarmentous ; flowering branchlets ± 4 mm Ø, reddish-brown with many punctiform lenticels.

Rain-forest ; degraded forest ; wooded savanna ; edge of mangrove (mangle) ; sunny open places ; sometimes uncommon ; forest gallery in savanna ; 1-1850 m alt.

M. dubia De Wild.

syn.: *M. solheidii* De Wild. ; *M. claessensii* De Wild.

Liane with stem to 30 cm Ø, 45 m tall, or ? tree with straggling branches ; flowering branchlets twining, golden reddish-brown hairy becoming glabrous.

Rain-forest, ± flooded ; riparian.

M. duchesnei De Wild.

Liane with ribbonlike stem to 20 cm wide, 3 cm thick, reaching the canopy ; sometimes a shrub to 2 m tall ; flowering branches 4-6 mm Ø, pubescent, becoming glabrous, with very small elongated lenticels.

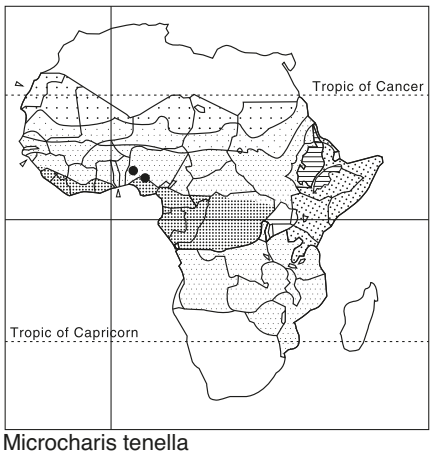
Rain-forest ; river banks ; sometimes very common.

M. dura Dunn

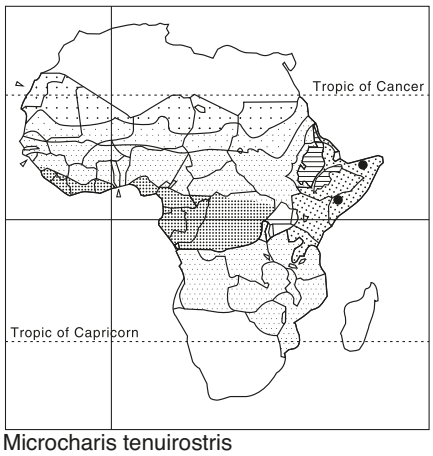
syn.: *M. cyanantha* Dunn

Slender or climbing shrub 2-5 m tall, or tree to 13-20 m ; stem 35 cm and more in girth, 30-50 cm Ø ; young stems ± 4 mm Ø, brownish pubescent with numerous round lenticels.

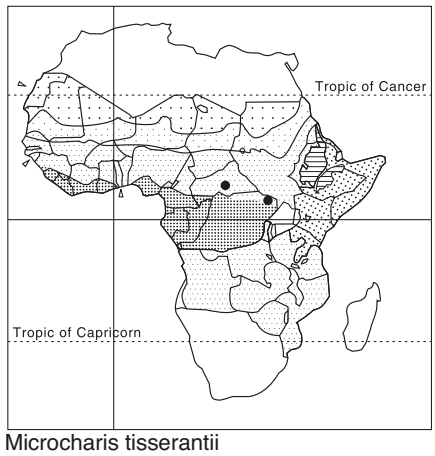
Evergreen forest margins and remnants ; wooded savanna ; clearings ; 1200-2000 m alt.



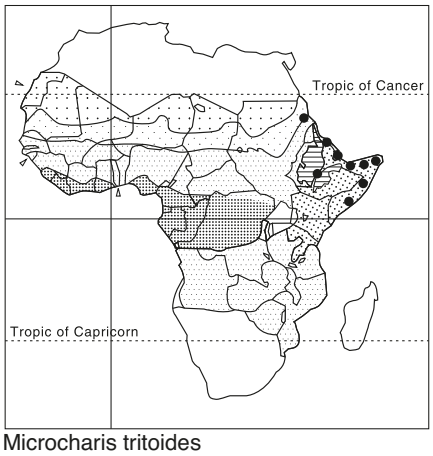
Microcharis tenella



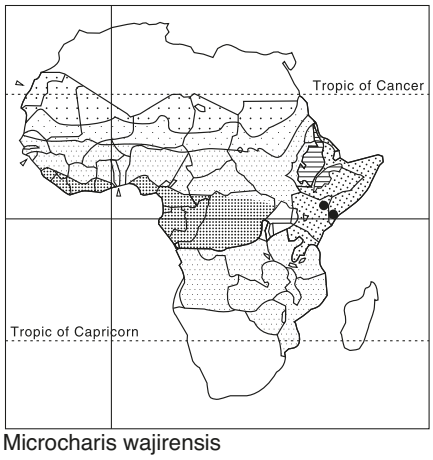
Microcharis tenuirostris



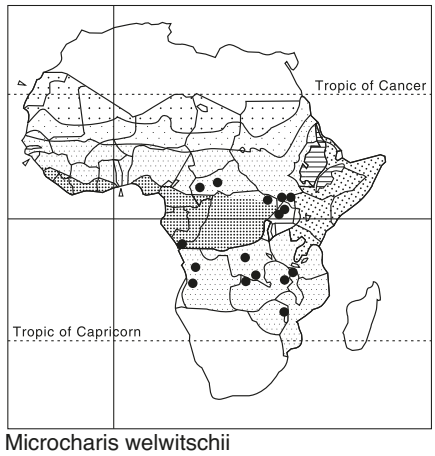
Microcharis tisserantii



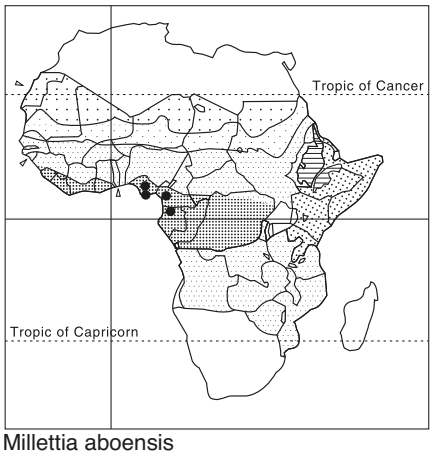
Microcharis tritoides



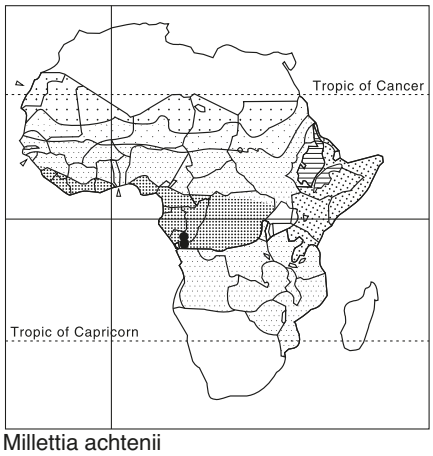
Microcharis wajirensis



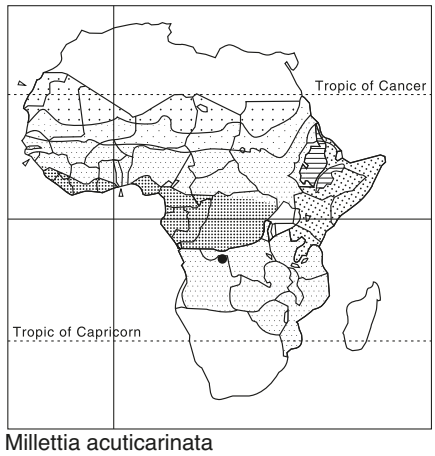
Microcharis welwitschii



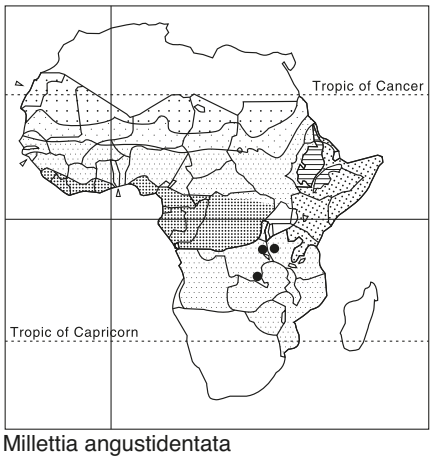
Millettia aboensis



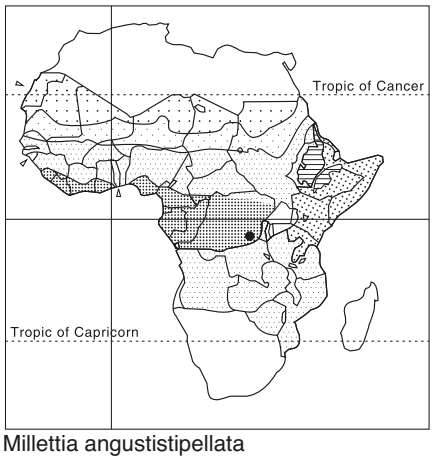
Millettia achtenii



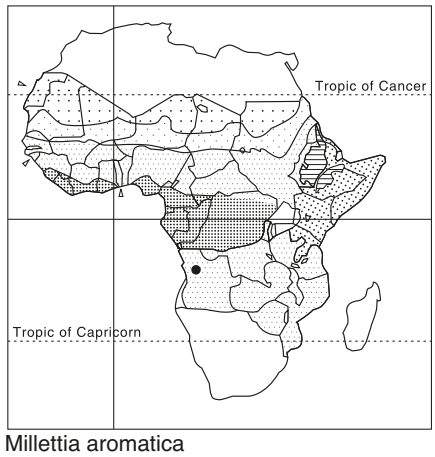
Millettia acuticarinata



Millettia angustidentata



Millettia angustistipellata



Millettia aromatica

M. eetveldeana (Micheli) Hauman

syn.: *M. leptocarpa* Dunn

Shrub or tree 2-17-25 m tall ; bole 10 m high, 30-60 cm Ø ; habit like *M. drastica* (except the inflorescence) ; young twigs dark, sparsely rusty pubescent ; old twigs grey, with elliptic lenticels ; flowers showy, purple or blue, in long racemes.

Evergreen forest, especially at the margins ; gallery forest ; rain-forest ; dry forest ; wooded savanna ; fallow land ; grassland with trees (*Parinari)* ; termite mounds, "chipya" woodland on rocky ground ; 100-1000 m alt.

Comprises 2 vars.: – var. **eetveldeana ;** – var. **brevistipellata** (De Wild.) Hauman (bas.: *M. brevistipellata* De Wild.) with larger flowers (corolla >2 cm long).

M. elongatistyla J. B. Gillett

Tree to 15 m ; twigs slender, with numerous elliptical white lenticels.

Riverine forst ; 250-350 m alt.

M. elskensii De Wild., incl. var. *quadrijuga* De Wild.

Ribbonlike liane resembling *M. duchesnei ;* stem 15 cm wide.

Rain-forest on firm ground or flooded ; swampy forest.

Comprises 3 vars.

M. eriocarpa Dunn

Tree 8 m ; branches dark pubescent when young ; flowers unknown.

Relic of forest in cultivated land ; 600-800 m alt.

M. exauriculata Hauman

Ribbonlike liane with stem to 15 cm wide ; flowering branches 3-4 mm Ø, dark purple, pubescent, becoming glabrous.

Swampy- or flooded forests ; forest edges.

M. ferruginea (Hochst.) Bak.

bas.: *Berrebera ferruginea* Hochst.

Tree with a narrow crown.

Upland forest ; rain-forest ; ground water forest ; woodland ; 1000-2500 m alt.

Comprises 2 subspp. (intermediates known) : – subsp. **ferruginea ;** – subsp. **darassana** (Cufod.) J. B. Gillett

Important shade tree for coffee (domestication of an endemic Ethiopian species).

M. goossensii (Hauman) Polhill

Shrub 3-4 m tall ; young branchlets 2 mm Ø ; flowering branchlets 3-4 mm Ø ; pod unknown.

Single specimens in bush.

Only known from the type.

M. gossweileri Bak. f.

Liane sometimes reaching the canopy, 12-20 m long, with ochre lenticels on the bark ; flowering branchlets 2,5-4 mm Ø, with brown pubescence, ± dense, ± deciduous.

Disturbed forest ; thickets on formerly cultivated ground ; shady woods ; swampy forest with *Uapaca, Pycnanthus, Raphia.*

Comprises 2 vars.

M. gracilis Welw. ex Bak.

syn.: *Phaseolodes gracilis* (Welw. ex Bak.) O. Kuntze

Tree 2,4-3 m tall, usually an erect, elegant shrub 0,9-1,8 m, with a more slender habit than usual in the genus ; crown hemispherical ; leaves deciduous at the time of flowering.

Thickets at the skirts of forests ; secondary thickets ; sometimes sporadic ; to 900 m alt.

M. grandis (E. Mey.) Skeels

bas.: *Virgilia grandis* E. Mey.

syn.: *Millettia caffra* Meisn. ; *Fornasinia ebenifera* Bertol.

Tree or shrub 2-13 m tall, but also a stunted, gnarled tree ; bark grey or brown, smooth to ± flaky ; wood very hard (good timber).

Coastal forest ; open dry forest secondary forest on orange sand with cultivations ; 0-150 m alt.

S. Africa.

Also cultivated.

M. griffoniana Baill. – Icon.: Hook. Ic. Pl. 31: tab. 3040, 1915 ; Aubréville, Fl. Forest. Côte d'Iv., Ed. 2 : 353, 1959 ; White & Abernethy, Guide végétation Lopé : 71, 1996.

syn.: *Ostryocarpus parvifolius* Micheli ; *Derris leptorhachis* Harms

Tree 6-10 m, sometimes 10-20 m, with a dense crown ; or shrubby with arching branches drooping at the ends ; branchlets glabrous ; racemes pendulous, lilac, forming a curtain ; flowers purplish appearing with the new leaf flush.

Forest, particularly on river banks and watersides ; swamp ; flooded river banks ; mangrove sides ; sometimes extremely abundant ; 1-200 m alt.

Bioko / Fernando Poo. Not in Angola.

Easily confused with *M. thonningii* from which it differs in having indehiscent fruits (8-10x3 cm not 12x2 cm) and lacking the brush of hairs on the lower part of the midrib beneath the leaflets.

M. harmsiana De Wild., incl. fa. *acuminata* De Wild.

Liane to 40 m tall ; stem 22 cm Ø ; branches 3 mm Ø, dark purple, nearly glabrous ; fruit unknown.

Rain- or secondary forest.

Closely related to *M. sapinii.*

M. hedraeantha Harms

Big tree with pubescent branches, rather densely lenticellate ; fruit unknown.

Rain-forest.

Very near *M. hypolampra, M. klainei.*

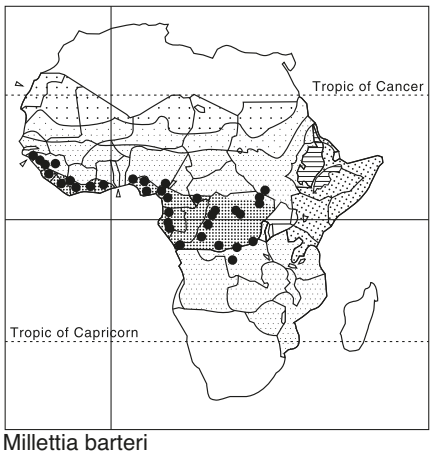
M. hockii De Wild.

Shrub 2-3 m tall or tree ; branches 2,5-4 mm Ø, slightly pubescent becoming glabrous. Sometimes flowering before the leaves appear.

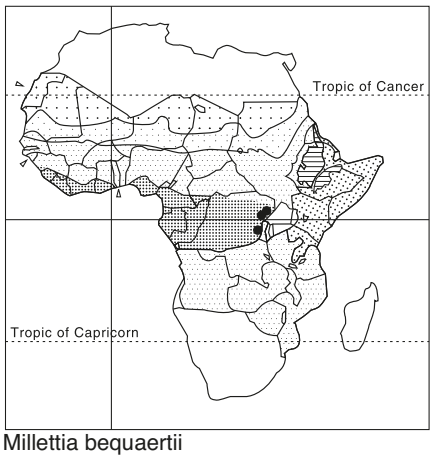
Forest of Katanga-type, often near streams.

M. hylobia Louis ex Hauman

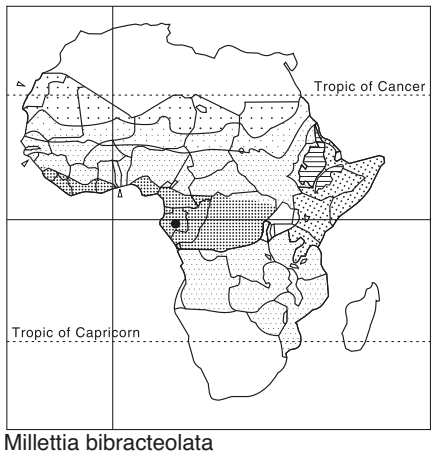
Tree to 15 m ; bole 10 m high, ± 12 cm Ø ; young branchlets 1-2 mm Ø with sparse red-brown hairs ; flowering branches woody, 5-7 mm Ø, dark brown, rugose.



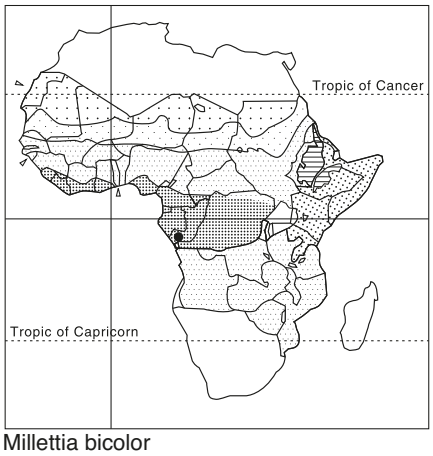
Millettia barteri



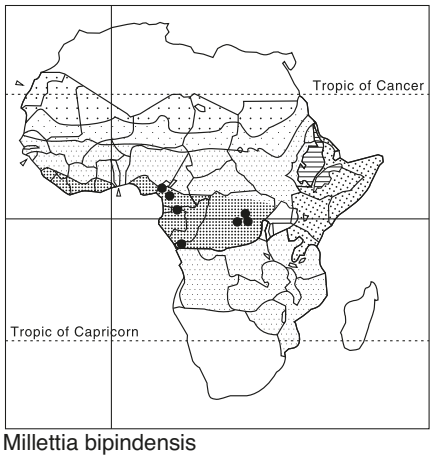
Millettia bequaertii



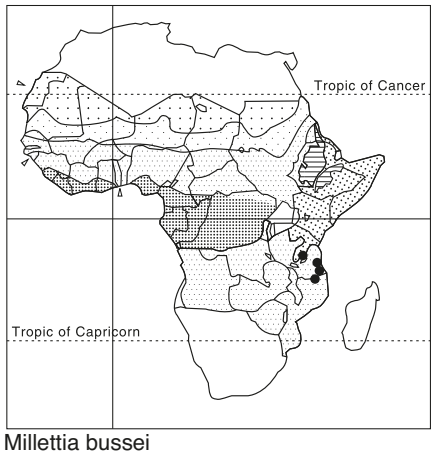
Millettia bibracteolata



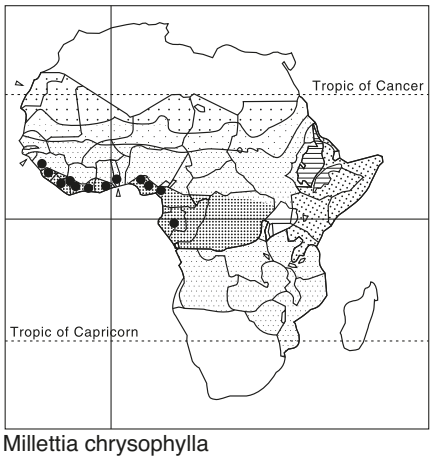
Millettia bicolor



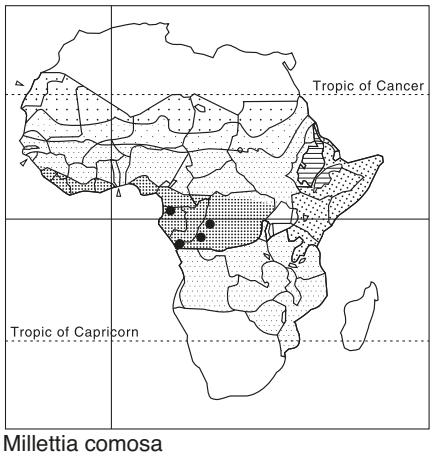
Millettia bipindensis



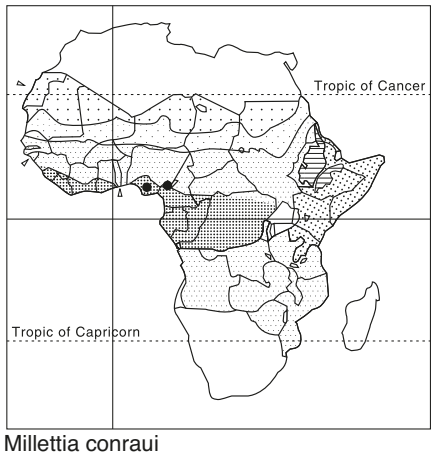
Millettia bussei



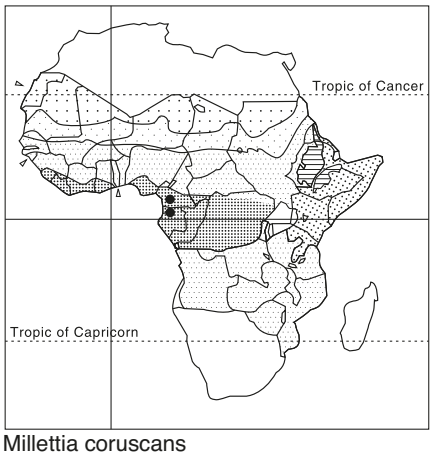
Millettia chrysophylla



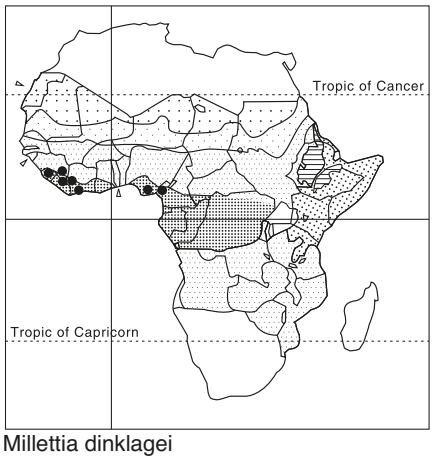
Millettia comosa



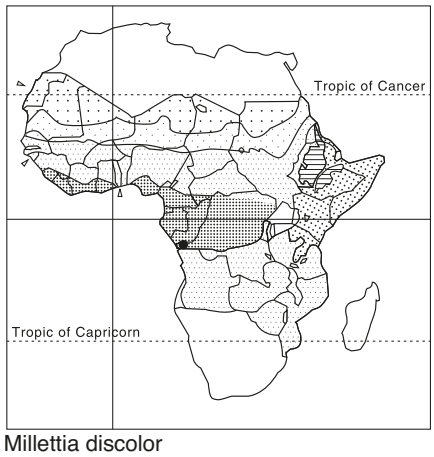
Millettia conraui



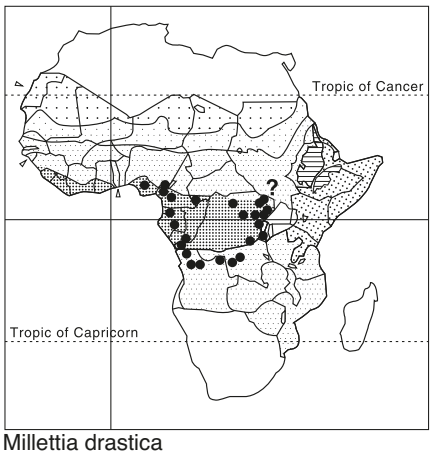
Millettia coruscans



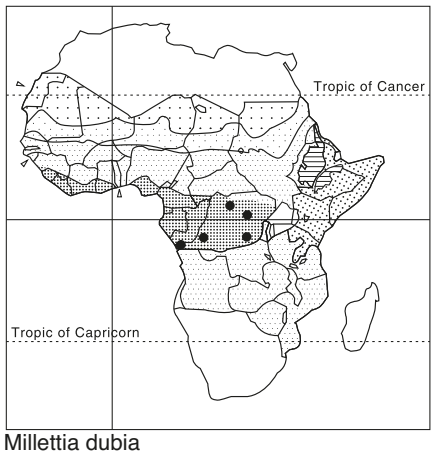
Millettia dinklagei



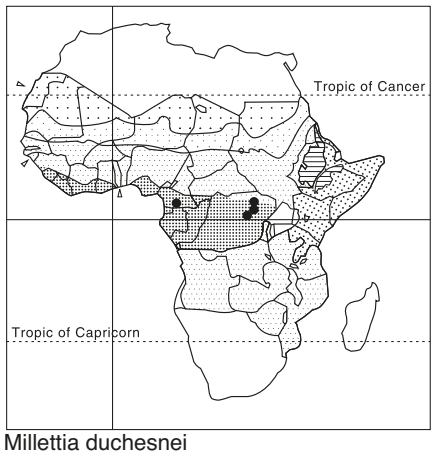
Millettia discolor



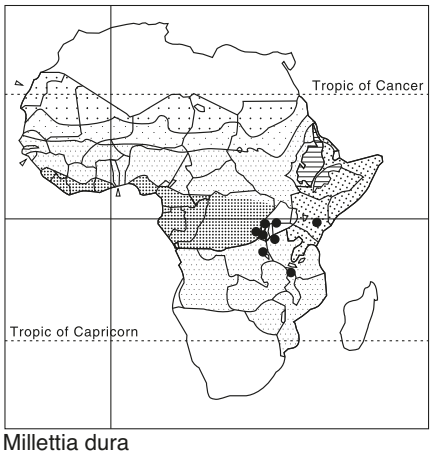
Millettia drastica



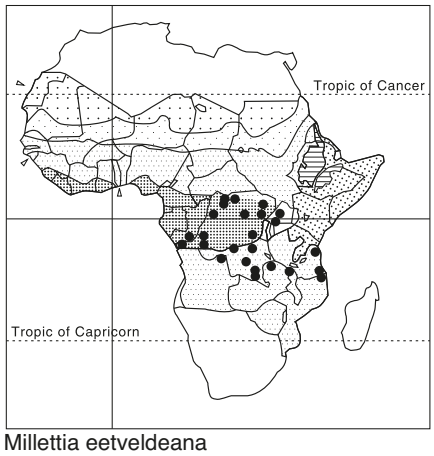
Millettia dubia



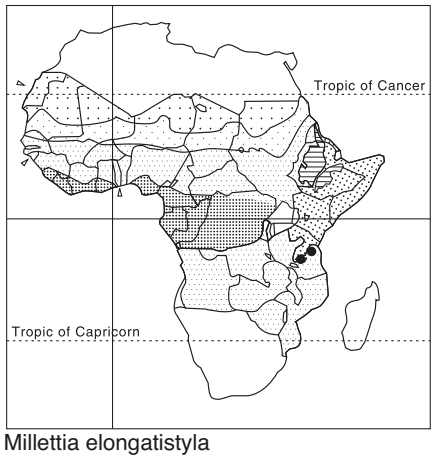
Millettia duchesnei



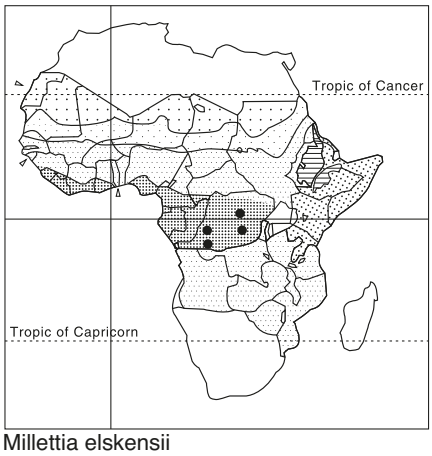
Millettia dura



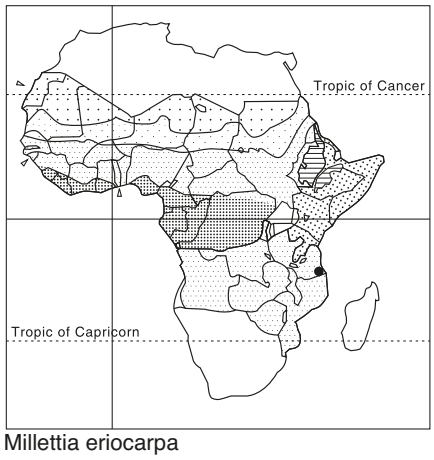
Millettia eetveldeana



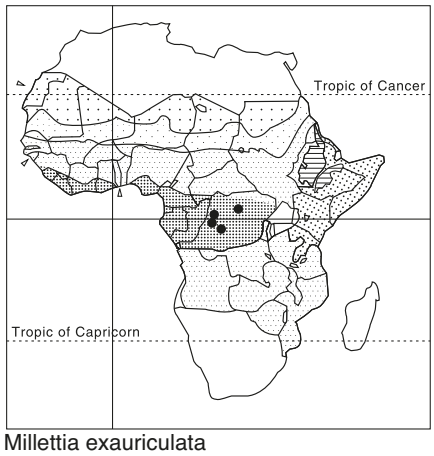
Millettia elongatistyla



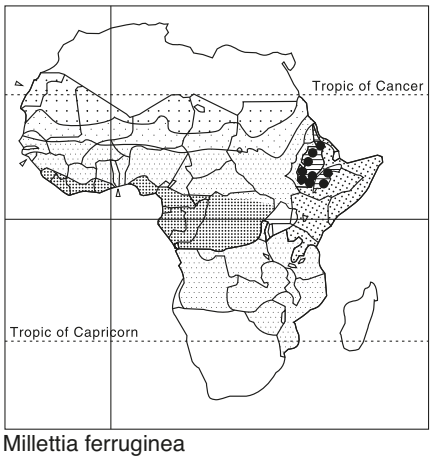
Millettia elskensii



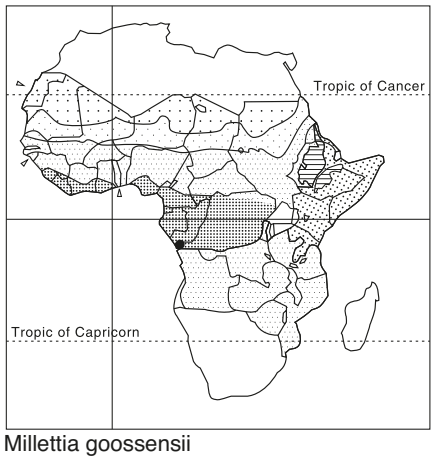
Millettia eriocarpa



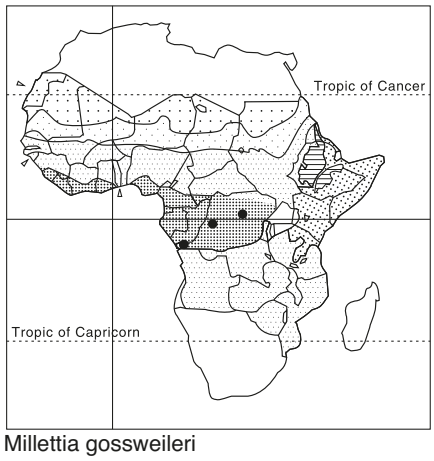
Millettia exauriculata



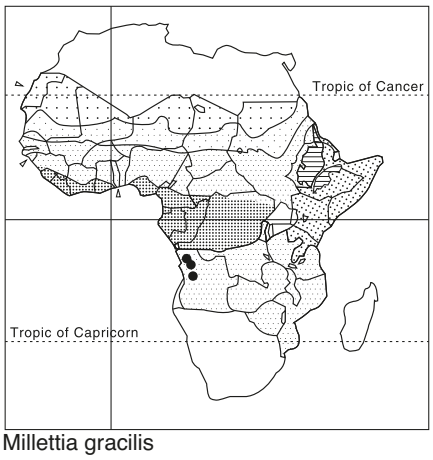
Millettia ferruginea



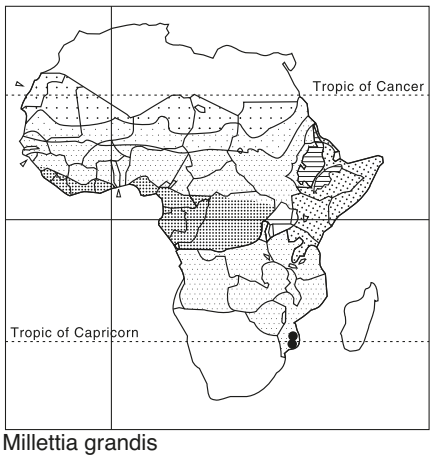
Millettia goossensii



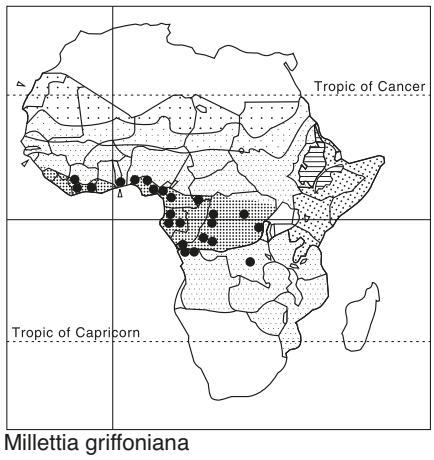
Millettia gossweileri



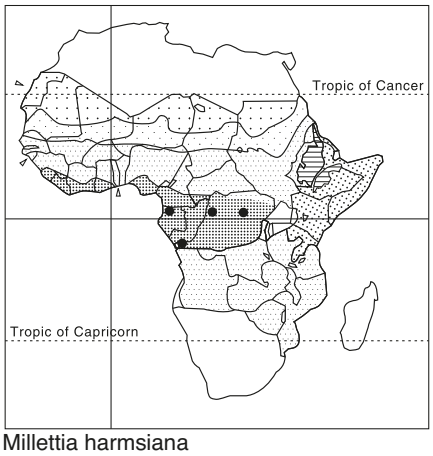
Millettia gracilis



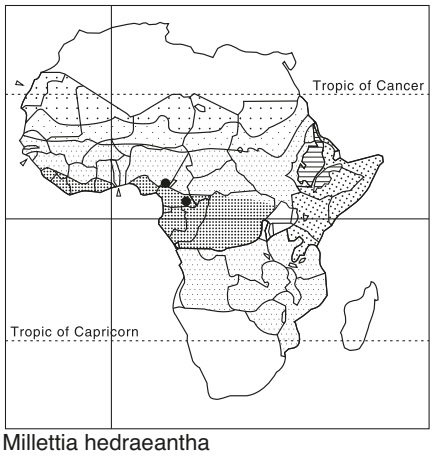
Millettia grandis



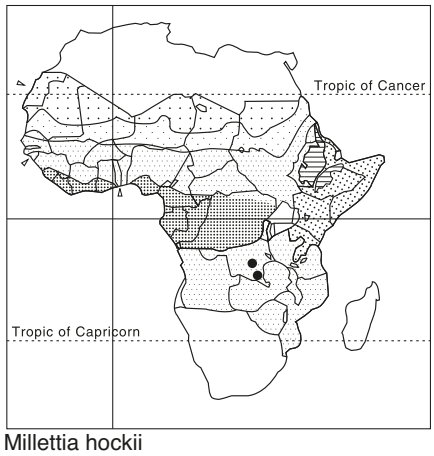
Millettia griffoniana



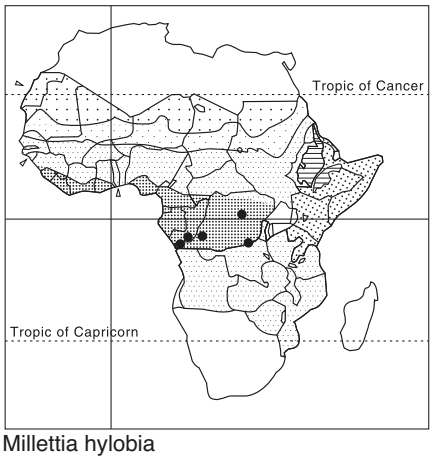
Millettia harmsiana



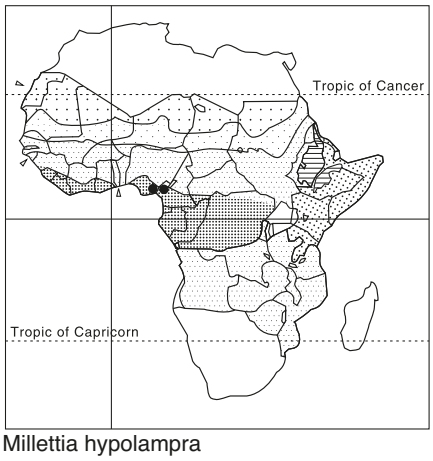
Millettia hedraeantha



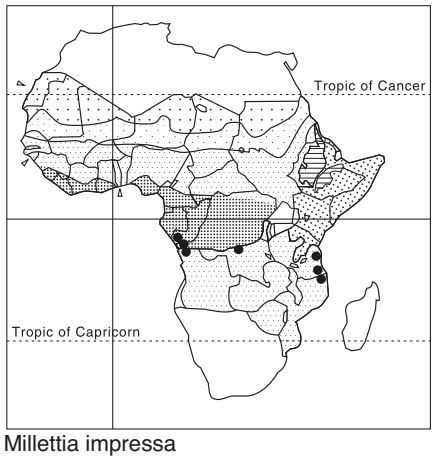
Millettia hockii



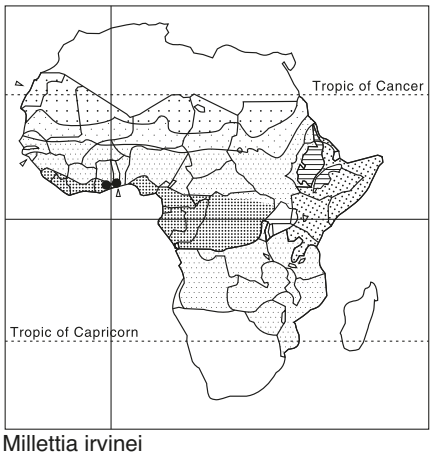
Millettia hylobia



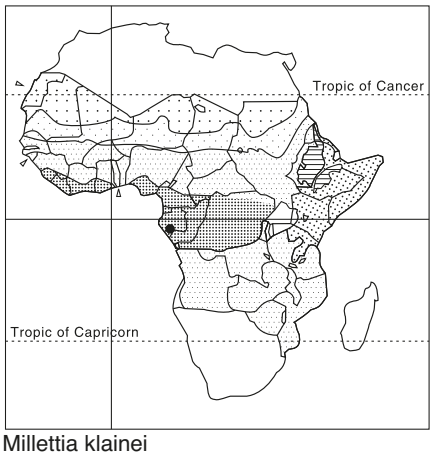
Millettia hypolampra



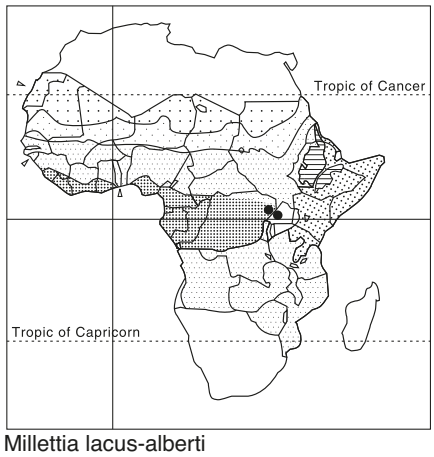
Millettia impressa



Millettia irvinei



Millettia klainei



Millettia lacus-alberti

MILLETTIA HYLOBIA

Rain-forest ; disturbed forest on firm ground or swampy.

Confused with *M. griffoniana* but leaves with 6-9 leaflets (not 3-4) and pods linear, dehiscent (not indehiscent, elliptic) ; also very near *M. rhodantha.*

M. hypolampra Harms

Climber ; leaves silvery-silky beneath, green above ; flowers white, crowded in terminal panicles with tomentose branches ; pod unknown ?

Ecology unknown (? forest).

M. impressa Harms

Liane to several m tall ; stems dark brown, pilose at first, later glabrescent, 2-3 mm Ø ; mature pod known !

Scattered tree grassland ; forest margins ; common on maritime hills in Cabinda (subsp. **impressa)** ; 10-200 m alt.

Comprises 2 subspp.

M. irvinei Hutch. & Dalziel

syn.: *Robinia multiflora* Schumach. & Thonn., non *Millettia multiflora* Collett & Hemsl. 1890 (Burma).

Shrub or tree with short twigs, brown-hairy.

Coastal savanna ; uncommon.

M. klainei Dunn

Shrub or liane ; branchlets brown, lenticellate, scabrous ; leaflets glabrous above, below with a silky, golden, dense, brilliant hair-covering.

Sandy ground.

Comprises 2 vars.

M. lacus-alberti J. B. Gillett

Liane or half-scrambling shrub ; twigs pubescent, blackish with whitish elliptic lenticels.

River ; shore with sand and pebbles, then forest on a steep slope, immediately behind the pebble zone ; 720 m alt.

Near *M. bipindensis, M. lucens, M. rhodantha.*

M. lane-poolei Dunn

Tree 4,5-6 m ; stems flexible ; wood hard ; flowers white or pale mauve, attractive.

Rather frequent on river sides ; secondary forest.

M. lasiantha Dunn – Icon.: White & al., Evergreen forest fl. Malawi : 331, 2001.

Liane 4,5-40 m tall, with deeply fluted and contorted stems at least 10 cm in d.b.h., climbing by means of almost leafless, terminal tendrils to 1,5 m long ; reaching the forest canopy ; branchlets velvety.

Rain-forest ; banks of streams ; it is the most abundant liane on the slope of Mt Mulange (Malawi) ; coastal and riverine evergreen forest ; also secondary scrub ; 10-1300(-1500) m alt.

M. lastoursvillensis Pellegr.

Liane with slender velvety red-brown branchlets ; leaflets golden-silky beneath and densely covered with short, appressed hairs ; fruit unknown.

Ecology unknown (? forest).

MILLETTIA

M. laurentii De Wild.

syn.: *M. tessmannii* Harms

Tree to 30 (>50) m ; trunk 100 cm Ø, cylindrical or nearly so at the base ; branches spreading, drooping ; twigs glabrous.

Flooded forest ; forest gallery ; wooded savanna.

Very ornamental ; sometimes planted.

M. lebrunii Hauman

Liane ; flowering branches ± 4 mm Ø, with elongated lenticels and longitudinal fine ridges and appressed, brilliant, slender hairs ; pod unknown.

Gallery forest ; river banks.

M. lecomtei Dunn

Shrub with glabrous lenticellate branchlets ; pod unknown.

Lagoon side ; coast.

M. leonensis Hepper

Climber or shrub with chestnut-brown pubescent branches ; bark glabrous, lenticellate ; mature pod unknown.

In forest at riverside.

M. letestui Pellegr.

Liane 6 m long, with bark at first slightly velvety, lenticellate, soon glabrous and dark-brown ; leaflets with appressed silky golden and silvery hairs beneath. Pod known !

Gallery forest ; cleared places in forest.

M. leucantha Vatke

Liane, shrub or tree, evergreen ; young twigs pale brown velvety, older twigs dark grey with white lenticels.

Semi-evergreen forest remnants on rocky hills ; 1050-1350 m alt.

MUTHOKA, P. N. & al. (2003). Seed quality studies in the Kenyan shrub Millettia leucantha. *In :* SMITH, R. D. & al., Eds., *Seed conservation : turning science into practice :* 135-149. The Royal Botanic Gardens, Kew.

Vulnerable ; plants cleared for cultivation of crops.

M. liberica Jongkind – Icon.: Blumea 48 : 164, 2003.

syn.: *M. sanagana* sensu Hepper, Fl. W. Trop. Africa, Ed. 2, 1(2) : 526, 1958 quoad specim. Deighton 2254, Baldwin 10627 ; sensu Aké Assi, Boissiera 57 : 329, 2001, quoad specim. Aké Assi 10151, 14833, non Harms

Shrub or tree to 10 m tall ; mature pod unknown.

Forest.

Near *M. sanagana.*

M. limbutuensis De Wild.

Tree to 5 m ; trunk 12 cm Ø ; branchlets 4-5 mm Ø, yellow, striate.

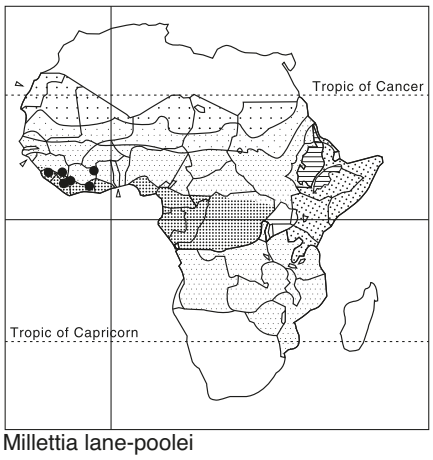
Riparian ; regrowths ; flooded islands in stream.

Perhaps syn. of *M. sanagana.*

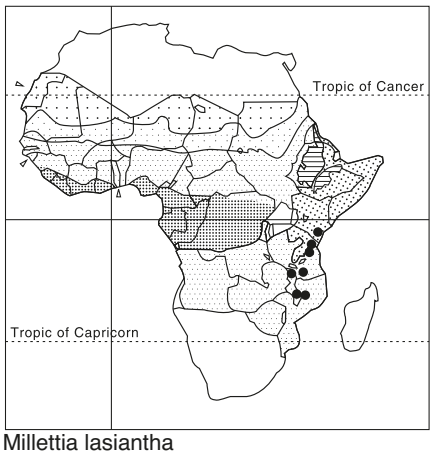
M. lucens (Scott-Elliot) Dunn

bas.: *Lonchocarpus lucens* Scott-Elliot

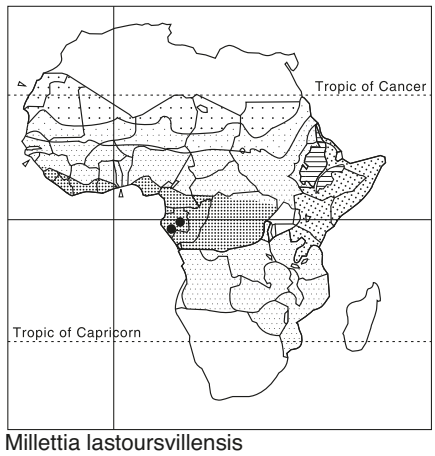
Straggling climber 9-15 m long with rounded puberulous, silvery-silky branchlets.



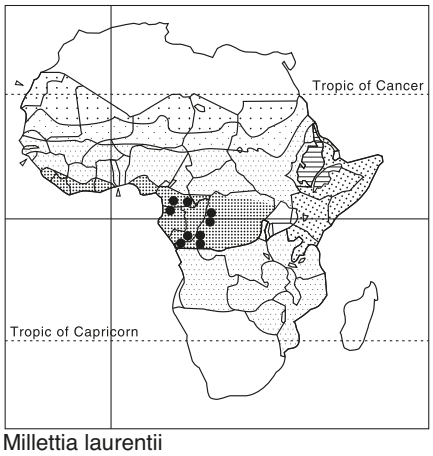
Millettia lane-poolei



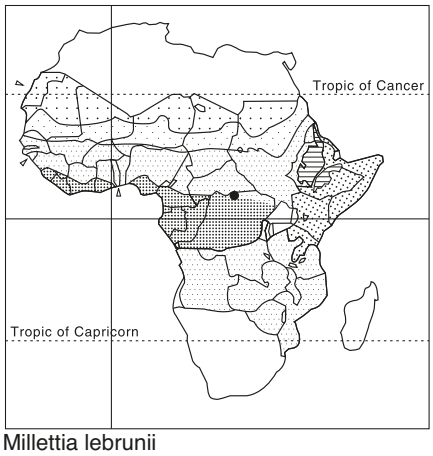
Millettia lasiantha



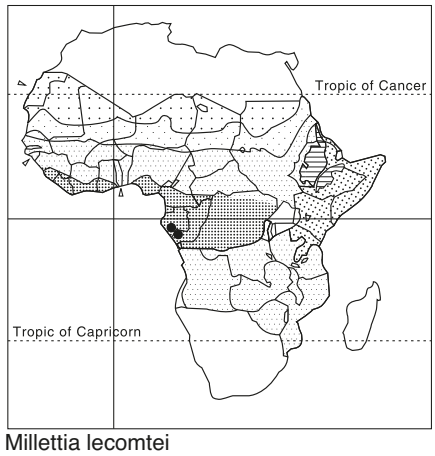
Millettia lastoursvillensis



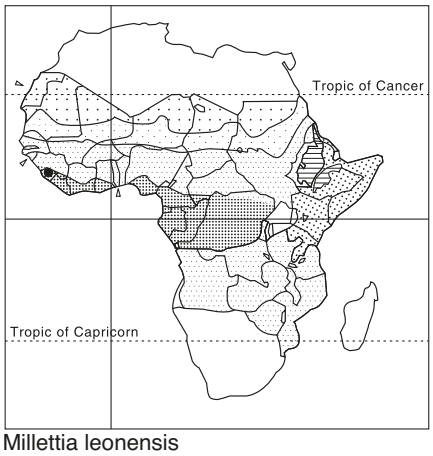
Millettia laurentii



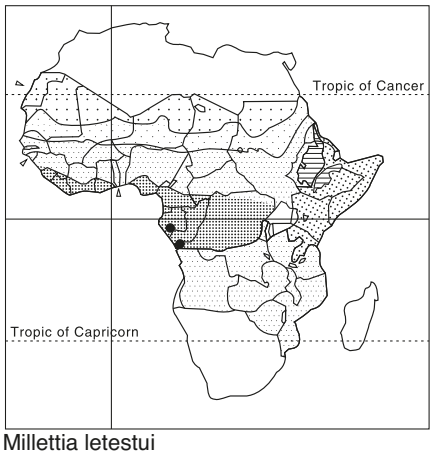
Millettia lebrunii



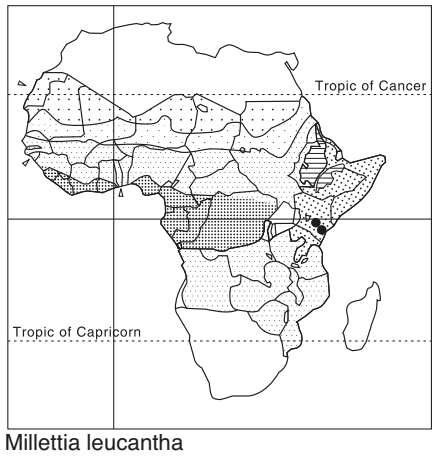
Millettia lecomtei



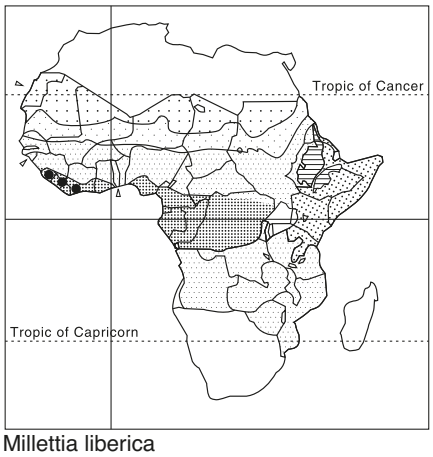
Millettia leonensis



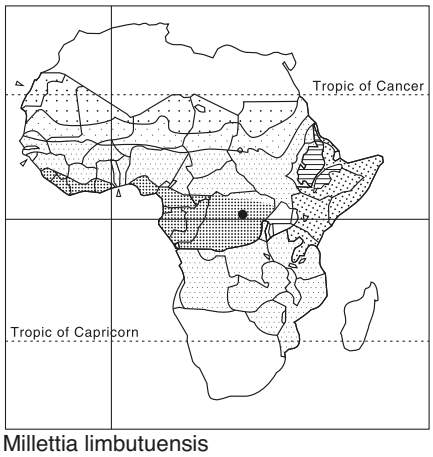
Millettia letestui



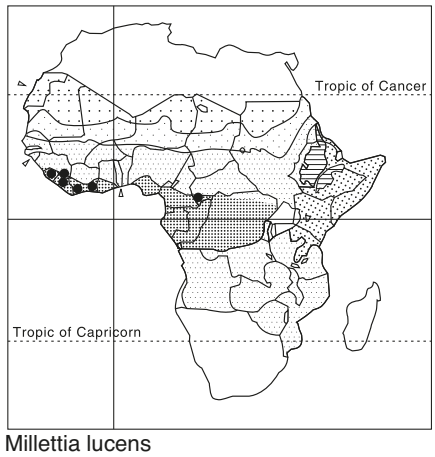
Millettia leucantha



Millettia liberica



Millettia limbutuensis



Millettia lucens

By small streams; forest; 1100 m alt. on Mt. Nimba.

The record from SW Central African Rep. represents a range extension of 2500 km (fide D. J. Harris, Vascul. Pl. Dzanga-Sangha Res.: 121, 2002).

M. lundensis E. P. Sousa

Woody climber to 40 m long and much divided all along the flattened trunk; branches reddish-brown pubescent, becoming glabrous; mature pod unknown.

Near stream in humid forest; 706 m alt.

Only known from the type collected in 1948.

M. macrophylla Benth., *excl.* var. *aboensis* Hook. f. (= **M. aboensis).**

syn.: *M. hookeriana* Taub.

Tree 2-10 m; bark brownish; branchlets lenticellate.

Forest and stream banks; 1-400 m alt.

Bioko/Fernando Poo (cultivated?). Gabon?

M. macroura Harms

syn.: *M. congolensis* De Wild., 1900, nom.; Ann. Mus. Congo Belge, Bot., Sér. 3, 1: 61, 1901!

Tree or erect or sarmentous shrub or liane with stem to 9 cm Ø; flowering branchlets brownish pubescent, becoming glabrous, 3-5 mm Ø.

Rain-forest with *Scorodophloeus;* secondary forests; forest edges; river sides; flooded islands; wooded savannas; clearings. – Very common, variable, ubiquitous.

M. makondensis Harms

Subshrub with a woody rootstock, 16-120 cm tall or long; stems ascending or, less often, prostrate, semi-woody, green, pubescent (drying yellowish); mature pod unknown.

Geoxylic suffrutex (Vollesen, Nord. J. Bot. 1: 735, 1981).

Deciduous woodland, especially when regenerating after cultivation; sandy hills; 10-500 m alt.

M. mannii Bak.

syn.: *Lonchocarpus zenkeri* Taub.

Tree 3-8 m; branchlets rounded, slightly striate, glabrescent.

Edges; laterite, open sunny places; 800 m alt.; not frequent, isolated specimens or in small populations.

M. mavangensis Pellegr.

Liane; branchlets at first slightly velvety, becoming glabrous and lenticellate; fruit unknown.

Ecology unknown (? forest).

Only known from the type collected in 1930.

M. mavoundiensis Pellegr.

Liane; branchlets brown-grey, at first slightly villous, soon glabrous and lenticellate; leaflets silvery beneath; fruit unknown.

Forest gallery.

Only known from the type collected in 1914.

M. micans Taub. – Neotype: Busse 65, if no isotype survives (fide Verdcourt).

Tree to 8 m; all young parts densely brown pubescent, except the leaflets which are grey.

Deciduous woodland; wooded grassland; locally common; 10-300 m alt.

M. mossambicensis J. B. Gillett

Tree 3-15 m; branches grey, becoming black, with elliptic lenticels; young branchlets reddish-brown pubescent.

Woodland with *Adansonia, Sterculia, Acacia,* etc. on red sand; mixed evergreen and dry forest with *Pterocarpus, Xylia, Newtonia;* sometimes abundant; 40-200 m alt.

If in flower similar to *M. sacleuxii* but in fruit readily confused with *M. bussei.* In this condition attention should be paid to: – lateral nerves usually not quite reaching the leaflet margin; the longer pedicels; pods less tapering towards the base; the funicle not dilated at the side towards the base of the fruit.

M. nudiflora Welw. ex Bak.

syn.: *Phaseolodes nudiflorum* (Welw. ex Bak.) O. Kuntze

Most beautiful tree 9-12 m tall or only 4,5 m; trunk usually obliquely erect; branches spreading, sometimes pendulous, tuberculate; branchlets nodding, leafless or nearly so at the time of flowering.

Primitive forest; river bank; sometimes scattered here and there.

M. nutans Welw. ex E. P. Sousa

Tree 4,5-6 m, very rarely to >7,5 m, often a shrub 1,8 m tall but then not flowering; trunk tortuous 0,2-0,3 m Ø; crown ample, leafy; branches spreading, the lower ones very much so.

Margins of woods; sporadic in primitive forest; bushy slopes.

One of the most beautiful plants in the family (Hiern, 1896).

M. nyangensis Pellegr.

Liane; branchlets slender, blackish, first red-brown villous; fruit unknown.

Ecology unknown (? forest).

Only known from the type collected in 1915.

M. oblata Dunn

Shrub or tree 2-30 m tall; young branches dark ± rusty pubescent.

More open parts of rain-forest; rain-forest especially on the banks of streams; evergreen forest and scrub; deciduous thickets; sometimes cultivated for ornament and as a coffee shade tree (Zambia); 900-1900 m alt.

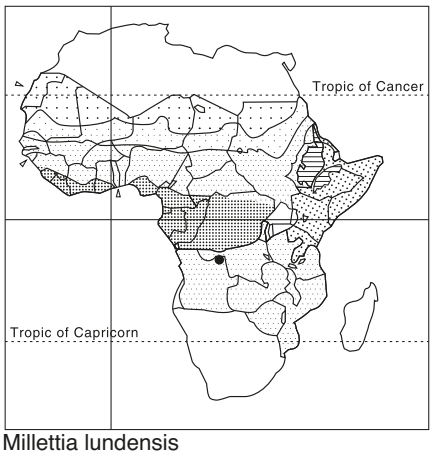
Variable species comprising 5 subspp. (J. B. Gillett in Kew Bull. 15: 32-34, 1961). Cf. under **M. bequaertii.**

M. oyemensis Pellegr.

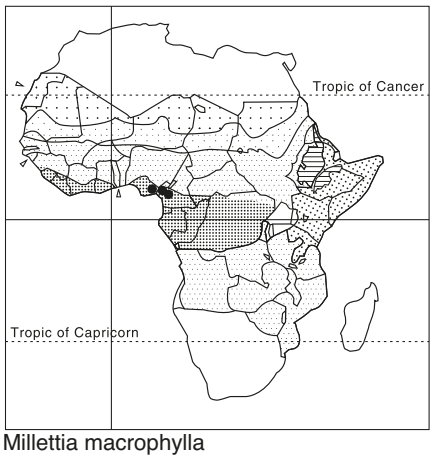
Liane with slender glabrescent, dark-brown branchlets; pod unknown.

Ecology unknown.

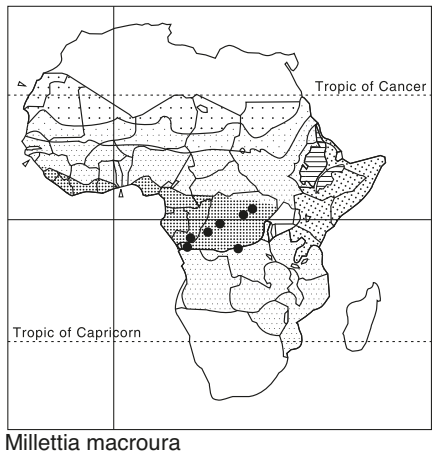
Only known from the type collected in 1934.



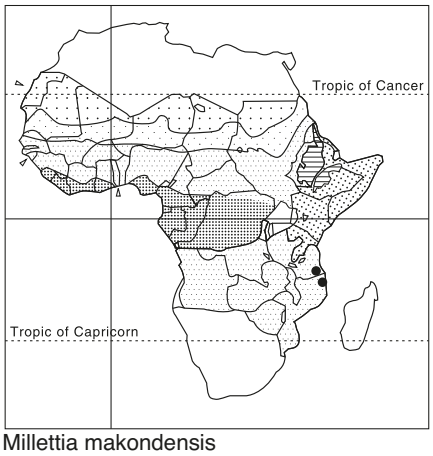
Millettia lundensis



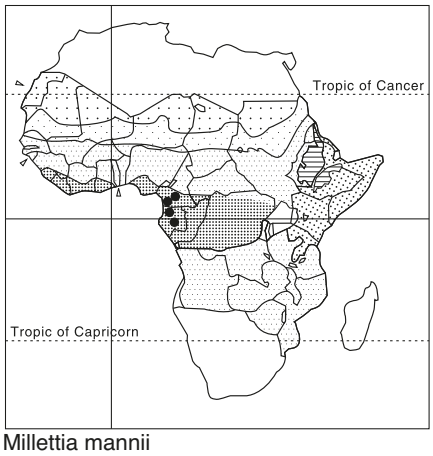
Millettia macrophylla



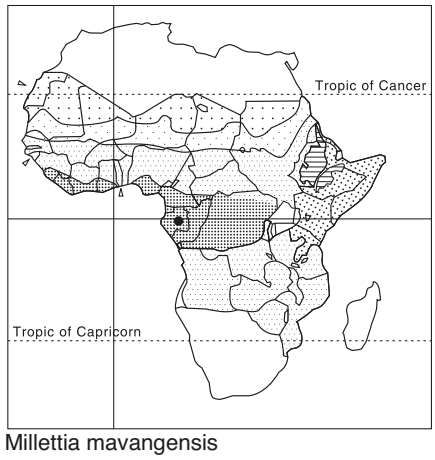
Millettia macroura



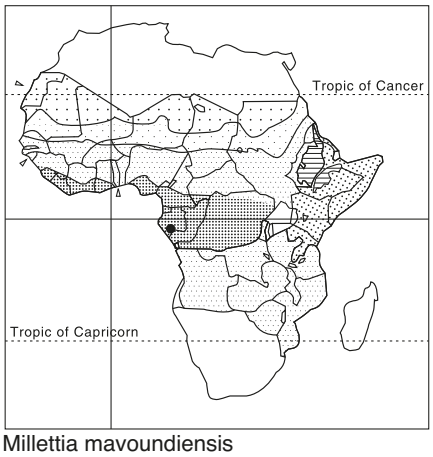
Millettia makondensis



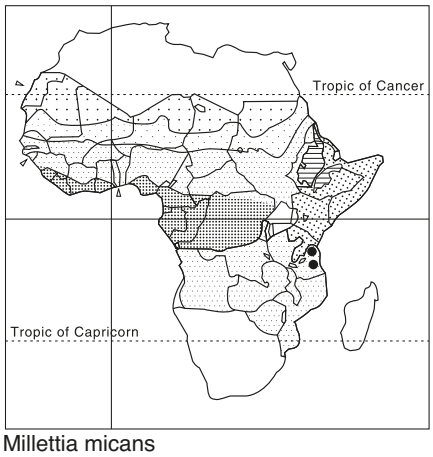
Millettia mannii



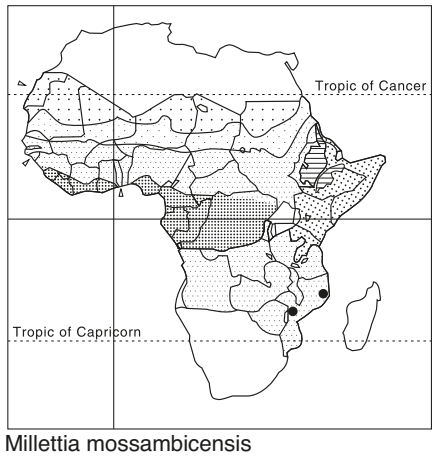
Millettia mavangensis



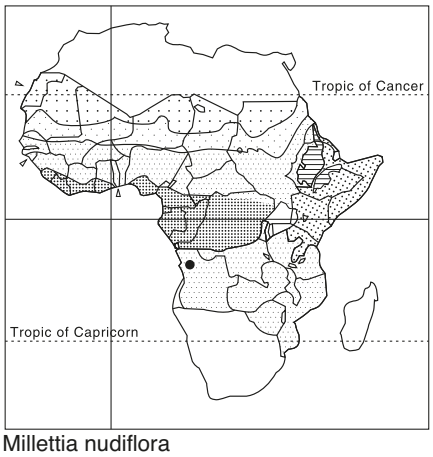
Millettia mavoundiensis



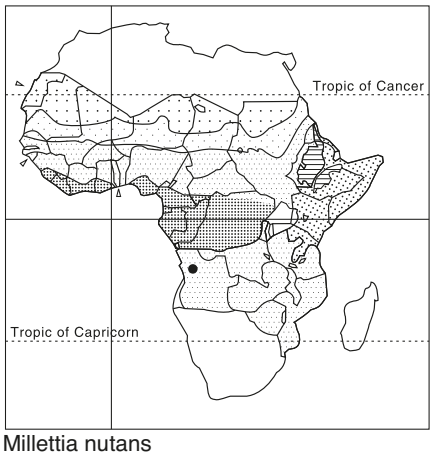
Millettia micans



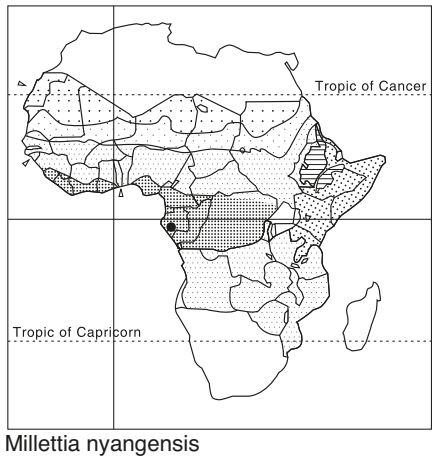
Millettia mossambicensis



Millettia nudiflora



Millettia nutans



Millettia nyangensis

MILLETTIA

M. pallens Stapf

Shrub or tree, glabrous, 4,5-12 m tall ; with a spreading crown ; trunk 30 cm Ø ; flowers purple.

Sandy soil in savanna country ; screes.

Sometimes grown as a hedge.

M. paucijuga Harms

Coppicing shrub with a conical shape, to 5 m tall ; young stems sparsely white pubescent.

Deciduous thicket on rocky escarpment with *Bussea, Commiphora, Grewia, Burttia ;* locally common ; 1000-1350 m alt.

New specimens with pods desirable.

M. pilosa Hutch. & Dalziel

Woody climber ± 1,8 m tall ; branchlets ferruginous pilose, angular.

Forest.

M. psilopetala Harms

syn.: *Craibia bequaertii* De Wild.

Evergreen shrub or tree to 10 m tall or liane ; young stems dark-brown pubescent. More investigation on the fruit needed.

Rain-forest on firm ground or flooded ; islands in stream ; river sides ; 750-1800 m alt.

M. puguensis J. B. Gillett

Liane ; young stems minutely khaki pubescent ; pod unknown.

Evergreen forest ; ± 100 m alt.

Near *M. elskensii* and *M. duchesnei* from Zaire (vide Kew Bull. 15 : 21, 1961).

Only known from the type collected in 1954.

M. rhodantha Baill.

syn.: *Lonchocarpus multifolius* Dunn

Tree 9-18 m ; trunk 1,5 m in girth ; young branches densely red-brown pubescent.

Closed forest ; common in places, or scattered ; river sides (gallery) ; 500 m alt. on Mt. Nimba.

M. ripicola E. P. Sousa

Sarmentous shrub 4 m tall ; branches reddish-brown tomentose ; mature pod unknown.

River sides ; 750 m alt.

M. sacleuxii Dunn

Tree to 10 m or more tall ; bark whitish, striate ; young stems covered with dark purplish-brown hairs, later glabrescent.

Evergreen forest on rocky slopes ; 500-700 m alt.

M. sanagana Harms

Shrub or tree to 5 m tall ; leaflets large with undulate margins, 10-20 × 5-9 cm.

Rain-forest ; forest edges ; water falls.

Bioko/Fernando Poo.

Confused with *M. liberica* (cf. specimens cited above under *M. liberica).* Cf. under **M. limbutuensis.**

MILLETTIA

M. sapinii De Wild., incl. var. *longeacuminata* De Wild. and var. *subrubrosericea* De Wild ;

Liane or shrub with bownish nearly glabrous branches 3-4 mm Ø.

Forest ; gallery forest.

M. schliebenii Harms

Tree 6-10 m ; branches at first brown pubescent, later glabrescent ; pod unknown.

Scrub forest ; scattered-tree grassland ; 10-300 m alt.

M. semseii J. B. Gillett

Tree to 15 m ; young branches minutely brown pubescent ; crown large spreading, overhanging the river-bank.

River-banks ; fringing and alluvial forests ; 500-600 m alt.

Near *M. bussei.*

M. sericantha Harms

Shrub or tree ; mature branches glabrous ; bark olive-grey ; young branches villous, golden brownish.

Ecology unknown ; ? 500-800 m alt.

Only known from two specimens collected in 1898 and 1953 and perhaps not conspecific.

Near *M. bussei.*

M. soyauxii Taub.

Climbing shrub 2-4 m long with branchlets at first red-brown villous, becoming glabrous, slightly ridged ; fruit unknown.

Forest edges.

Only known from the type.

M. stenopetala Hauman

Tree ?, or probably liane, with flowering branchlets 3-4 mm Ø, reddish, smooth, glabrescent, with rather abundant elongated lenticels ; leaflets very brilliant beneath with golden hairs ; pod unknown.

Transitional forest.

Only known from the type.

M. stipellatissima Hauman

Liane ; stem 3-4 cm Ø ; branches glabrescent with ± 8 low longitudinal crests and very small lenticels ; stipels 7-10 mm long, bracteoles 7 × 7 mm ; pod unknown.

Swampy forest on river banks.

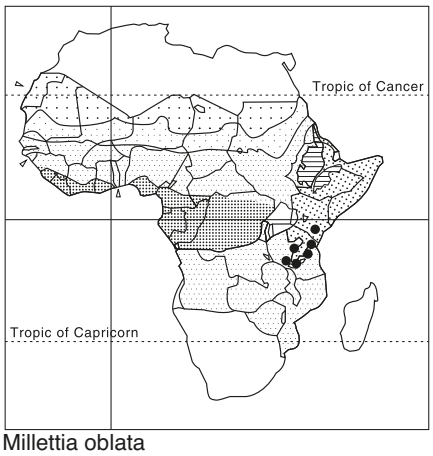
Only known from the type collected in 1952.

M. stuhlmannii Taub. – Icon.: Sim, Forest Fl. Port. E. Afr.: tab. 53, 1909.

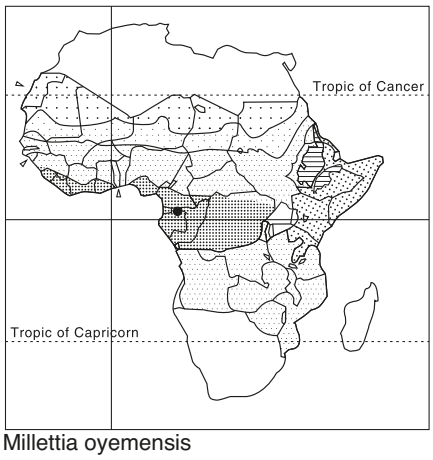
syn.: *Lonchocarpus mossambicensis* Sim

Tree 6-24 m, with a spreading crown and smooth, papery or flaky yellow or greenish-grey bark ; young twigs covered with minute white appressed hairs.

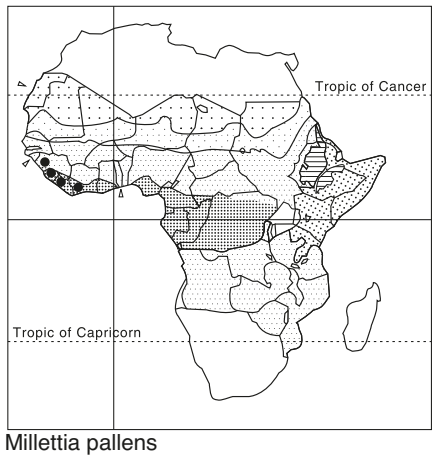
Deciduous woodland ; locally dominant ; *Brachystegia* and *Pterocarpus* woodland ; *Parkia, Pteleopsis, Khaya* gallery forest ; forming associations with *Afzelia, Pteleopsis, Pterocarpus, Xylia ; Khaya-Newtonia* forest ; riverine and degraded associations ; also persisting on cleared grassy plateaux ; on white or red sands ; often in rocky places ; 10-1020 m alt.



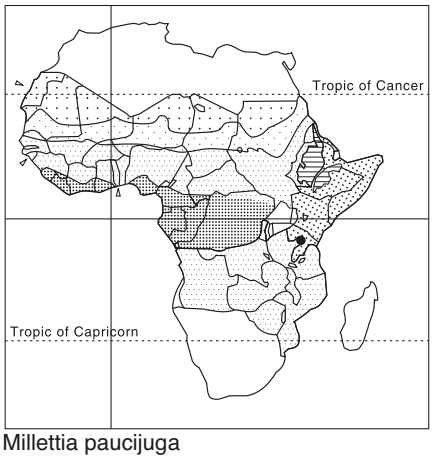
Millettia oblata



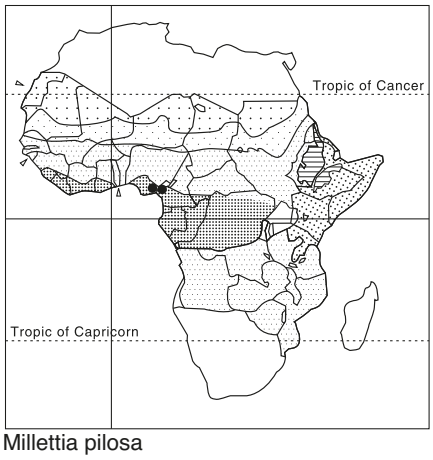
Millettia oyemensis



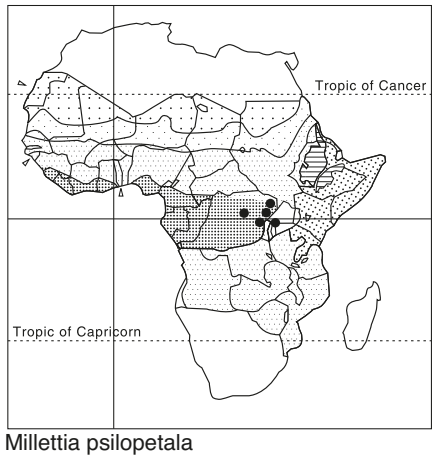
Millettia pallens



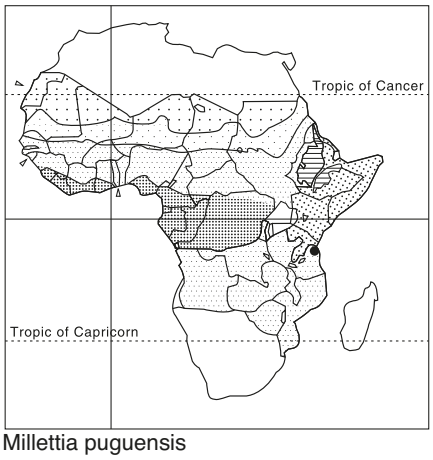
Millettia paucijuga



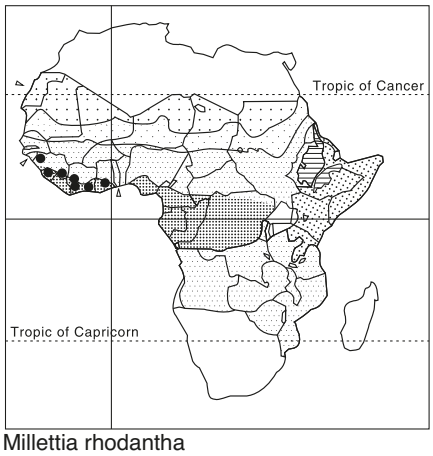
Millettia pilosa



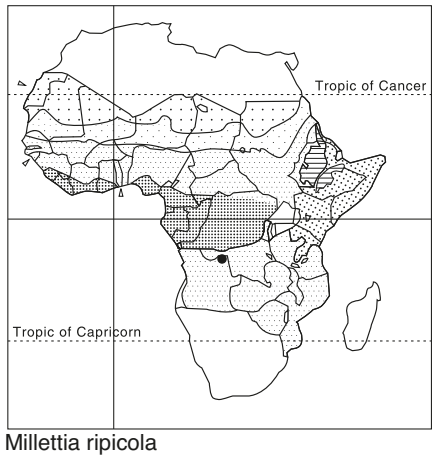
Millettia psilopetala



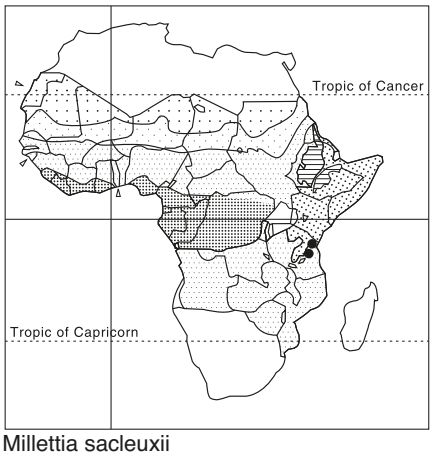
Millettia puguensis



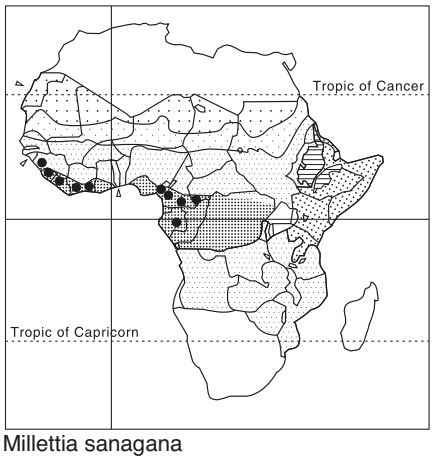
Millettia rhodantha



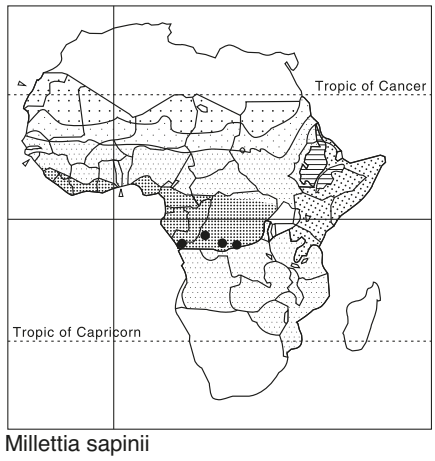
Millettia ripicola



Millettia sacleuxii



Millettia sanagana



Millettia sapinii

MILLETTIA STUHLMANNII

S. Africa (Soutpansberg): "one of southern Africa's most unique and understudied mountain ranges" fide Hahn, 1997. Several plants widespread in south-central African countries, occur in South Africa only as isolated populations in Soutpansberg: *Millettia stuhlmannii, Oxytenanthera abyssinica, Aloe excelsa, Brackenridgea zanguebarica, Bolbitis heudelotii, Cyperus cyperoides* subsp. *flavus, Trilepisium madagascariensis* (vide Willis & al., Sabonet News 6: 209, 2001).

M. takou Lorougnon

Shrub 3-8 m tall; branches pubescent with white lenticels; branchlets with brown hairs.

Secondary formations in lagoon area.

Near *M. rhodantha.*

M. tanaensis J. B. Gillett

Shrub to 3 m tall, flowering with the young leaves or before; twigs dark grey, with numerous small elliptic lenticels; leaves silky when young.

Rocky ground in *Acacia, Commiphora* bushland; near rivers; 700-900 m alt.

M. theuszii (Büttner) De Wild.

bas.: *Lonchocarpus ? theuszii* Büttner

Liane to 25 m long; branches reddish, 5-10 mm Ø, at first tomentose, becoming glabrous.

Rain-forest; secondary forest; gallery; forest edges; savanna; fallow land.

M. thonneri De Wild. – Icon.: De Wild., Etudes Fl. distr. Bangala of Ubangi: tab. 1, 1911 (Pl. Thonn. Cong., Sér. 2).

Shrub 3 m tall; branches 4-5 mm Ø, dark purple, puberulous when young; pod unknown.

On hills along river banks in the brushwood; isolated, rather rare; 410 m alt.

Only known from the type collected in 1909.

M. thonningii (Schumach. & Thonn.) Bak.

bas.: *Robinia thonningii* Schumach. & Thonn.

syn.: *Millettia atite* Harms

Deciduous tree to 9-18 m, with bole free to 9 m height; crown large with beautiful mauve flowers, when the tree is almost leafless.

Mixed deciduous forest; savanna, often by streams; also commonly planted in villages (and probably dispersed southwards to Angola by man).

Bioko/Fernando Poo; probably introduced in São Tomé. Zaire?

Confused with *Millettia griffoniana.*

M. urophylloides De Wild.

Liane to 20 m tall; stem 10 cm Ø; flowering branches 3-4 mm Ø, reddish with small lenticels, puberulous; bark spotted green and white, longitudinally fissured.

Flooded forests; river sides; abundant near Eala (Zaire).

Comprises 2 vars.

MILLETTIA

M. usaramensis Taub.

Shrub or tree (2-)3-7(-10) m tall, sometimes many-stemmed (thicket-forming); bark grey, smooth; pod unknown? in subsp. **usaramensis** var. **parvifolia.**

Wooded grassland; margins of forest; riparian forest; also in semi-deciduous forest; transition woodland; open forest; mixed *Acacia* savanna, miombo open grassland borders on sandy soil; termite mounds; *Terminalia-Combretum* and *Brachystegia tamarindoides* woodland, dense bushland and thicket, often on rocky granite outcrops (subsp. **australis** J. B. Gillett); 10-1100 (-1200) m alt.

Comprises 2 subspp.: – subsp. **usaramensis** with 2 vars.

M. vankerckhovenii De Wild.

syn.: *M. vanderystii* De Wild.

Liane; branches almost black, 2 mm Ø, with erect, dense, dark-brown hairs, nearly 1 mm long; pod unknown.

Rain-forest? or forest gallery.

M. versicolor Welw. ex Bak. – Icon.: Bull. Soc. Roy. Bot. Belg. 36(2): tab. 5, 1897 (sub nom. *Lonchocarpus dewevrei).*

syn.: *Phaseolodes versicolor* (Welw. ex Bak.) O. Kuntze; *Lonchocarpus dewevrei* Micheli

Erect shrub 0,6-4(-15) m tall with glabrous erect or suberect branches; more rarely a tree 3,6-6 m or 8-10 m tall with trunk 30-60 cm Ø, or 20-30 m tall.

Not uncommon in bushy places at the skirts of primitive forests; occurring in rather dry situations; gallery forest; secondary forests; dry forests; savannas with regrowths; sometimes very common.

M. warneckei Harms

syn.: *M. aureocalyx* Dunn; *M. scott-elliotii* Dunn

Climber or tree ± 6 m tall; golden or rusty-brown or dark coloured pubescence on the leaflets and inflorescence.

Behind sea shore in grassland country; savanna.

Comprises 2 vars.

M. zechiana Harms

syn.: *M. stapfiana* Dunn; *M. ivorensis* A. Chev., nom.

Shrub or tree 4,5-9 m tall with young branches pubescent; sometimes forming clumps 1,8 m tall.

Grassland; secondary forest; regrowth; coastal grassy plains; 500 m alt. on Mt. Nimba.

SYNONYMS:

Millettia adenopetala Taub. = **Schefflerodendron**

atanensis De Wild. = **Milletia urophylloides** var.

atite Harms = **M. thonningii**

aureocalyx Dunn = **M. warneckei**

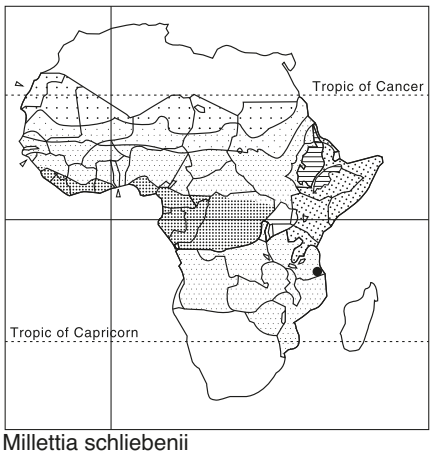
baptistarum Buettn. = **Craibia brevicaudata** subsp. **brevicaudata**

breviflora De Wild. = **Aganope lucida**

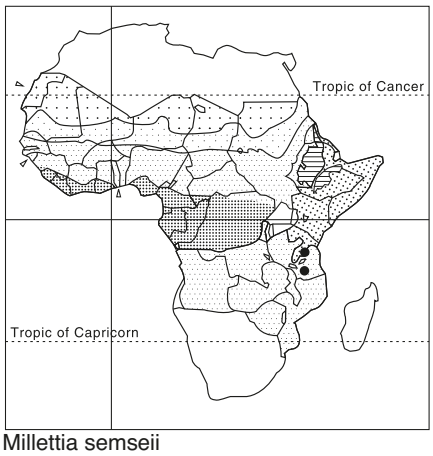
brevistipellata De Wild. = **Millettia eetveldeana** var.

brunneosericea De Wild. = **M. comosa**

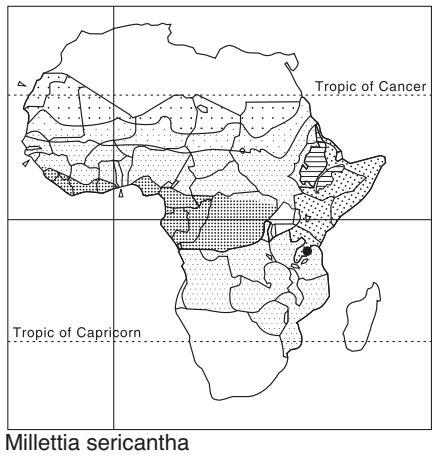
caffra Meisn. = **M. grandis**



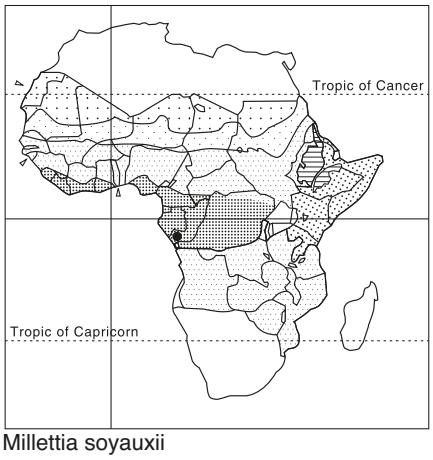
Millettia schliebenii



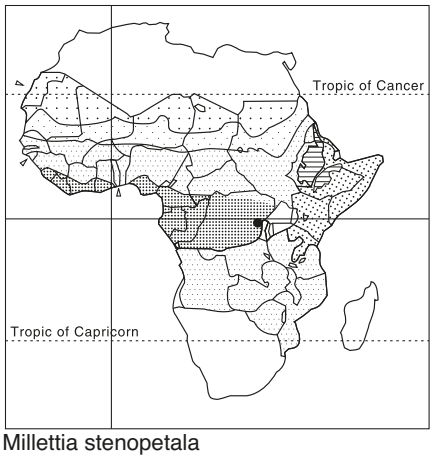
Millettia semseii



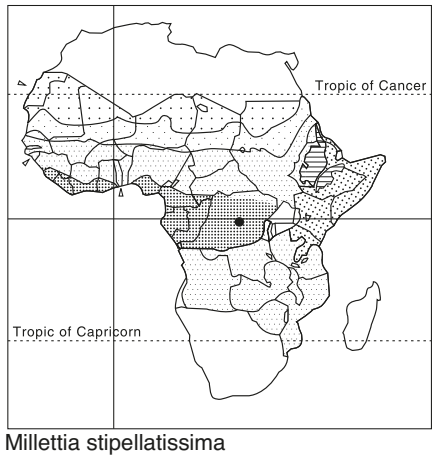
Millettia sericantha



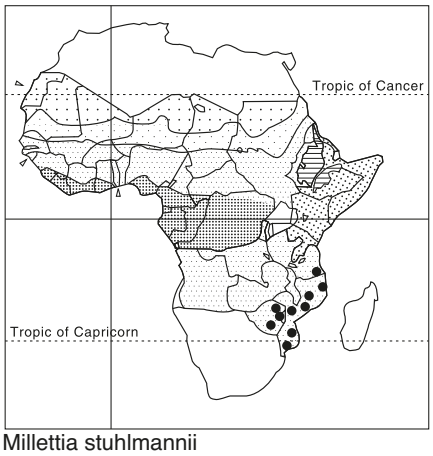
Millettia soyauxii



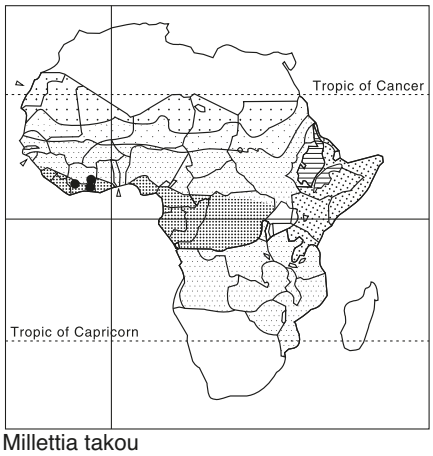
Millettia stenopetala



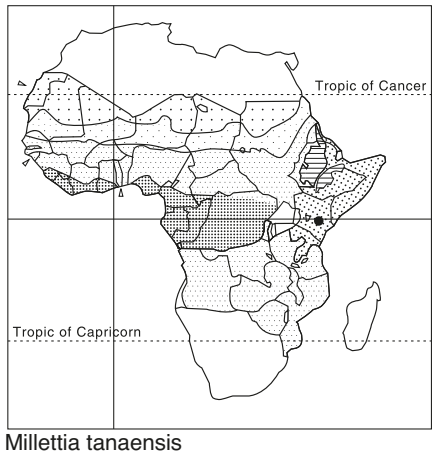
Millettia stipellatissima



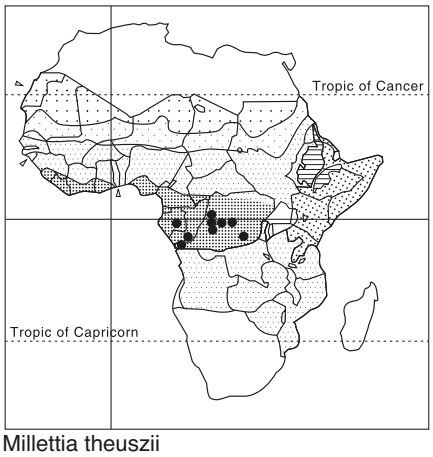
Millettia stuhlmannii



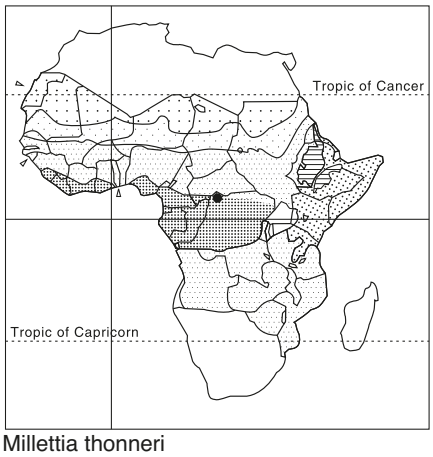
Millettia takou



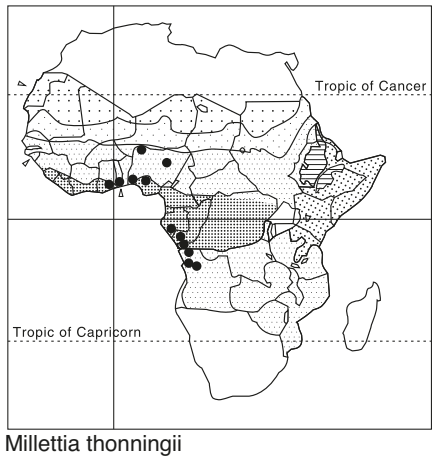
Millettia tanaensis



Millettia theuszii



Millettia thonneri



Millettia thonningii

calabarica Dunn = **M. barteri**
claessensii De Wild. = **M. dubia**
congolensis De Wild. = **M. macroura**
cyanantha Dunn = **M. dura**
darassana Cufod. = **M. ferruginea** subsp.
demeusei De Wild. = **M. barteri**
drasticoides De Wild. = **M. drastica**
gagnepainiana Dunn = **M.** ? **comosa**
gentillii De Wild. = **M. barteri**
giorgii De Wild. = **M. drastica**
goetzeana Harms = **M. impressa** subsp.
hirsuta Dunn = **Platysepalum**
hookeriana Taub. = **Millettia macrophylla**
inaequalisepala Hauman = **M. angustidentata**
ivorensis A. Chev., nom. = **M. zechiana**
kennedyi Hoyle = **M. dinklagei**
leptocarpa Dunn = **M. eetveldeana**
macrophylla Benth. var. *aboensis* Hook. f. = **M. aboensis**
macrostachya (Hook. f.) Dunn = **M. chrysophylla**
madagascariensis Vatke = **Philenoptera**
melanoxylon Dunn = **Millettia chrysophylla**
micrantha Harms = **Ostryocarpus riparius**
monophylla Harms = **Eriosema ellipticum** subsp. **ellipticum**
porphyrocalyx Dunn = **Millettia warneckei** var.
pyrifolia Vatke = **Baphia kirkii**
rooseveltii De Wild. = **Andira inermis** subsp.
rubra De Wild. = **Millettia drastica**
sanagana sensu Hepper p.p. = **M. liberica**
scott-elliotii Dunn = **M. warneckei**
seretii De Wild. = **M. drastica**
solheidii De Wild. = **M. dubia**
stapfiana Dunn = **M. zechiana**
sutherlandii Harv. = **Philenoptera**
tessmannii Harms = **Millettia laurentii**
urophylla Welw. ex Bak. = **M. barteri**
vanderystii De Wild. = **M. vankerckhovenii**
vermoesenii De Wild. = **M. comosa** var.
yangambiensis De Wild. = **M. elskensii** var.
zenkeriana Harms = ? **Ostryocarpus zenkerianus**

MUCUNA / *10*

Fruits and seeds are crucial for identification.

Mucuna coriacea Bak., excl. var. *glabrialata* Hauman (= **M. glabrialata)**.

syn.: *M. rhynchosioides* Taub. (of subsp. **coriacea)**.

Climbing or trailing herb or liane from a thick rhizome; stems 3-4,5 m long, densely to sparsely covered with appressed or spreading rusty hairs; leaflets thick; flowers to 4 cm long, pale maroon to purple or black, calyx golden-hairy, keel with horny beak; pod curved with irritant bristles.

Grassland with scattered *Protea* and *Dombeya, Brachystegia,* and *Uapaca-Julbernardia* woodlands, edges of coconut plantations; climbing over shrubs and amongst tall grasses, in riverine and thicket vegetation, on evergreen forest margins, also in *Pinus* and sisal plantations (subsp. **irritans** 10-1450 m alt); 10-1800 m alt. (900-1800 m in E Africa). – Locally common in high rainfall areas.

Variable in density of indumentum on leaves [in subsp. **coriacea** hairs hiding leaf surface, in subsp. **irritans** (Burtt Davy) Verdc. not entirely so], and in size of corolla.

S. Africa, Swaziland, Botswana.

Comprises 2 subspp. not well separated; intermediates occur.

M. ferox Verdc.

Liane with striate blackish stems covered with pale spreading hairs; inflorescence long, silvery hirsute with 50-100 large greenish-white flowers; pod (S-shaped to) curved, with dense golden-brown irritant bristles.

Afromontane evergreen rain-forest; plants climbing up in trees along small stream; 450-1560-1680 m alt.

Flowers and foliage *very* similar to those of *M. poggei* var. *pesa,* and confusion possible without fruits.

M. flagellipes T. Vogel ex Hook. f.

Large woody liane; stems glabrous, 2-3-lobed, to 12 m long and 3 cm Ø at base; inflorescence axis zigzag, c. 20 cm long with grey-silky bracts; calyx appressed hairy and with orange-brown bristles; flowers large, cream or greenish white; pod long, broad, with transverse wing-like ridges, with dense reddish-brown irritant hairs. Plant turning black on drying.

Riverine and swamp forests, on islands in rivers, edges of mangrove; 1-600 m alt (W Africa); ± 1400 m (Uganda).

Bioko/Fernando Poo.

Seeds are used in games.

M. gigantea (Willd.) DC. subsp. **gigantea –** Icon.: Fl. Pl. Africa 50(2): pl. 1998, 1989.

bas.: *Dolichos giganteus* Willd.

syn.: *Carpopogon giganteus* (Willd.) Roxb.; *Stizolobium giganteum* (Willd.) Spreng.; *Mucuna toyoshimai* Nakai; *M. grevei* Drake; Enum. 2: 106, 1992.

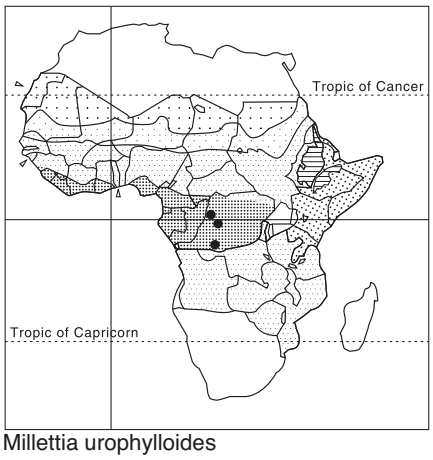
Large liane 8-15-30 m long; stems smooth or longitudinally grooved, 7-20 cm Ø at base, covered with stiff orange-brown hairs (like calyx and pod); old stems wrinkled, glabrescent; leaves to 27 cm long, glabrous; inflorescence a hanging panicle, often borne on lower older stems; flowers 3,5 cm long, pinkish or greenish white; pod long, thick, densely hairy (very irritant), with 2 wings 1 cm wide.

Bushland, forest edges, riverine and coastal moist forests, coastal scrub, river banks; usually by water; often extending to the foreshore; 0-300 m (coast), 850-1800 m alt. (0-10 m in Fl. Zambes. area).

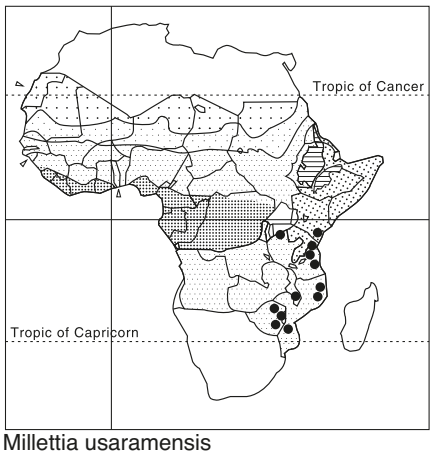
Very variable species throughout its range; it seems impossible to retain the African subsp. *quadrialata* (Bak.) Verdc. with large flowers.

S. Africa (Natal); Madagascar; Comoros, Seychelles, Mascarene Isl.; India, Burma, Indochina, Malay Peninsula and Islands; Papua New Guinea; Philippines; Japan; Australia; Pacific Isl. (map by Tateishi & Ohashi in Bot. Mag. Tokyo 94: 94, 1981). – Dispersion by sea.

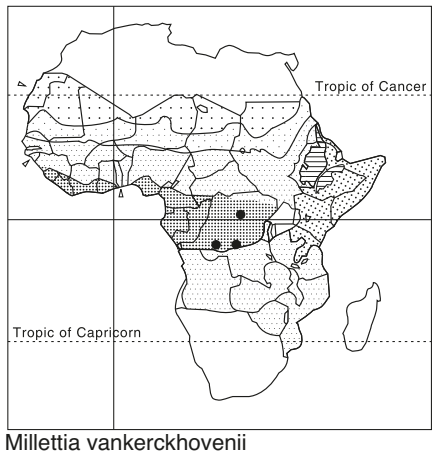
Other subspecies in Taiwan, New Guinea, Australia.



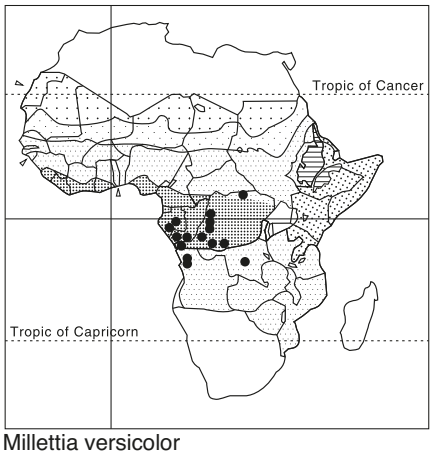
Millettia urophylloides



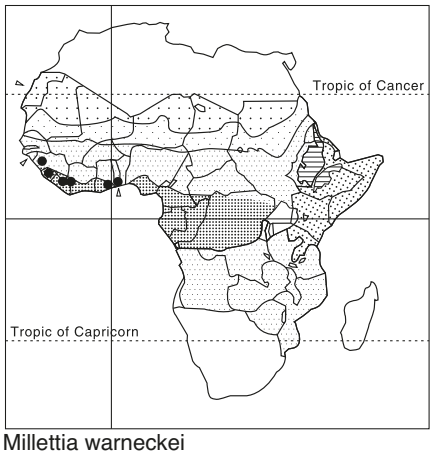
Millettia usaramensis



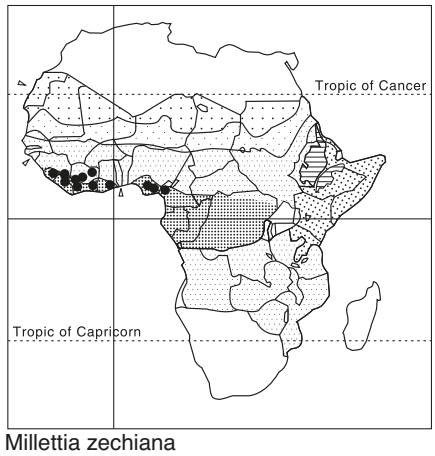
Millettia vankerckhovenii



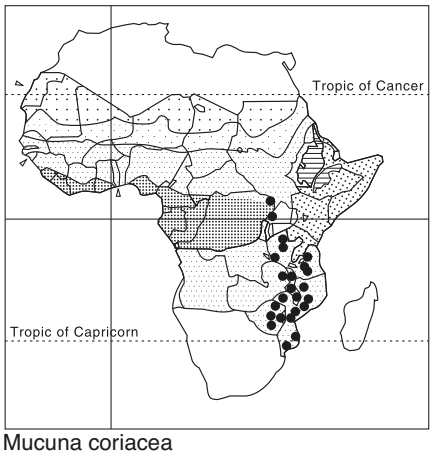
Millettia versicolor



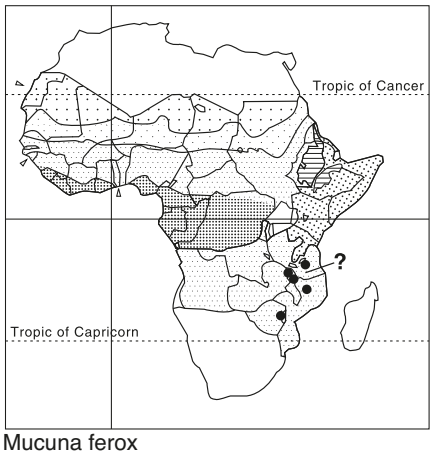
Millettia warneckei



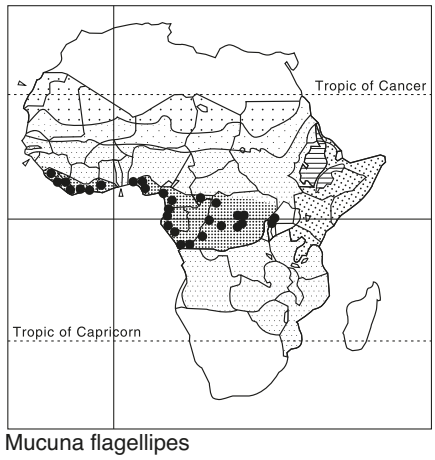
Millettia zechiana



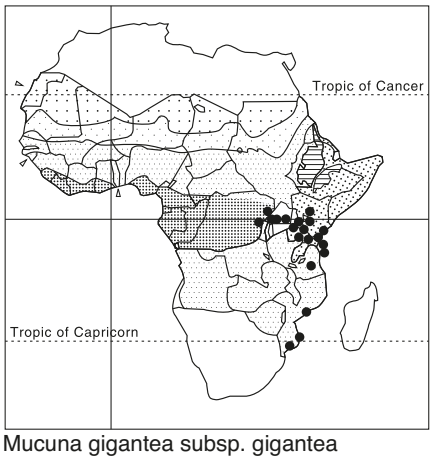
Mucuna coriacea



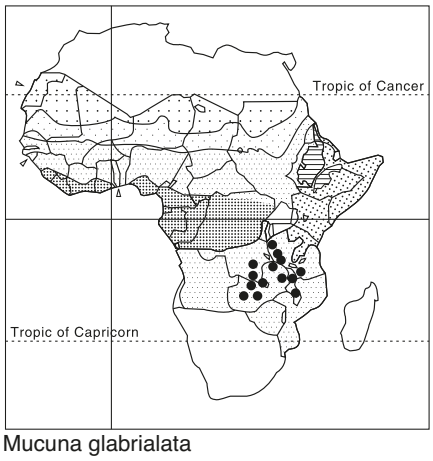
Mucuna ferox



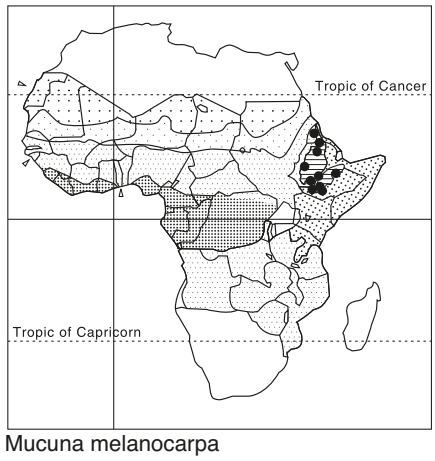
Mucuna flagellipes



Mucuna gigantea subsp. gigantea



Mucuna glabrialata



Mucuna melanocarpa

MUCUNA

M. glabrialata (Hauman) Verdc.

Climbing herb, robust, to 3 m long; stems glabrescent or sparsely appressed fulvous hairy (also calyx and pod), particularly at nodes; leaflets thick, drying blackish; flowers large, almost black; pod densely irritant-hairy, sigmoid.

Brachystegia-Uapaca woodland; savanna; *Julbernardia* scrub; riverine and thicket vegetation scrambling over shrubs and amongst grasses; 610-1800 m alt.

Similar to **M. coriacea** but flower wings glabrous, and leaflets glabrescent.

M. melanocarpa Hochst. ex A. Rich., incl. var. *somalensis* Taub. ex Harms

Climber to at least 10 m long; stems pubescent; leaves sparsely pubescent to densely appressed silvery pilose beneath; inflorescence pendulous; calyx and pod with irritant orangered bristles; pod longitudinally ribbed, S-shaped.

Woodland, forest margins, scrub; 1400-2100 m alt. and more (record by Puff & Sileshi, from Simen Mts: Syst. Geogr. Pl. 71: 982, 2002).

M. poggei Taub.

syn.: *M. rubro-aurantiaca* De Wild. (of var. **poggei)**; *Stizolobium poggei* (Taub.) Hiern

Large liane 10-20 m long; stems glabrous or pubescent, to 20 cm Ø; lateral leaflets very asymmetrical; inflorescence long, pendulous; flowers greenish-white or yellowish, 4-9 cm long; pod indehiscent, round (when 1-seeded) or oblong, not winged, with orange irritant hairs (also calyx).

Brachystegia-Uapaca woodland, edges of evergreen forest (remnants), *Phragmites* grassland (Fl. Zambes. area); secondary transitional forest with *Harungana madagascariensis,* forest edge (Sudan, Imatong Mts); riverine forest, *Papyrus* swamps, river banks, swamp forest; bushland, thicket; palm *(Elaeis guineensis)* groves along river (Angola); 360-1800(-1950) m alt.

Variable in indumentum of leaflets and lenght of corolla.

Comprises 4 vars. (var. **occidentalis** Hepper in W part of range to Centr. Afr. Rep.).

Flowering specimens (without fruit) are *very* similar to **M. ferox.**

M. pruriens (L.) DC. var. **pruriens**

bas.: *Dolichos pruriens* L.

syn.: *Stizolobium pruriens* (L.) Medik.; *Mucuna prurita* Hook., nom. illegit. superfl.; *M. bernieriana* Baill.; *M. axillaris* Bak.; *M. esquirolii* H. Lév.; for complete synonymy, See Wilmot-Dear in Kew Bull. 39: 61-63, 1984.

Slender climbing semi-woody herb 1-6 m long, sometimes stated to climb to the top of tall trees, usually annual or short-lived perennial; stems sparsely hairy or glabrous; leaflets thin, variable in size (5-19x4-17 cm); inflorescence large, silvery pubescent, long (to 40 cm); flowers small, dark purple to pale lilac or white; pod fleshy, S-shaped, velvety hairy and with brown to reddish-orange irritant bristles, longitudinally ribbed under the hairs.

Sterculia-Adansonia woodland, edges of *Brachystegia* woodland, river banks, lake shores, pan margins, waste places, edges of cultivation; *Acacia* thicket; coarse grassland, grassland with scattered trees, bushland, riverine forest, abandoned cultivations (E Africa); 0-1900 m alt.

MUCUNA PRURIENS VAR. PRURIENS

S. Africa (Natal); Madagascar, Comoros, Mascarenes, Mauritius, tropical Asia incl. Arabia, China, SE Asia, Malaysia (map, Wilmot Dear in Kew Bull. 47: 238, 1992); tropical America.

Other varieties occur in SE Asia, the Philippines.

Not in Ethiopia; earlier records are based on misidentified specimens of **M. melanocarpa,** but var. **utilis** cultivated in a few places.

[var. **utilis** (Wall. ex Wight) Bak. ex Burck] – Velvet Bean.

bas.: *Mucuna utilis* Wall. ex Wight

syn.: *Stizolobium utile* (Wall. ex Wight) Piper & Tracy; *S. deeringianum* Bort; *S. niveum* (Roxb.) O. Kuntze; *Mucuna taborensis* Schweinf. ex Piper; *M. lyonii* Merr.; *M. capitata* Sweet nom. nud.; *Carpopogon capitatus* Roxb.; *Mucuna capitata* Wight & Arn.; *Negretia mitis* Blanco; *Marcanthus cochinchinensis* Lour.; Enum; 2: 106, 1992.

Very similar to var. **pruriens,** but with complete absence of irritant bristles, most obvious in the pod (glabrous, velvety hairy or with black woolly hairs). Only known cultivated. Grown widely in tropical Africa for green manure and stock feed.

M. sloanei Fawcett & Rendle var. **sloanei –** Icon.: Wilmot-Dear in Kew Bull. 45: 26, 1990.

syn.: *M. urens* auctt. flor. afric., non (L.) Medik.; *Stizolobium urens* sensu Hiern, non Pers.; *Dolichos urens* Jacq. 1763, non L.

Woody climber 6-8 m long; young stems and petioles appressed white long-hairy or glabrescent; inflorescence devoid of bracts, with flowers crowded at apex; corolla bright yellow, long; pod extremely swollen around seeds, with dense spreading hairs and irritant red bristles, and with obliquely transverse ridges. – All parts blacken on drying.

Savanna woodland, deciduous forest, secondary jungle, often in damp sites; seasonally flooded forest, river banks with *Alchornea,* islands in rivers, gallery forest; 1-200 m alt. (Cameroon).

Bioko/Fernando Poo, Annobón; pantropical.

Var. **persericea** Wilmot-Dear in Hawaiian Isl.

Also cultivated (young fruits and seeds used in Nigeria).

M. stans Welw. ex Bak.

syn.: *M. erecta* Bak.; *M. homblei* De Wild.; *Stizolobium stans* (Welw. ex Bak.) O. Kuntze

Woody herb, erect much-branched shrub or subshrub 1-2,4 m tall from a stout fibrous rootstock; stems golden hairy, later glabrous; leaflets thick; inflorescense short, golden hairy; flowers dark purple-black, keel dark or white; pod with dense black or golden somewhat irritant bristles. – An erect analogue of *M. coriacea.*

Grassland, bushland, grassland with scattered trees, burnt savanna; also old cultivations; high rainfall *Brachystegia-Uapaca-Protea* woodland (Fl. Zambes. area); rocky thickets, near watercourses, sometimes abundant (Zaire, Angola); 1100-1800 m alt.

Variants with leaves woolly beneath (similar to those of *M. coriacea* subsp. *irritans)* exist.

SYNONYMS:

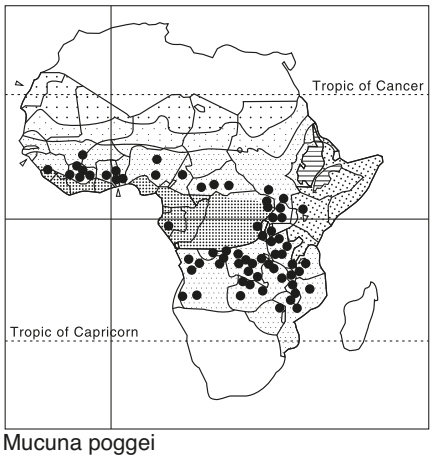
Mucuna axillaris Bak. = **Mucuna pruriens** var. **pruriens**

bernieriana Baill. = **M. pruriens** var. **pruriens**

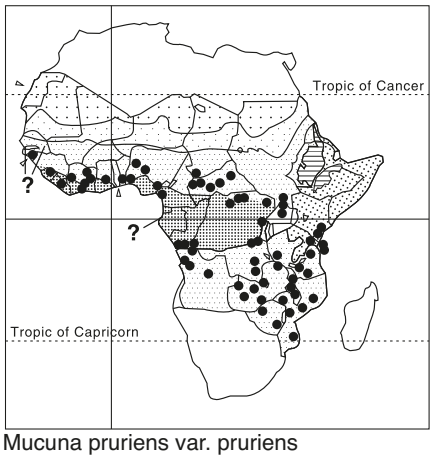
capitata Sweet, nom. nud. = **M. pruriens** var. **utilis**

capitata Wight & Arn. = **M. pruriens** var. **utilis**

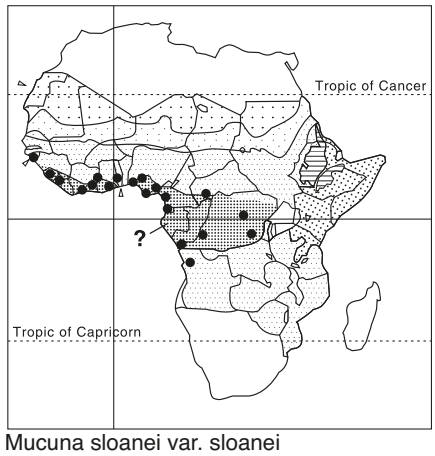
cochinchinensis (Lour.) A. Chev. = **M. pruriens** var. **utilis**



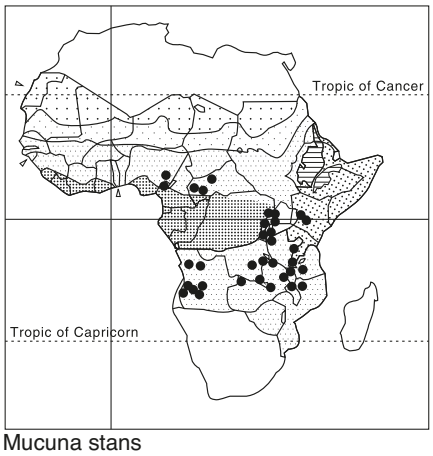
Mucuna poggei



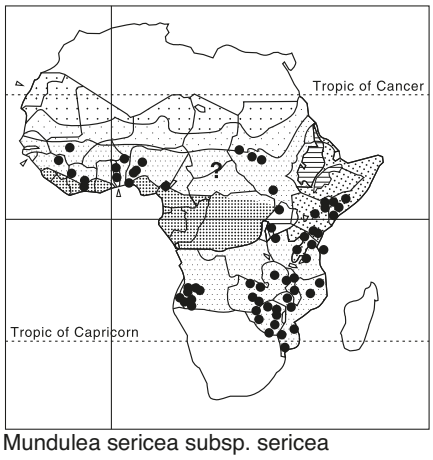
Mucuna pruriens var. pruriens



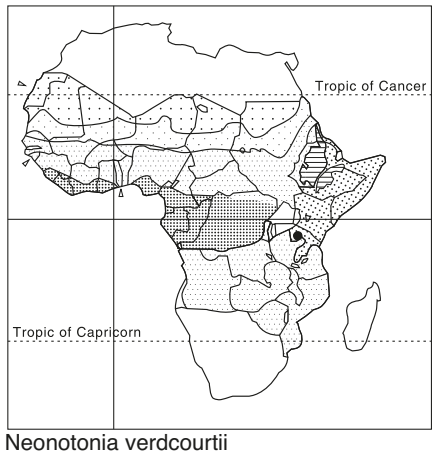
Mucuna sloanei var. sloanei



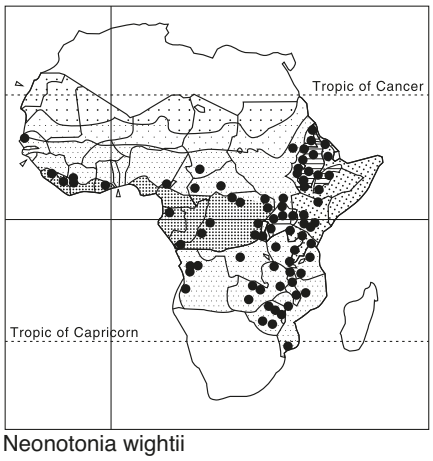
Mucuna stans



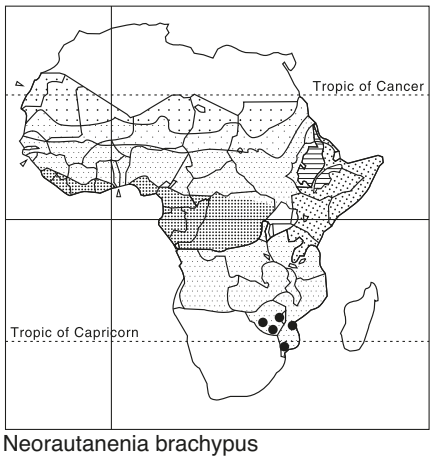
Mundulea sericea subsp. sericea



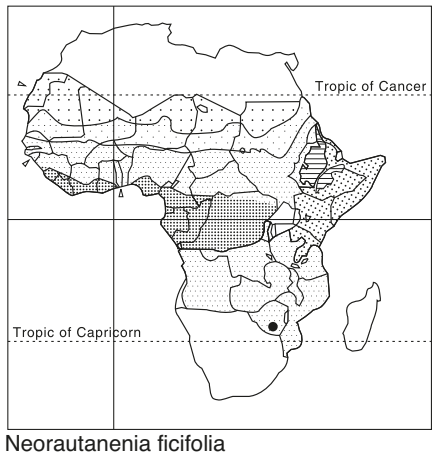
Neonotonia verdcourtii



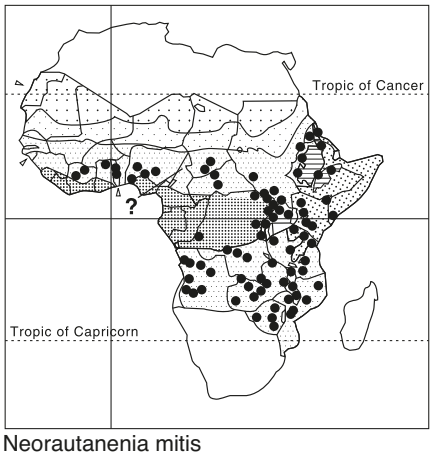
Neonotonia wightii



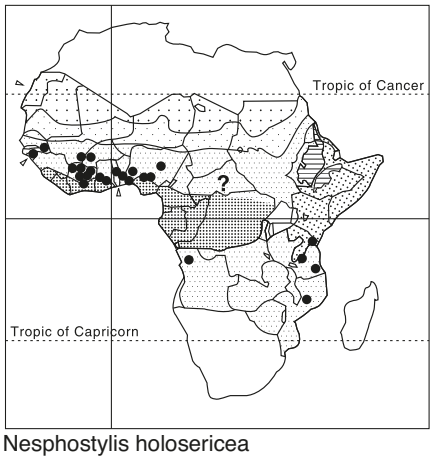
Neorautanenia brachypus



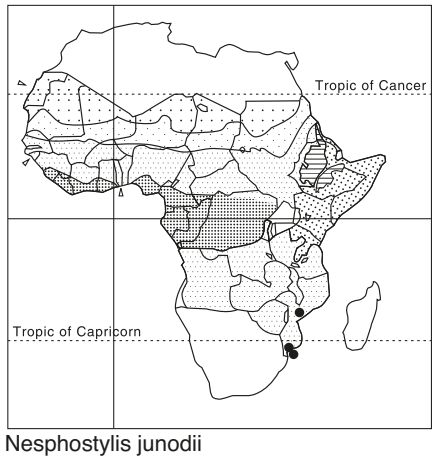
Neorautanenia ficifolia



Neorautanenia mitis



Nesphostylis holosericea



Nesphostylis junodii

comorensis Vatke = **Psophocarpus scandens**

coriacea Bak. var. *glabrialata* Hauman = **Mucuna glabrialata**

cylindrosperma Welw. ex Bak. = **Physostigma**

deeringiana (Bort) Merr. = **Mucuna pruriens** var. **utilis**

erecta Bak. = **M. stans**

esquirolii H. Lév. = **M. pruriens** var. **pruriens**

gigantea (Willd.) DC. subsp. *quadrialata* (Bak.) Verdc. = **M. gigantea** subsp. **gigantea**

grevei Drake = **M. gigantea** subsp. **gigantea**

homblei De Wild. = **M. stans**

irritans Burtt Davy = **M. coriacea** subsp.

longipedicellata Hauman = **M. gigantea** subsp. **gigantea**

lyonii Merr. = **M. pruriens** var. **utilis**

nivea (Roxb.) Wight & Arn. = **M. pruriens** var. **utilis**

pesa De Wild. = **M. poggei** var. **pesa**

var. *glabrescens* Hauman = **M. poggei** var. **glabrescens**

prurita Hook., nom. illegit. superfl. = **M. pruriens** var. **pruriens**

quadrialata Bak. = **M. gigantea** subsp. **gigantea**

rhynchosioides Taub. = **M. coriacea** subsp. **coriacea**

rubro-aurantiaca De Wild. = **M. poggei** var. **poggei**

sp. 1 sensu White, Forest Fl. N. Rhod. = **M. glabrialata**

taborensis Schweinf. ex Piper = **M. pruriens** var. **utilis**

toyoshimai Nakai = **M. gigantea** subsp. **gigantea**

urens auctt., non (L.) Medik. = **M. sloanei** var. **sloanei**

utilis Wall. ex Wight = **M. pruriens** var. **utilis**

Stizolobium deeringianum Bort = **Mucuna pruriens** var. **utilis**

giganteum (Willd.) Spreng. = **Mucuna gigantea** subsp. **gigantea**

niveum (Roxb.) O. Kuntze = **M. pruriens** var. **utilis**

poggei (Taub.) Hiern = **M. poggei**

pruriens (L.) Medik. = **M. pruriens**

stans (Welw. ex Bak.) O. Kuntze = **M. stans**

urens sensu Hiern, non Pers. = **M. sloanei** var. **sloanei**

utile (Wall. ex Wight) Piper & Tracy = **M. pruriens** var. **utilis**

MUNDULEA / *1*

A genus of 12 species in Madagascar and one in Africa.

Mundulea sericea (Willd.) A. Chev. subsp. **sericea**

bas.: *Cytisus sericeus* Willd.

syn.: *Tephrosia suberosa* DC.; *Mundulea suberosa* (DC.) Benth.; *Tephrosia petersiana* Klotzsch

Small bushy semi-deciduous tree or large shrub 1-8 m tall; stem straight with a bushy crown; bark corky, smooth or fissured, often yellowish; young stems, stipules, leaf-rachis, inflorescence and pod velvety silky; flowers large, bluish-purple in terminal pseudo-racemes; pod linear, often constricted between the seeds, not or very tardily dehiscent. – Has the habit of a *Sophora* or *Millettia.*

Open places in lowland evergreen forest and bushland, rocky hills in deciduous woodland, deciduous bushland and thicket; locally common but absent from large areas; 0-1950 m alt. (E. Africa); rocky places or on (wooded) dunes; up to 300 m (Somalia); lowland plain and savanna, 900-1980 m (Jebel Marra, Sudan); on rocky and hilly ground in high rainfall savanna areas (Sudan); along rivers and streams of the savanna zone (W Africa); sparingly in sandy thickets at river banks in company with thorny plants; c. 550-600 m (Angola); *Combretum-Pteleopsis-Xeroderris, Acacia-Commiphora-Dichrostachys, Colophospermum-Combretum* woodland; *Baikiaea* forest; 0-1980 m alt.

Namibia, Botswana, Swaziland, S. Africa; India, Sri Lanka.

Subsp. **madagascariensis** Du Puy & Labat in Du Puy & al., Legumin. Madag.: 423, 2002, in Madagascar.

The natural range has been greatly extended owing to cultivation as a fish poison. Also cultivated elsewhere in the tropics.

NEONOTONIA / *2*

syn.: *Glycine* L. p.p.

Neonotonia verdcourtii Isely in Iowa State J. Res. 55(2): 157-162, 1980.

syn.: *Glycine* sp. A sensu Verdcourt in Fl. Trop. E. Afr., Legumin. 4, Papil. 2: 533, 1971.

Woody perennial climber or trailer 2-5 m long or more; stems branched, velvety-villous; first year stems and upper parts of older plants herbaceous; leaves 3-foliolate, velvety, leaflets 4-10 × 2-5 cm; inflorescences axillary from upper small leaves, c. 20-flowered, flowers in cymose clusters; corolla white- or yellowish-tinted with conspicuous purple spots, standard c. 7-8 mm long; pod oblong, compressed, c. 2x0,5 cm, villous, constricted between the seeds, dehiscent, 2-4-seeded.

Grassland with scattered *Protea,* etc.; along river; c. 1500-1900 m alt.

First known from only 2 collections made by Peter in 1926, both in fruit with a few remaining petals. Final description made on plants grown from a single seed of one of the these gatherings, then the seedling propagated vegetatively, at Ames, Iowa (USA). Other specimens known were collected at the Ngorongoro Crater (Tanzania) in 1941 and 1966.

N. wightii (Wight & Arn.) Lackey

bas.: *Notonia wightii* Wight & Arn.

syn.: *Johnia wightii* (Wight & Arn.) Wight & Arn.; *Glycine wightii* (Wight & Arn.) Verdc.

Perennial climber or trailer, often woody at base 0,6-4,5-6 m long; rootstock often thick and woody; stems glabrescent to densely velvety with usually ferruginous hairs; flowers small, white (with mauve blotch inside) or mauve-blue.

Grassland; grassland with scattered trees; scrub; thicket; woodland; sometimes in cultivations; forest; bushland; secondary grassland; riparian vegetation; niayes; evergreen forest edges; regrowth; fallows; footpath sides; *Cedrela* plantation with regenerating mixed woodland of *Combretum collinum, Stereospermum kunthianum, Acacia hockii, Albizia grandibracteata* on ground with rocky outcrops; upland rain-forest with *Albizia, Macaranga, Croton, Ocotea* forest edge; clearing in *Cupressus lusitanica* plantation with regrowth of *Albizia-Croton-Macaranga* forest (Sudan, Imatong Mts.); 0-2800 m alt.

NEONOTONIA WIGHTII

S. Africa, Swaziland ; Arabia (subsp. **wightii** var. **longicauda)**. – India, Sri Lanka, Malaya, Java (subsp. **wightii** var. **wightii)**.

Comprises 3 subspp. incl. vars.: – subsp. **petitiana** (A. Rich.) Lackey [bas.: *Johnia petitiana* A. Rich.; syn.: *Glycine petitiana* (A. Rich.) Schweinf.; *G. wightii* subsp. *petitiana* (A. Rich.) Verdc.]; with var. **petitiana** [syn.: *G. petitiana* var. *dembianensis* Chiov.] and var. **mearnsii** (De Wild.) Lackey [bas.: *G. mearnsii* De Wild.; syn.: *G. javanica* L. var. *mearnsii* (De Wild.) Hauman ; *G. javanica* sensu Hauman in Fl. Congo Belge 6 : 93, 1954 ; *G. wightii* subsp. *petitiana* var. *mearnsii* (De Wild.) Verdc.]. – subsp. **pseudojavanica** (Taub.) Lackey [bas.: *Glycine pseudojavanica* Taub.; syn.: *G. javanica* L. subsp. *pseudojavanica* (Taub.) Hauman ; *G. javanica* sensu Hepper in F.W.T.A., Ed. 2, 1: 564, 1958 ; *G. wightii* subsp. *pseudojavanica* (Taub.) Verdc.] with var. **pseudojavanica ;** – subsp. **wightii** var. **longicauda** (Schweinf.) Lackey [bas.: *Glycine longicauda* Schweinf.; syn.: *G. wightii* subsp. *wightii* var. *longicauda* (Schweinf.) Verdc.; ? *Bujacia anonychia* E. Mey.; ? *Glycine bujacia* Benth.; *G. micrantha* Hochst. ex A. Rich.; *G. moniliformis* Hochst. ex A. Rich.; *G. claessensii* De Wild.; *G. albidiflora* De Wild.; *G. javanica* L. var. *longicauda* (Schweinf.) Bak.; *G. javanica* sensu Bak. in F.T.A. 2 : 178, 1871 ; *G. javanica* L. var. *claessensii* (De Wild.) Hauman ; *G. javanica* subsp. *micrantha* (Hochst. ex A. Rich.) F. J. Hermann, and var. *claessensii* (De Wild.) Hauman, and var. *longicauda* (Schweinf.) Bak., and var. *moniliformis* (Hochst. ex A. Rich.) F. J. Hermann].

NEORAUTANENIA / *3*

syn.: *Dolichos* L. sect. *Pseudopachyrhizus* Harms

A genus confined to tropical and southern Africa. About twenty species have been described, but intermediates occur especially in the Fl. Zambes. area. It is considered reasonable to accept three species (fide Verdcourt in Fl. Zambes. 3/5 : 80, 2001).

Neorautanenia brachypus (Harms) C. A. Smith

bas.: *Dolichos brachypus* Harms

syn.: *D. seineri* Harms ; *Galactia lugardii* N. E. Br.; *Pueraria rogersii* L. Bol.; *Neorautanenia coriacea* C. A. Smith ; *N. edulis* C. A. Smith ; *N. lugardii* (N. E. Br.) C. A. Smith ; *N. seineri* (Harms) C. A. Smith ; *N. rogersii* (L. Bol.) C. A. Smith ; *N. amboensis* auct. non Schinz p.p.

Herb or shrublet, mostly erect, 0,4-1 m tall, from a large underground tuber to 45 cm Ø ; young stems and foliage densely appressed silvery-grey silky ; older stems pale yellow-brown, ± glabrescent ; flowers dark blue or mauve (rarely yellow).

Low rainfall areas in open grassland, wooded grassland, floodplain tall grassland, on sandy soils and Kalahari sand ; and in grassland with *Burkea, Combretum zeyheri, Terminalia sericea, Acacia* etc., *Acacia-Combretum*-mopane and *Acacia-Terminalia* woodland ; 100-1390 m alt.

S. Africa, Namibia, Botswana.

Intermediates with **N. mitis** occur.

N. ficifolia (Benth. ex Harv.) C. A. Smith (as “ficifolius”).

bas.: *Rhynchosia ficifolia* Benth. ex Harv.

syn.: *Pueraria ficifolia* (Benth. ex Harv.) L. Bol.; *Dolichos ficifolius* (Benth. ex Harv.) Harms ; *Neorautanenia desertícola* C. A. Smith

NEORAUTANENIA FICIFOLIA

Prostrate trailing plant from an extensive rootstock ; stems branched or unbranched, c. 1,5 m long, pubescent with ± appressed or spreading, stiff hairs, or typically densely hirsute ; inflorscence densely woolly ; flowers purple.

Low rainfall *Terminalia sericea-Acacia giraffae* wooded grassland with *Anthephora, Brachiaria, Schmidtia,* etc.; 1030 m alt.

Botswana, S. Africa, Namibia.

Material in Fl. Zambes. area not typical for the species and specimens examined are intermediate in character (fide Verdcourt in Fl. Zambes. 3/5 : 76, 2001).

N. mitis (A. Rich.) Verdc.

syn.: *Dolichos pseudopachyrhizus* Harms, incl. var. *subintegrifolius* Harms and var. *kilimandschari* Harms ; *D. ellenbeckii* Harms ; *D. orbicularis* (Welw. ex Bak.) Bak. f.; *Pueraria hochstetteri* Chiov.; *Pachyrhizus* ? *orbicularis* Welw. ex Bak.; *Cacara orbicularis* (Welw. ex Bak.) Hiern ; *Neorautanenia orbicularis* (Welw. ex Bak.) Torre ; *N. pseudopachyrhiza* (Harms) Milne-Redh., incl. var. *ellenbeckii* (Harms) Cufod.; *N. amboensis* Schinz

Subshrubby herb, erect, climbing, scrambling or entirely prostrate, 0,9-2,4(-10,8) m long ; rootstock tuberous, often conical, frequently more than 40 cm Ø und with weight of 10-15 kg ; stems glabrous to velvety, sometimes flowering just before the leaves are fully expanded ; leaves characteristically *long-petiolate,* petiole much longer than rhachis ; flowers mauve or bluish-violet with green centre, keel sometimes greenish.

Grassland, bushland, (open) woodland, often in rocky places (Ethiopia, E. Africa), *Brachystegia, Acacia-Terminalia, Acacia-Combretum,* mopane and chipya woodlands on Kalahari sand, bushland with scattered trees, grassland, old cultivations, often on dambo margins and in rocky places (Fl. Zambes. area) ; near sea level -1800(-2000) m alt.

Caprivi Strip, Namibia, Botswana, S. Africa.

SYNONYMS :

Neorautanenia amboensis Schinz, incl. var. *ellenbeckii* (Harms) Cufod. = **Neorautanenia mitis**

amboensis sensu auctt. = **N. brachypus**

coriacea C. A. Smith = **N. brachypus**

deserticola C. A. Smith = **N. ficifolia**

edulis C. A. Smith = **N. brachypus**

lugardii (N. E. Br.) C. A. Smith = **N. brachypus**

orbicularis (Welw. ex Baker) Torre = **M. mitis**

pseudopachyrhiza (Harms) Milne-Redh. = **N. mitis**

rogersii (L. Bolus) C. A. Smith = **N. brachypus**

seineri (Harms) C. A. Smith = **N. brachypus**

NESPHOSTYLIS / *2*

The genus includes two other species, one in India and one in Burma.

Nesphostylis holosericea (Welw. ex Bak.) Verdc.

syn.: *Vigna hastifolia* Bak.; *Sphenostylis kerstingii* Harms; *S. holosericea* (Welw. ex Bak.) Harms, incl. var. *hastifolia* (Bak.) Bak. f.; *S; calantha* Harms

Perennial climbing or twining herb 1-3 m long of vigorous growth; stems and leaves densely covered with spreading whitish silky hairs; root tuberous; inflorescence 1-flowered; corolla large showy blue or pruple, scented (closing in the afternoon).

Disturbed ground formerly under *Brachystegia* woodland, grassland, bushland and old cultivations; in bushy places at river banks, by thickets (Angola); lateritic plateau, savanna, amongst long grass, common (W Africa); 0-1200 m alt. (150-1200 m in Mozambique).

Disjunct distribution

N. junodii (Harms) Munyunyembe & Bisby

bas.: *Vigna junodii* Harms

syn.: *Dolichos junodii* (Harms) Verdc.

Prostrate or twining herb 30-60 cm long with appressed or deflexed hairy stems sometimes rooting at the nodes and arising from a narrow tuber c. 25 cm long; inflorescence 1-flowered; corolla pink or magenta.

Amongst grasses on pan margins, in sandy soil beside rivers; 0-900 m alt.

Botswana, Namibia, S. Africa.

In recent floras, e.g. B. Mackinder in Fl. Zambes. 3/5: 102, 2001, the species is treated under **Dolichos** owing to its general habit (in the affinity of *D. trilobus)* but in spite of i.a. the structure of the pollen resembling that of *Nesphostylis* (Kew Bull. 52: 690, 1997).

ONOBRYCHIS / *1*

A genus of c. 100 species mainly Mediterranean and W Asiatic. One species in Ethiopia: colour of flowers and ecology unknown; and only known from the type.

Onobrychis richardii Bak.

syn.: *O. eriophora* A. Rich. 1847, non Desv. 1814.

Erect herb c. 40 cm tall with densely white-pubescent stem; leaflets silky pilose; pod woolly, suborbicular, spiny on the edge and on both faces. – Colour of flowers?

Ecology unknown.

Known only from the type collected in 1844 (Petit s.n.).

[O. viciifolia Scop.]

syn.: *O. vulgaris* Gueldenst.; *O. sativa* Lam.

Subglabrous to pubescent perennial herb 10-80 cm tall with pink flowers; introduced and naturalized in N Ethiopia at 2200-2300 m alt.

Probably native of SE Europe-W Asia.

Not mapped.

SYNONYMS:

Onobrychis cuneifolia (Roth) DC. = **Taverniera cuneifolia**

simplicifolia R. Br., nom. nud. = **T. abyssinica**

ONONIS / *5*

A mainly Mediterranean genus of about 70 species.

Ononis hesperia (Maire) Förther & Podl. – Icon.: Mitt. Bot. Staatssamml. München 30: 242, 1992 [1991].

bas.: *O. natrix* L. subsp. *hesperia* Maire

syn.: *O. natrix* subsp. *hispanica* (L. f.) Coutinho subvar. *canariensis* Širj.

Densely branched dwarf shrub or suffrutex with woody base 5-35 cm tall; stem and lower branches with fissured light brown bark, with short internodes, densely leafy, covered with hairs and glands; peduncles 1-flowered, aristate; corolla yellow veined purple; pod pendent.

Only near the coast on sand; 0-150 m alt.

E Canary Isl., SW Morocco.

O. reclinata L., incl. subsp. *mollis* (Savi) Béguinot and var. *minor* Moris

syn.: *O. mollis* Savi; *O. reclinata* var. *mollis* (Savi) Halácsy; *O. desfontainii* L. M. Dufour ex DC.; *O. inclusa* Bertol.; *O. pilosa* Bartl. & J. C. Wendl.

Erect of procumbent villous and glandular-hairy annual herb 2-15 cm tall; peduncles 1-flowered, not aristate; corolla pink or purple; pod pendent.

Grassland; 1600-2500 m alt. (Ethiopia); mountainous steppe and meadow; c. 1500 m (Djibouti).

Canary Isl.; Europe north and west to Wales; Mediterranean region; Egypt to Iran.

O. serrata Forssk., incl. var. *minor* Willk.

syn.: *O. glaucescens* Pomel; *O. marmorata* Murb.

Decumbent to ascending-erect glandular-hairy annual herb to 4-40 cm tall; corolla slightly longer than calyx (persistent), pink with a white keel.

Cited by e.g. J. G. Adam (J. Agric. Trop. Bot. Appl. 9: 365, 1962) as a north-Saharan and littoral element. Ecology?

Canary Isl.; SW Europe; N Africa; E Mediterranean region; Egypt, Sinai, Arabia to Iraq, Iran.

O. sicula Guss. – Icon.: Thulin, Fl. Somal. 1: 465, 1993.

syn.: *O. viscosa* L. subsp. *sicula* (Guss.) Hub.-Mor.; *O. viscosa* var. *sicula* (Guss.) Fiori; *O. leptocarpa* Pau

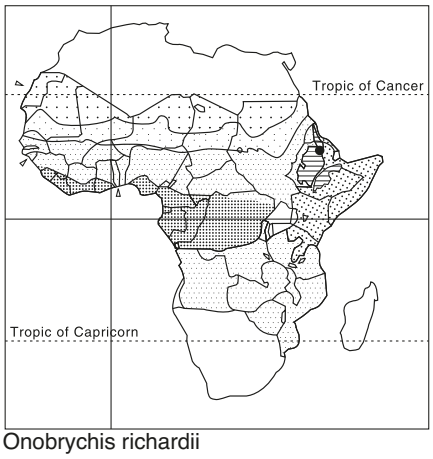
Annual herb 5-30 cm tall, covered with long spreading hairs and fine glands; stems erect or ascending; flower peduncles aristate; corolla yellow, shorter than calyx; pod pendent, many-seeded.

Clayey- sandy or clayey grara, cultivated or not, with *Euphorbia balsamifera, E. echinus* (Western Sahara); gravelly limestone slope; 1150 m alt. (Somalia).

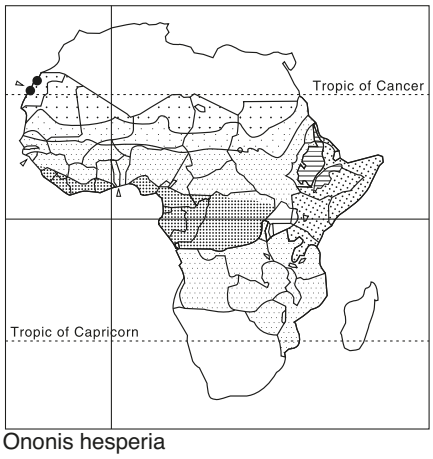
Canary Isl.; Mediterranean region, Turkey, Egypt, Sinai, eastwards via Arabia to Iraq, and Iran.

O. tournefortii Cosson, incl. var. *ifniensis* Caball. and var. *microsperma* Maire – Icon.: S. Castroviejo, Fl. Iber. 7(2): 616, 2000.

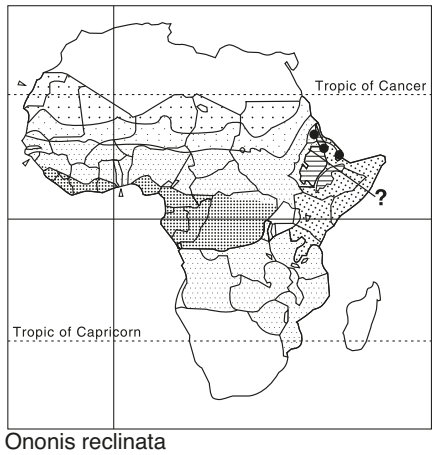
syn.: *O. serrata* Forssk. var. *major* Lange; *O. diffusa* Ten. subsp. *tournefortii* (Cosson) Malag.; *O. littoralis* Vahl ex Lange 1865, non Moris ex Spreng. 1827; *Bugranopsis tournefortii* (Cosson) Pomel; *Ononis schousboei* Pitard



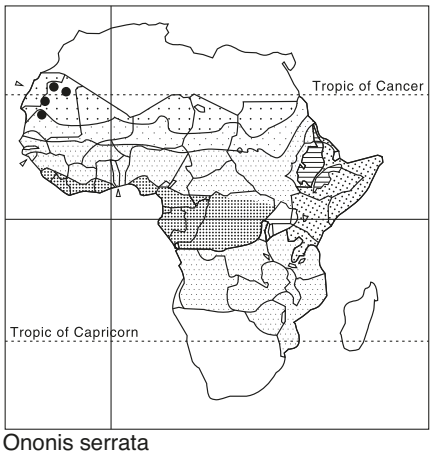
Onobrychis richardii



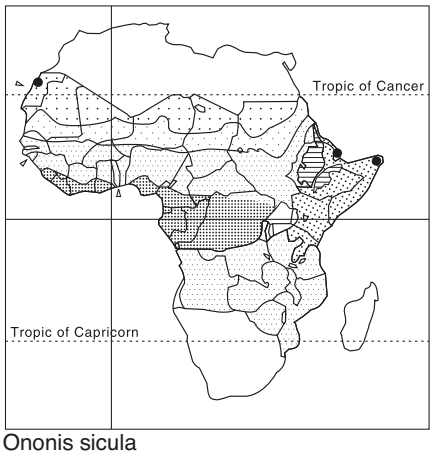
Ononis hesperia



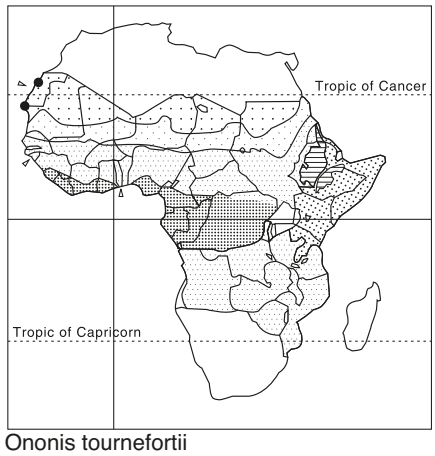
Ononis reclinata



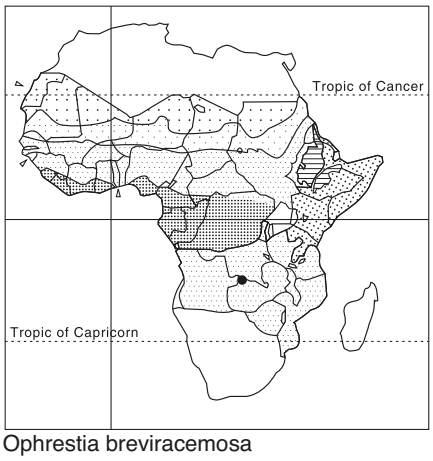
Ononis serrata



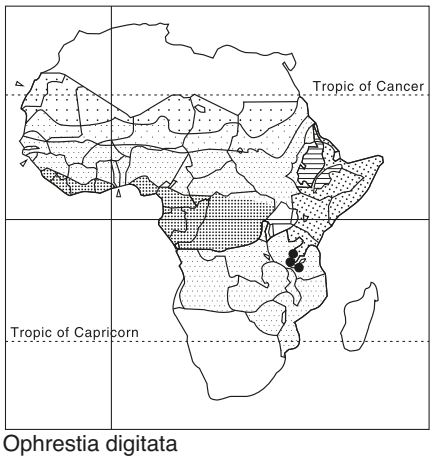
Ononis sicula



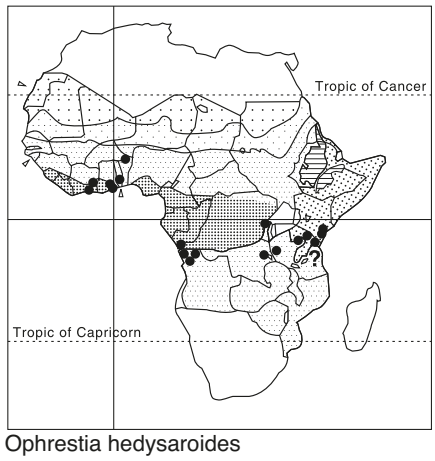
Ononis tournefortii



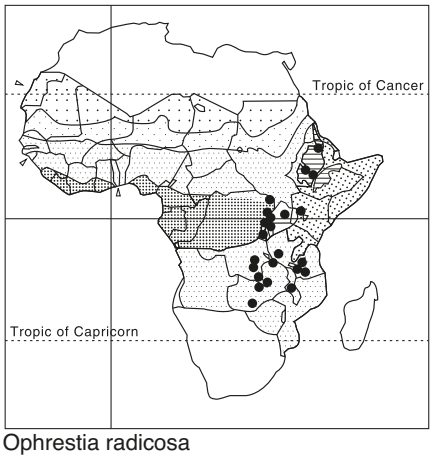
Ophrestia breviracemosa



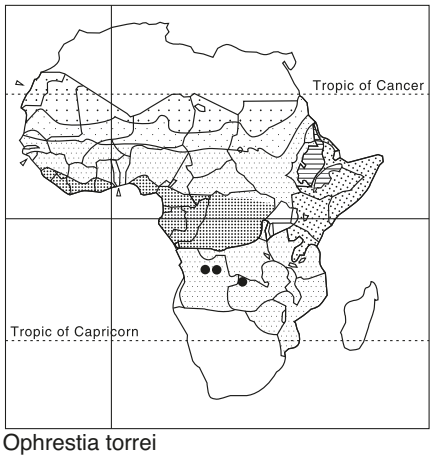
Ophrestia digitata



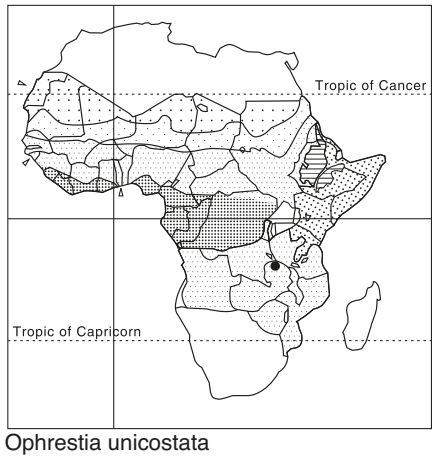
Ophrestia hedysaroides



Ophrestia radicosa



Ophrestia torrei



Ophrestia unicostata

ONONIS TOURNEFORTII

Annual herb, erect or ascending, to 50 cm tall; stems branched at base, densely glandular-hairy; flowers solitary in the axils of bracts; corolla glandular, yellow, ± equalling the calyx.

Coastal inner dunes with *Zygophyllum waterlotii* and *Chenopodiaceae.*

Morocco; SW Spain.

SYNONYMS:

Ononis coriifolia Reichenb. = **Stylosanthes erecta**

decumbens Thunb. = **Lotononis**

OPHRESTIA / *8*

Most of the tropical African species poorly known. Pod unknown in 3 species, and only immature pod seen in another one; flower colour unknown in 1 species; no seeds recorded for 6 species. Two species are known only from the type.

Ophrestia breviracemosa Verdc., Kew Bull. 52: 495, 1997 – Icon.: ibid.: 497, and Fl. Zambes. 3(5): 27, 2001.

Subshrubby herb with 4 prostrate stems to 40 cm long, appressed grey pubescent arising from a woody rootstock; leaves *1-foliolate;* calyx and corolla hairs very dark brown; corolla small, colour unknown; ovary 2-ovulate; pod unknown.

Uapaca burnt woodland; c. 1500 m alt.

Known only from the type collected in 1969.

O. digitata (Harms) Verdc.

syn.: *Paraglycine digitata* (Harms) F. J. Herm.

Creeping or procumbent perennial herb with several branches to 50 cm long radiating from a slender fusiform rootstock 14-18 cm long; stems (angled) and leaves (3-4-foliolate) with spreading blackish or white hairs; nerves of leaflets impressed above; inflorescence subglobose; flowers purplish-mauve; pod unknown.

Grassy hillsides, forest edges, upland grassland with scattered trees and shrub clumps; 1950 m alt.

O. hedysaroides (Willd.) Verdc.

bas.: *Glycine hedysaroides* Willd.

syn.: *Paraglycine hedysaroides* F. J. Herm.; *Glycine pentandra* Spreng., Syst. Veg. 3: 235, 1826, non 1802 (= *Teramnus labialis)*; *Johnia willdenowii* Hook. f.

Perennial climbing herb, woody at base, or woody suberect herb 0,3-0,9 m tall; stems terete, 2 mm Ø, yellowis-brown spreading hairy; leaves 3-foliolate, pubescent; flowers in ± sessile clusters, white.

Bushland, forest edges, grassland, old cultivations; usually in sandy but sometimes clay soils; 0-1270 m alt.

Easily confused with *Galactia tenuiflora* which has glabrous standard petal.

O. radicosa (A. Rich.) Verdc.

syn.: *Glycine radicosa* (A. Rich.) Bak. f.; *Paraglycine radicosa* (A. Rich.) F. J. Herm.; Enum. 2: 107, 1992.

Perennial climber with slender terete brownish or whitish hairy stems to c. 1 cm long from a woody rootstock; leaves 3-foliolate;

OPHRESTIA RADICOSA

inflorescence long, lax; flowers small, whitish tinged purple.

Grassland, woodland, bushland, upland grassland with scattered trees; grassland with *Loudetia* or *Hyparrhenia;* riverine forest; sometimes on termite mounds; roadsides; 1150-1860 m alt. – *Brachystegia, Brachystegia-Combretum,* relict chipya and semi-chipya woodland, *AcaciaCombretum* woodland- *Hyparrhenia* grassland edges, grassland and miombo, often in cultivated ground; 1200-1300 m (var. **enneaneura)**.

Variable in shape of leaflets and indumentum of stems.

Comprises 3 vars., not always clearly differentiated: – var. **enneaneura** (Hauman) Verdc. [bas.: *Glycine schliebenii* Harms var. *enneaneura* Hauman; syn.: *Paraglycine radicosa* var. *enneaneura* (Hauman) F. J. Herm.] in central part of range; – var. **radicosa** [syn.: *Glycine schliebenii* Harms var. *rufescens* Hauman; *Paraglycine radicosa* (A. Rich.) F. J. Herm. var. *rufescens* (Hauman) F. J. Herm.]; – var. **schliebenii** (Harms) Verdc. in SE part of range.

Var. **enneaneura** also cultivated in Zimbabwe, from Zambian material.

O. torrei Verdc.

Erect perennial herb or subshrub to 90 cm tall; stems woody, subvelvety with spreading or appressed hairs; leaves 3-5-foliolate; inflorescence long, with numerous flowers in fascicles; corolla greenish-white, brown-hairy; pod unknown.

Brachystegia woodland on sandy soil; 1000-1335 m alt.

O. unicostata (F. J. Herm.) Verdc.

bas.: *Paraglycine unicostata* F. J. Herm.

Erect, ascending or partly twining herb with dense ferruginous stiff-hairy stems 15-40 cm tall, from a woody base; leaves digitately 3-foliolate, leaflets long, narrow with very strong midrib; inflorescence branched, to c. 70 cm long; flowers very small, lilac or mauve; only immature pods known, seeds unknown.

Open grassland with scattered trees in yellow soil in firebreak; *Uapaca* woodland in sandy soil in open bush, in firebreak; 1500-1740 m alt.

Very close to *O. upembae,* with identical leaflet venation.

O. unifoliolata (Bak. f.) Verdc.

syn.: *Paraglycine unifoliolata* (Bak. f.) F. J. Herm.

Trailing or climbing plant 60-90 cm tall from a fleshy narrow rootstock; stems numerous, woody at base, densely shortly ferruginous bristly-hairy; leaves 1-foliolate, long, narrow; inflorescence long; flowers very small, dark-brown-hairy; corolla reddish-violet, purple or pink; seeds unknown.

Tall grassland, *Brachystegia* woodland, woodland margins with lateritic grassland; in gravelly, red, sandy, clay soil in sunny hot situation (Angola); 1200-1525 m alt.

O. upembae (Hauman) Verdc.

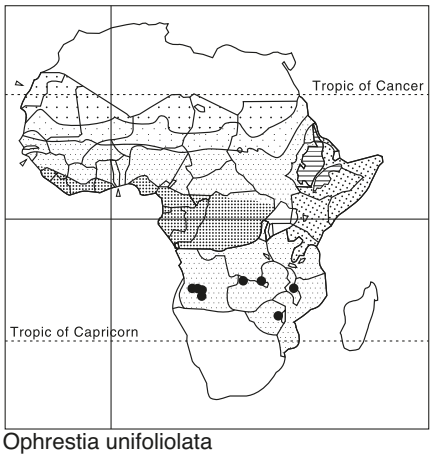
syn.: *Paraglycine upembae* (Hauman) F. J. Herm.

Climbing herb with slender glabrous stems to 1 m long and 0,5-0,7 cm Ø; leaves 3-foliolate, leaflets long, narrow, with very strong midrib; inflorescence long; calyx brown-hairy, corolla white-hairy, pink or mauve; pod unknown.

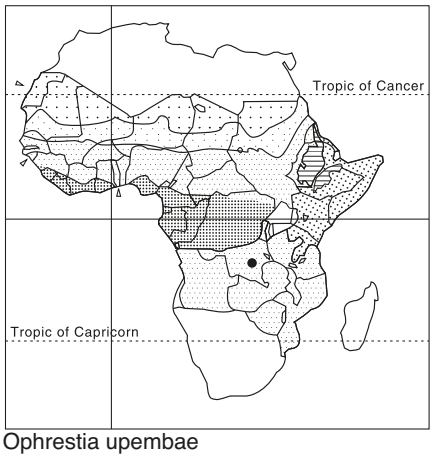
Savanna; 1700 m alt.

Very close to *O. unicostata.*

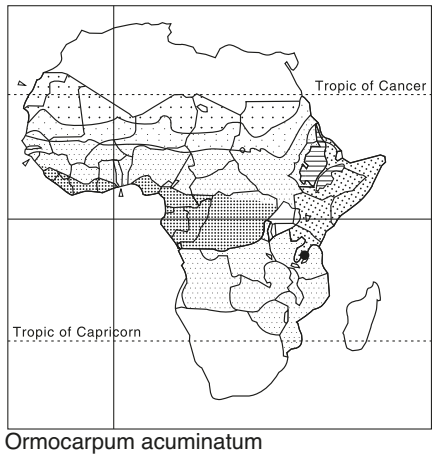
Known only from the type collected in 1948 (de Witte 3499).



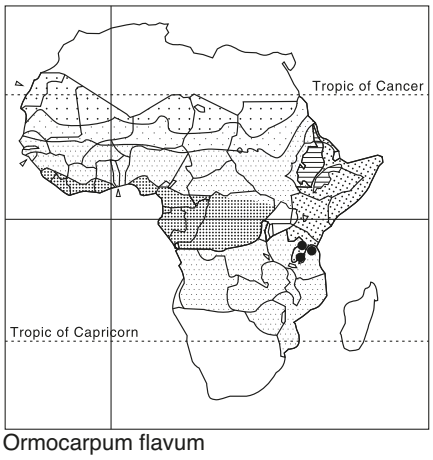
Ophrestia unifoliolata



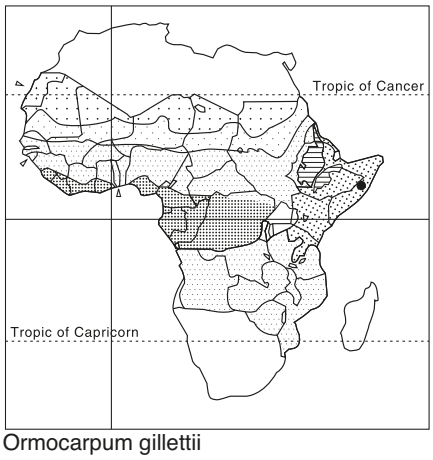
Ophrestia upembae



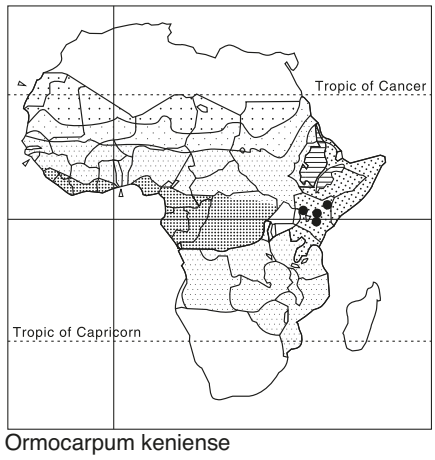
Ormocarpum acuminatum



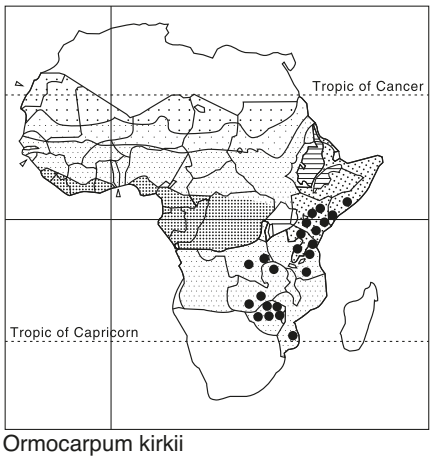
Ormocarpum flavum



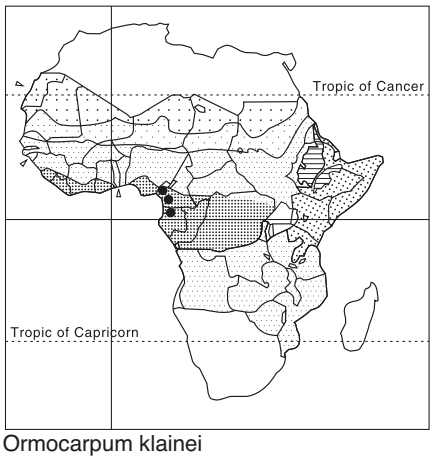
Ormocarpum gillettii



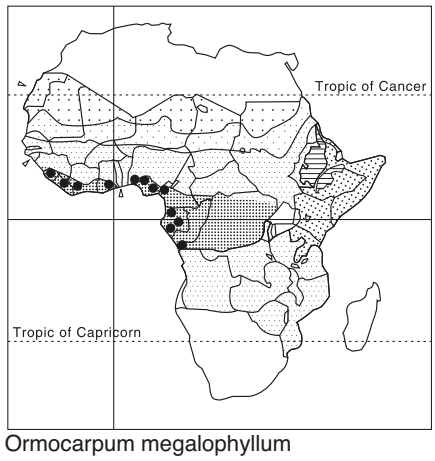
Ormocarpum keniense



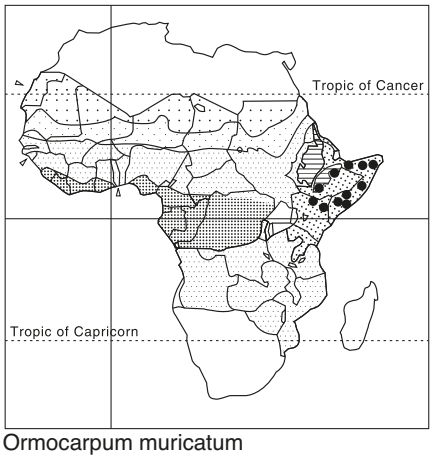
Ormocarpum kirkii



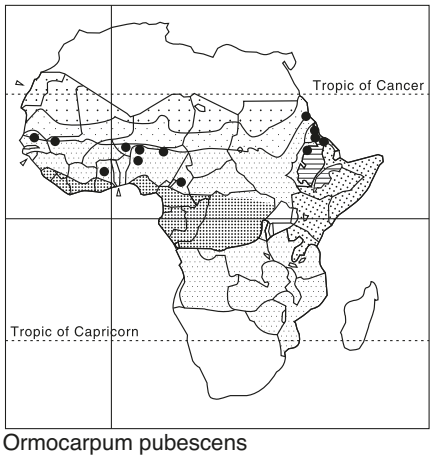
Ormocarpum klainei



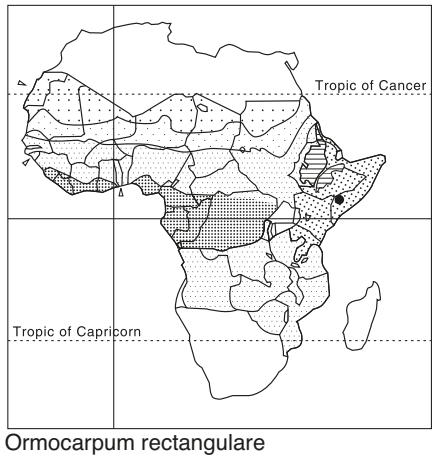
Ormocarpum megalophyllum



Ormocarpum muricatum



Ormocarpum pubescens



Ormocarpum rectangulare

ORMOCARPUM / *16*

In one species (*O. acuminatum)* the fruit is unknown, and it is known only from the type.

Ormocarpum acuminatum Polhill

Shrub to 1,5 m tall; young branchlets thinly pubescent, soon glabrescent and developing a pale bark with very small tannin deposits forming numerous dots and streaks; fruit unknown.

Dense shade in forest in a rocky valley with *Trichilia dregeana, Myrianthus holstii, Cephalosphaera usambarensis, Allanblackia stuhlmannii, Octoknema orientalis, Parinari excelsa;* 1000 m alt.

Only known from the type collected in 1984.

O. flavum J. B. Gillett

Slender shrub 2-5 m tall; young stems and leaf-rhachides with both normal white spreading hairs and dark swollen-based hairs; the latter are absent from the inflorescence and calyx but present on the leaf-margin.

Dense deciduous woodland with *Cordyla densiflora, Commiphora* spp., *Grewia, Bauhinia,* etc.; along dry dougas; sometimes frequent; 500-900 m alt.

O. gillettii Thulin

Shrub to 1,5 m tall, compact and densely branched; young branchlets glabrous to sparsely pubescent, purplish brown, soon becoming glabrous and ash grey.

Deciduous bushland with bushes mostly under 1 m tall, including species of *Acacia, Commiphora, Jatropha, Loewia, Balanites* on sand overlying limestone or gypsum; 150-200 m alt.

O. keniense J. B. Gillett

Shrub ± 1 m tall; young stems, leaf-rhachis, underside of leaflets, inflorescence-rhachis, pedicels and ovary white pubescent; swollen-based hairs scanty on the young stems and ovary, absent elsewhere.

Floor of sandy valley in open thorn scrub; *Acacia, Commiphora* open bushland and semi-desert scrub; 500-1350 m alt.

O. kirkii S. Moore

syn.: *O. mimosoides* S. Moore; *O. discolor* Vatke; *Diphaca kirkii* (S. Moore) Taub.; *D. mimosoides* (S. Moore) Taub.; *Ormocarpum affine* De Wild.; *Diphaca discolor* (Vatke) Chiov.

Shrub or tree 2-9 m tall; twigs whitish, sparsely white pubescent when young, occasionally also with persistent swollen-based hairs.

Acacia, Commiphora or coastal bushland on sand; grassland; *Brachystegia-Julbernardia, Combretum* or *Colophospermum* woodland; riparian woodland or thicket; less often in open grassland; sometimes on termite mounds; rocky banks; pools in wooded savanna; ± 50-1500 m alt.

Namibia, S. Africa.

O. klainei Tisserant

syn.: *Diphaca cochinchinensis* Lour. var. *acutifoliolata* Taub. fa. *parvifoliolata* Taub.

Shrub 1-1,5 m tall; stem and branches rounded, glabrous.

Watershed; forest.

O. megalophyllum Harms

syn.: *Diphaca cochinchinensis* Lour. var. *acutifoliolata* Taub. fa. *grandifoliolata* Taub.

Shrub 1-2 m tall; branches erect, slender rough hairy, with glandular hairs, becoming glabrescent.

Disturbed forest; forest clearings; 475 m alt.

O. muricatum Chiov.

Shrub 1-3 m tall; both normal white and swollen-based hairs usually present on young stems, leaf-rachides and inflorescences.

Acacia, Commiphora open bushland; 50-1300 m alt.

O. pubescens (Hochst.) Cufod. ex J. B. Gillett

syn.: *Acrotaphros bibracteata* A. Rich.

Shrub or tree to 3 m tall with short stout branches, grey-pubescent all over.

Woodland, bushland, savanna; formerly cultivated land; 1000-2100 m alt. in Ethiopia but certainly less elsewhere.

O. rectangulare Thulin

Shrub to 2 m tall, densely branched; young branchlets pubescent with ± appressed crisped hairs, grey or pale brown, later glabrescent and purplish brown.

Deciduous bushland with *Acacia* spp., *Commiphora* spp., *Ormocarpum muricatum, Symphyochlamys erlangeri, Dicraeopetalum stipulare* on limestone; ± 200-300 m alt.

O. schliebenii Harms

Shrub 1-3 m tall; twigs at first purplish, later whitish, sparsely pubescent with both white and swollen-based hairs, the bark finally splitting longitudinally.

Thicket and open bushland; *Brachystegia, Isoberlinia, Combretum, Albizia* woodland and coastal bushland; 0-100 m alt.

O. sennoides (Willd.) DC.

bas.: *Hedysarum sennoides* Willd.

Shrub or tree 1-5 m tall, very ramose, almost or quite free from normal white hairs, the branches often bending downwards; twigs reddish-purple, glabrous or with viscid swollen-based hairs.

Brachystelma-Macrolobium woodland; forest edge; shrub layer of evergreen forest patch; coral cliffs and rocks; shady places by streams; thick forest on hillside; rocky ground near shore; rapids; fringing forest; evergreen forest remnants; 0-1500 m alt.

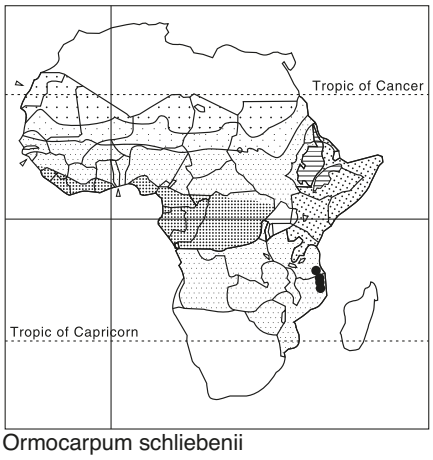
Subsp. **sennoides** in India, Sri Lanka.

Comprises 2 subspp.: – subsp. **hispidum** (Willd.) Brenan & J. Léonard [syn.: *Robinia guineensis* Willd.; *Rathkea glabra* Schumach.; *Ormocarpum coronilloides* G. Don; *O. buchholzii* Engl.; *O. guineense* (Willd.) Hutch. & Dalziel ex Bak., incl. subsp. *hispidum* (Willd.) Brenan & J. Léonard and var. *oligophyllum* Bak. f.]; – subsp. **zanzibaricum** Brenan & J. B. Gillett

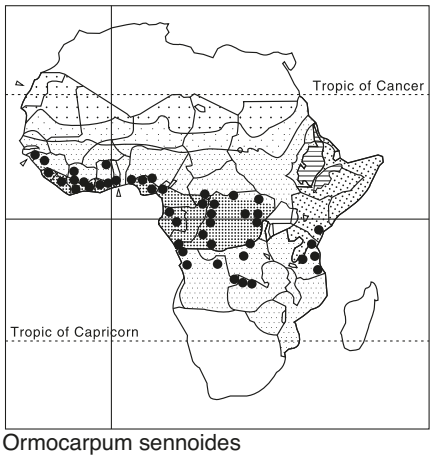
O. somalense J. B. Gillett, non *Arthrocarpum somalense* Hillc. & J. B. Gillett

Shrub 1-2 m tall; branches short, densely crowded, white pubescent at first, becoming glabrous, dark-purple.

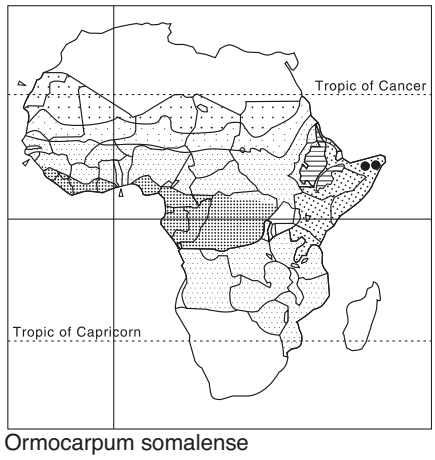
Rather common on stony slopes, in thick close growth; *Buxus* scrub on limestone; 400-1490 m alt.



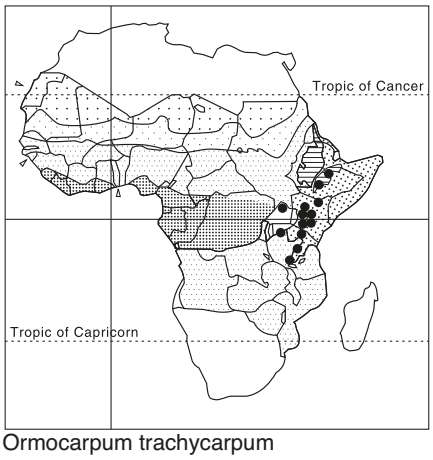
Ormocarpum schliebenii



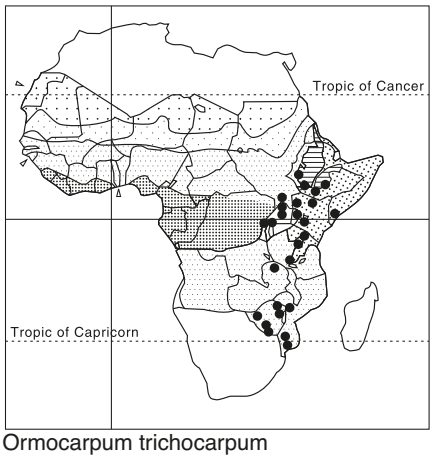
Ormocarpum sennoides



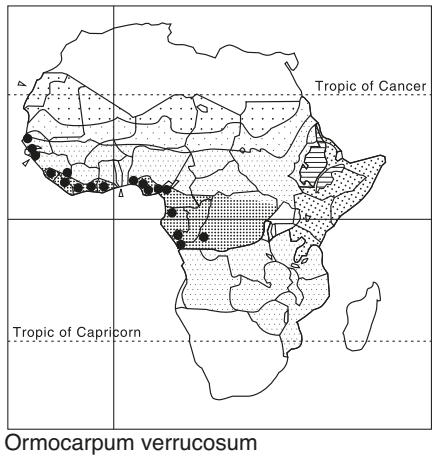
Ormocarpum somalense



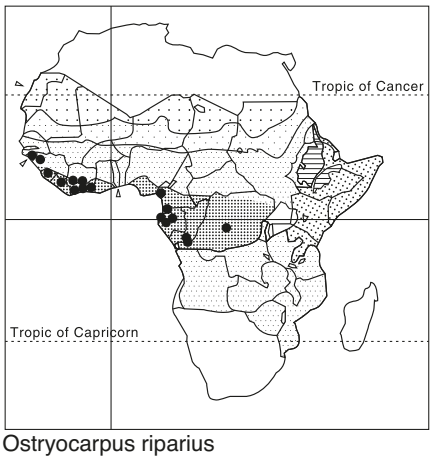
Ormocarpum trachycarpum



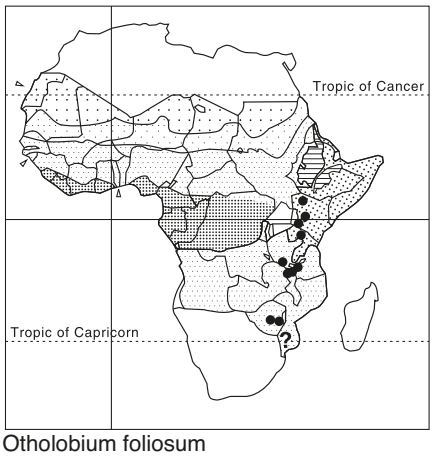
Ormocarpum trichocarpum



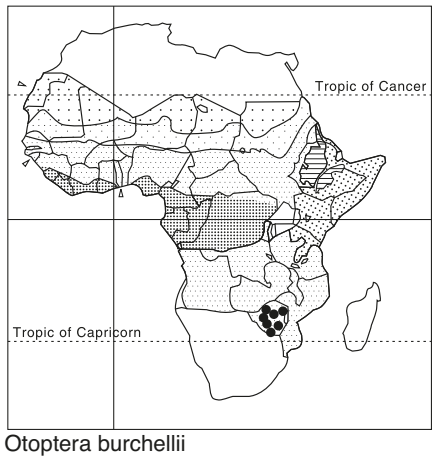
Ormocarpum verrucosum



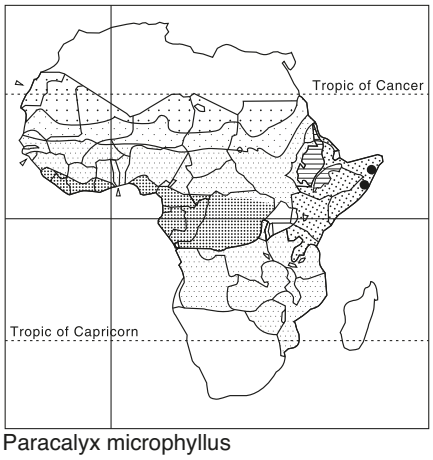
Ostryocarpus riparius



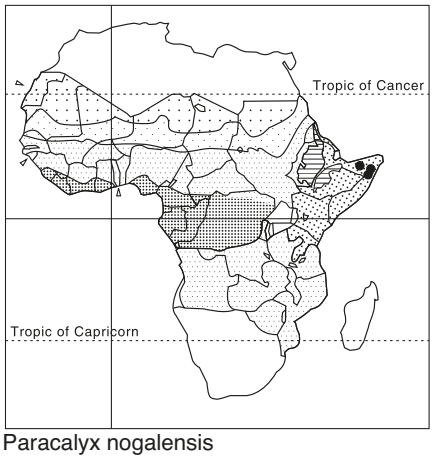
Otholobium foliosum



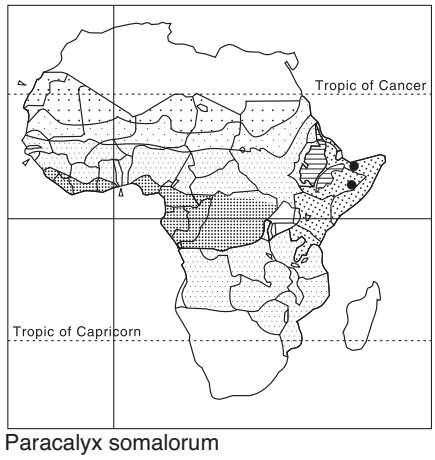
Otoptera burchellii



Paracalyx microphyllus



Paracalyx nogalensis



Paracalyx somalorum

ORMOCARPUM

O. trachycarpum (Taub.) Harms

bas.: *Diphaca trachycarpum* Taub.

syn.: *Ormocarpum striolatum* Harms ex De Wild.; *O. aromaticum* Bak. f.

Shrub or tree 1-6 m tall; trunk 30 cm in girth; bark soft corky; twigs whitish; normal white hairs present on young twigs, leaf-rhachides and inflorescences, and usually also dark swollen-based hairs whose hardened bases persist on the older twigs.

Deciduous woodland, grassland; *Acacia, Commiphora* bushland; especially in rocky places; 950-1900 m alt.

O. trichocarpum (Taub.) Harms – Icon.: Sim, Forest Fl. Port. E. Afr.: fig. 3, 1909 (sub nom. *Saldania)*.

bas.: *Diphaca trichocarpum* Taub.

syn.: *Saldania acanthocarpa* Sim; *Ormocarpum setosum* Burtt Davy

Shrub 1-6 m tall, with both normal white hairs and swollen-based hairs on young stems, leaf-rhachides and inflorescences; twigs often white.

Combretum-Balanites aegyptiaca woodland; *Acacia* bushland; especially on eluvial slopes in wooded grassland or grassland; dry bushland; savannas with *Acacia, Themeda; Brachystegia, Acacia* or *Colophospermum* woodland and savanna; especially on well drained hill slopes; 20-2100 m alt.

Botswana, S. Africa, Swaziland.

O. verrucosum P. Beauv. – Icon.: P. Beauv., Fl. Oware: tab. 58, 1804.

syn.: *Muellera verrucosa* Pers.; *Diphaca verrucosa* (P. Beauv.) Taub.

Scrambling weak-stemmed shrub 1-5 m tall, glabrous with brown-purple branchlets.

Sandy places near the sea; brackish and mangrove swamps; near salt marshes; rarely in inland, near river.

Bioko/Fernando Poo, São Tomé, Principe.

Comprises 2 vars.: – var. **verrucosum;** – var. **wombaliense** J. Léonard

SYNONYMS:

Ormocarpum affine De Wild. = **Ormocarpum kirkii**

aromaticum Bak. f. = **O. trachycarpum**

bibracteatum (A. Rich.) Baker in F.W.T.A., Ed. 2 = **O. pubescens**

bibracteatum sensu Glover, Somal. = **O. muricatum**

bibracteatum sensu J. Léonard 1954 = **O. kirkii**

buchholzii Engl. = **O. sennoides** subsp. **hispidum**

caeruleum sensu Cufod. = **O. somalense**

coronilloides G. Don = **O. sennoides** subsp. **hispidum**

discolor Vatke = **O. kirkii**

guineense (Willd.) Hutch. & Dalziel ex Bak., incl. subsp. *hispidum* (Willd.) Brenan & J. Léonard = **O. sennoides** subsp. **hispidum**

melanodictyotum Chiov. = **O. trachycarpum**

mimosoides S. Moore = **O. kirkii**

pubescens sensu Cufod. 1955 p.p. = **O. kirkii** and **O. muricatum**

setosum Burtt Davy = **O. trichocarpum**

sp. A. sensu F.W.T.A., Ed. 2 = **O. klainei**

striolatum Harms ex De Wild. = **O. trachycarpum**

OSTRYOCARPUS / *1*

Ostryocarpus riparius Hook. f.

syn.: *Millettia micrantha* Harms

Climbing or straggling glabrous shrub; branches with longitudinal ridges, 5 mm Ø; flowers in large panicles to 30 cm long; flowers yellow-white; fruit broadly elliptic, 7 × 5 cm, flat, with 1-2 seeds.

Semi-aquatic sites; gallery forest, riverbanks, marshes; 1-200 m alt.

Bioko/Fernando Poo.

[O. zenkerianus (Harms) Dunn]

bas.: *Millettia zenkeriana* Harms

Glabrous shrub with 18-22 cm long imparipinnate leaves and 3-5 pairs of large leaflets; flowers in long panicles; fruit unknown.

Only known from the type (Zenker 1453) collected in Cameroon, Bipinde, Sanaga.

According to Harms a plant near *O. riparius* (" *Millettia micrantha* "); or near *Aganopes lucida?*

Not mapped.

SYNONYMS:

Ostryocarpus laurentii (De Wild.) Harms = **Aganope lucida**

lucidus (Welw. ex Bak.) Dunn = **A. lucida**

major Stapf = **A. gabonica**

parvifolius Micheli = **Millettia griffoniana**

racemosus A. Chev. = **Dalbergiella welwitschii**

welwitschii Bak. = **D. welwitschii**

OTHOLOBIUM / *1*

A mainly South African genus of 61 species, but eight in S. America (Andes).

Otholobium foliosum (Oliv.) C. H. Stirton

Woody herb or shrub, much-branched, densely pubescent, aromatic, 0,3-3,5 m tall; leaves crowded, gland-dotted; flowers dark purplish-blue (wings and keel pale blue or white), in dense heads, ± hidden by leaves; fruit flat 5 × 3 mm, 1-seeded.

Upland grassland, bushland, (evergreen) forest clearings and margins, lake and stream edges, 1600-3100 m alt. (subsp. **foliosum)**; *Acacia abyssinica* woodland, bushland, *Loudetia-Themeda* grassland, streambeds; (900-)1200-2100 m (subsp. **gazense)**.

S. Africa (Transvaal; subsp. **gazense)**.

Comprises 2 subspp.: – subsp. **foliosum,** with strongly reticulate fruit, in N part of range; – subsp. **gazense** (Bak. f.) Verdc. [bas.: *Psoralea foliosa* Oliv. var. *gazensis* Bak. f.; syn.: *Otholobium gazense* (Bak. f.) C. H. Stirton] with nearly smooth fruit, in S part of range.

OTOPTERA / *1*

A genus of 2 species, the other one in Madagascar.

Otoptera burchellii DC. – Icon.: Fl. Zambes. 3/5: 67, 2001.

syn.: *Vigna burchellii* (DC.) Harv.

Trailing or climbing perennial herb 1-3 m tall, or wiry spindly subshrub to 1 m, with hairy stems; leaflets 3, narrow, 1-10 × 0,3-3,5 cm; flowers large, 2-4 on long peduncle (1,5-18 cm), sweet-scented, pink, mauve or blue, violet or red, with base of standard yellow.

Wooded grassland with *Terminalia sericea* and *Acacia giraffae,* open grassland on dry soil, *Acacia* scrub and woodland, mopane and *Combretum* woodlands, riverine thickets; often on termite mounds; 500-1400 m alt.

Variable in size of leaves and length of peduncle.

Namibia, Botswana, S. Africa.

PARACALYX / *3*

Flowers (keel) boat-shaped; calyx gland-dotted, strongly accrescent in fruit; pods glandular.

Disjunct distribution: Horn of Africa, Socotra, India – Thailand (map in J. H. Seyani & A. C. Chikuni, Proceed. 13th Plenary Meeting AETFAT, Malawi: 1108, 1994.

Paracalyx microphyllus (Chiov.) Ali

Trailing herb with densely appressed-pubescent stems to 1 m long; bracts small, soon falling; flower yellowish; pod 8x4 mm.

In sand or sand over limestone; to c. 200 m alt.

P. nogalensis (Chiov.) Ali

Twining or climbing herb to 4 m long, sparsely pubescent; bracts ± circular, cup-shaped, 10-14 mm Ø; flower yellowish; pod 13 × 5 mm.

Open bushland, rocky places, often along wadis; 200-1000 m alt.

P. somalorum (Vierh.) Ali – Icon.: Thulin, Fl. Somal. 1: 446, 1993.

syn.: *Cyclista scariosa* sensu Cufod., Enum.: 322, 1955, non Roxb.

Twining or climbing herb, tomentose, glabrescent; calyx large, 30 × 45 mm long in fruit; flower yellow; pod 12 × 7 mm.

Bushland near tug; dry bushland; 1000-1220 m alt.

PARAGLYCINE = OPHRESTIA

PAROCHETUS / *1*

A genus of 2 species, one in tropical E Africa, the other one in S Asia from India (mostly Himalayan) to Java.

Parochetus africanus Polhill

syn.: Enum. 3: 313, 1995.

Prostrate *Trifolium*-like herb with creeping slender ± glabrous stems rooting at the nodes, lacking tubers (but present in the Asiatic *P. communis* Buch.-Ham. ex D. Don); stems lying on the soil surface forming mats 1-2 m Ø; leaves evergreen, often with

white or brown markings; inflorescence long-pedunculate, 1-2 (-3)- flowered; corolla large, pale blue, rarely white, sweetly scented; pod linear, tardily dehiscent or sometimes forced open by seeds germinating inside.

Submontane or montane (evergreen) forest in partial shade; bamboo forest and lower ericaceous belt, on the forest floor and in moist shady places, on stream and river banks, usually on soils of volcanic origin.; 1500-3450 m alt. (1500-2000 m in Fl. Zambes. area).

Cultivated in Europe, especially in England in cool greenhouses (hanging baskets) or even out of doors; easily grown.

Common along the flanks of the Great Rift Valley in E, also on the W Rift in E Zaire; occasionally on more distant mountains.

PEARSONIA / *8*

A genus of 13 species occurring in E, SE and S Africa and one of which endemic in Madagascar. A significant number of taxa are geographically and/or edaphically isolated. A few species are incompletely known. Seeds are not seen for 3 species, and the ecology of *P. sessilifolia* subsp. *sessilifolia* is poorly known in our area.

The following treatment is based on Polhill's monograph in Kew Bull. 29: 383-410, 1974, and Fl. Zambes. 3(7): 56-63, 2003.

CAMPBELL-YOUNG, G. J. & K. BALKWILL (2001). A new species of Pearsonia (Fabaceae) from dolomites in Northern Province, South Africa. *Nord. J. Bot.* 20: 547-555 [with a key to all species].

Pearsonia aristata (Schinz) Dummer, incl. var. *gazensis* (Bak. f.) Dummer

bas.: *Lotononis aristata* Schinz

syn.: *L. aristata* var. *gazensis* Bak. f.; *Pearsonia* sp. 1 sensu Drummond in Kirkia 8: 225, 1972.

Perennial plant with numerous erect, spreading or prostrate stems to 1,5 m tall from a strong taproot or woody rootstock; stems much branched, sparsely to densely appressed or spreading hairy; leaflets coriaceous, narrowed to a pungent tip; stipules absent; flowers bright yellow, turning orange, large; pods persisting on the tree.

Montane grassland, miombo woodland; often in steep rocky places; (1050-)1450-2100 m alt.

Very variable in habit, indumentum and size, and also in details of leaves and flowers. But very distinctive and rarely confused.

NE S. Africa, Swaziland.

P. cajanifolia (Harv.) Polhill subsp. **cryptantha** (Bak.) Polhill

syn.: *Pleiospora holosericea* Schinz; *P. paniculata* Bolus ex Dummer; *P. bolusii* Dummer; *P. macrophylla* Dummer; *P. buchananii* Harms, nom. illegit.; *P. cryptantha* (Bak.) Bak. f.; *Phaenohoffmannia cajanifolia* (Harv.) O. Kuntze subsp. *cryptantha* (Bak.) J. B. Gillett

Perennial plant with several erect well-branched pubescent to tomentose stems (0,2-)0,4-0,7(-1,5) m tall from a deep taproot; undersurface of leaflets densely silky-hairy; stipules present; flowers yellow, ± in heads; pod 2-seeded.

Submontane grassland, often on rocky hillsides in higher altitude miombo or *Uapaca* woodland; 1350-2100 m alt.

NE S. Africa.

PEARSONIA CAJANIFOLIA

Comprises 2 subspp.: – subsp. **cajanifolia** (syn.: *Pleiospora gracilior* Dummer) in S. Africa (with the undersurface of leaflets visible between the sparse covering of stiff hairs and with smaller flowers); – subsp. **cryptantha** (Bak.) Polhill [bas.: *Eriosema cryptanthum* Bak., non Milne-Redh. 1951 (= *Eriosema kankolo)].*

P. flava (Bak. f.) Polhill

Perennial plant with numerous ascending and spreading hirsute stems (10-)15-45(-60) cm long from a branched and rhizomatous rootstock; stipules resembling leaflets; flowers large, bright yellow, turning orange; pod many-seeded.

Brachystegia woodland in grassy places, upland grassland, often in damp and disturbed places; 1500-2400 m alt. (1500-1750 m, subsp. **flava** at S end of Lake Tanganyika).

Variable in indumentum of leaflets.

Comprises 2 subspp.: – subsp **mitwabaensis** (Timp.) Polhill with densely silky-hairy leaflets in SE Zaire.

P. grandifolia (Bolus) Polhill subsp. **latibracteolata** (Dummer) Polhill

bas.: *Pleiospora latibracteolata* Dummer ("latebracteolata").

syn.: *Phaenohoffmannia latibracteolata* (Dummer) J. B. Gillett

Perennial plant with prostrate ± flexuous pubescent to tomentose (mixture of short crisped and long fine spreading hairs) stems 15-50 cm long, from a strong taproot or branched rootstock; stipules present; flowers large, white or cream with a purple centre in ± dense long racemes; ovary many-ovulate; seeds unknown.

Montane grassland, often on rocky hillsides or by streams; 1650-2300 m alt.

NE S. Africa.

Comprises 2 subspp.: – subsp. **grandifolia** [syn.: *Pleiospora grandifolia* (Bolus) Dummer; *Phaenohoffmannia grandifolia* (Bolus) J. B. Gillett] in NE S. Africa.

P. mesopontica Polhill

Perennial plant with spreading or decumbent hairy (mixture of short appressed and longer spreading hairs) stems 15-35 cm long, from a strong taproot or narrow rootstock; stipules present; flowers large, erect or resupinate, yellow, sometimes veined red-brown, solitary on long peduncle; pod many-seeded.

Montane grassland; c. 1550-1750 m alt.

Known only from the Chimanimani Mts. and nearby hills.

P. metallifera Wild

Bushy perennial herb, silvery tomentose throughout (except corolla), 0,3-1 m tall, with a strong taproot or woody rootstock; stipules absent; flowers yellow 2-6 clustered at branch-ends; ovary many-ovulate; seeds unknown.

Grassland on serpentine soils; c. 1300-1450 m alt.

Distinctive and uniform species of the Great Dyke (Zimbabwe).

P. sessilifolia (Harv.) Dummer subsp. **sessilifolia**

bas.: *Lotononis sessilifolia* Harv.

syn.: *Pearsonia sessilifolia* var. *conrathii* Dummer p.p. excl. specim. ex Zulu; *P. mucronata* Burtt Davy ex Bak. f.

Suffrutex or slender-stemmed shrublet (5-)15-40(-75) cm tall, sparsely hairy to tomentose, usually branching only towards top; leaflets linear, stipules absent; flowers yellow, turning reddish-brown, sometimes few at branch-ends; pod many-seeded.

PEARSONIA SESSILIFOLIA SUBSP. SESSILIFOLIA

Ecology poorly known; dry hillside; grassland with *Brachystegia spiciformis* and *Ericaceae;* (?-)1400-1750 m alt.

S. Africa, Swaziland.

Comprises 4 subspp.: – subsp. **filifolia** (Bolus) Polhill; subsp. **marginata** (Schinz) Polhill; subsp. **swaziensis** (Bolus) Polhill in S. Africa and Swaziland.

Very variable species aggregate, including 10 of the 11 species cited by Dummer in 1912, and another one added by Burtt Davy in 1932.

Very few collections from Zimbabwe, all made more than 60 years ago.

P. uniflora (Kensit) Polhill

Perennial plant with numerous slender, appressed pubescent to pilose, ascending or decumbent stems 15-35(-60) cm long, from a taproot; stipules present; flowers erect or resupinate, pale yellow, 1(-2) on wiry leaf-opposed long peduncles; ovary many-ovulate; seeds unknown.

Grassland; c. 300 m alt.

S. Africa (N Transvaal), Swaziland.

PERICOPSIS / *3*

A genus of 4 species three of which endemic to Africa. One species [*P. mooniana* (Thwaites) Thwaites in insular SE Asia].

FARIDAH HANUM, I. (2001). A systematic study of the Ormosia group (Leguminosae: Papilionoideae). *In:* SAW, L. G. & al., Eds., *Taxonomy: The Cornerstone of biodiversity. Proceedings of the fourth international Flora malesiana symposium 1998:* 107-121. Forest Research Institute Malaysia, Kuala Lumpur.

Pericopsis angolensis (Bak.) Meeuwen – Icon.: B. van Wyk & al., Photographic guide trees S Africa: 230, 2000.

bas.: *Ormosia angolensis* Bak.

syn.: *Afrormosia angolensis* (Bak.) De Wild., incl. var. *subtomentosa* (De Wild.) Louis; *A. bequaertii* De Wild.; *A. brasseuriana* (De Wild.) De Wild. var. *subtomentosa* De Wild.; *Pericopsis angolensis* var. *subtomentosa* (De Wild.) Meeuwen; *P. angolensis* subsp. *subtomentosa* (De Wild.) Yakovl. – All of fa. **angolensis.**

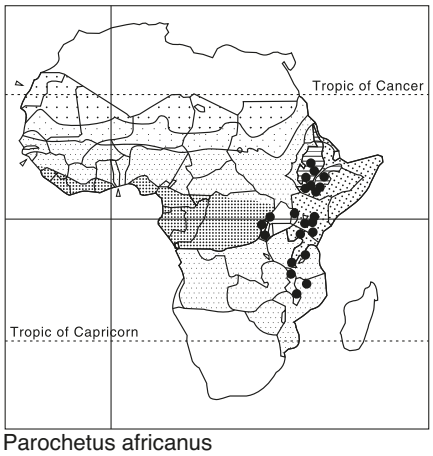
Deciduous tree (3-)10-20 m, or large shrub; bole tall, ± crooked, to 1 m Ø; crown rounded; bark smooth, pale grey, flaking off when old in thin scales, leaving reddish brown patches; leaves leathery and like inflorescences rusty brown-hairy; flowers in terminal panicles, white, greenish-white or violet, veined purple, appearing with the new leaves. – Fire-resistant, but very sensitive to frost.

Deciduous woodland (*Brachystegia* or *Combretum* and *Terminalia* associations), wooded grassland; in bushy stony places, rather rare (Angola); 700-1700 m alt. (fa. **angolensis)**, 200-750 m (fa. **brasseuriana)**.

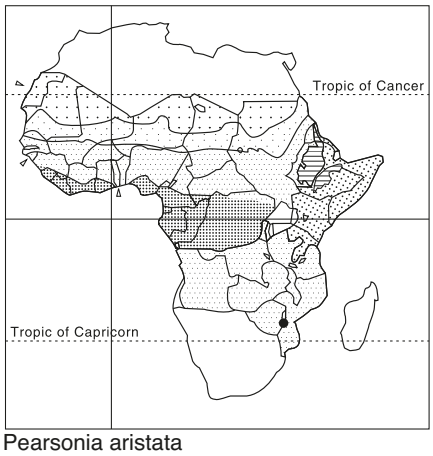
Variable in size, shape and indumentum of pod, in pubescence of leaves, and in colour of flowers.

Comprises 2 forms: – fa. **angolensis** [syn.: *P. angolensis* subsp. *angolensis* fa. *intermedia* Yakovl.]; – fa. **brasseuriana** (De Wild.) Brummitt [syn.: *Afrormosia brasseuriana* (De Wild.) De Wild.; *A. schliebenii* Harms; *A. angolensis* var. *brasseuriana* (De Wild.) Louis], with ± glabrous leaves, even when young.

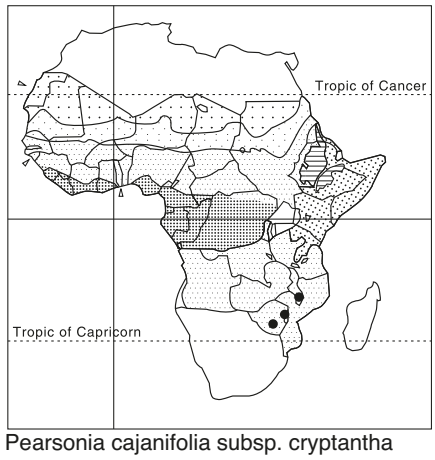
Sometimes confused with *Dalbergiella nyassae.*



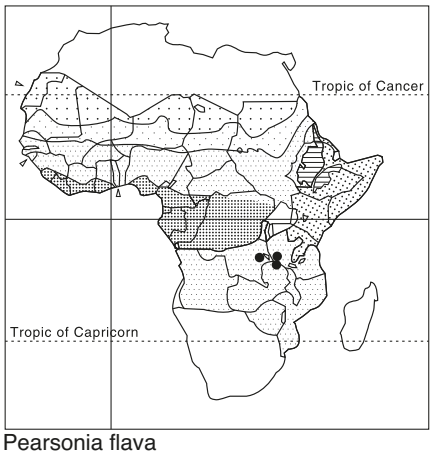
Parochetus africanus



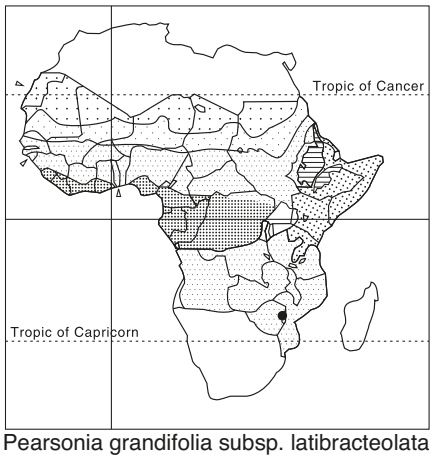
Pearsonia aristata



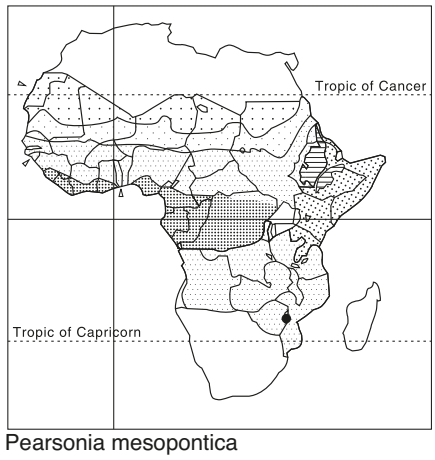
Pearsonia cajanifolia subsp. cryptantha



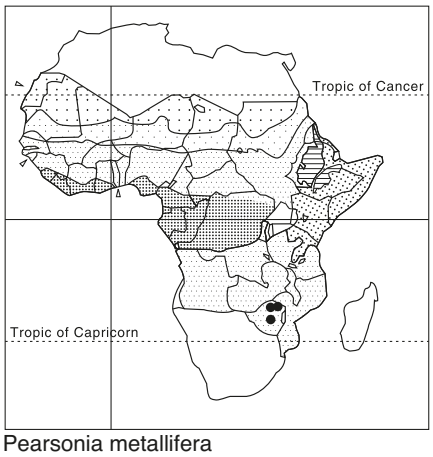
Pearsonia flava



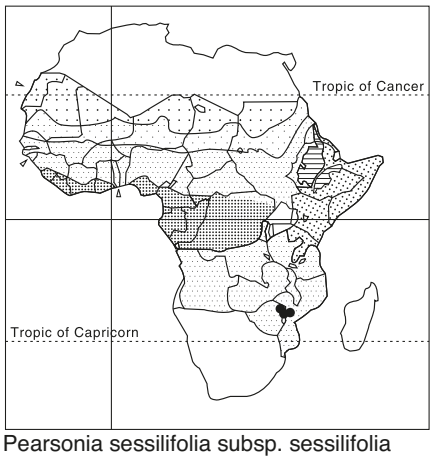
Pearsonia grandifolia subsp. latibracteolata



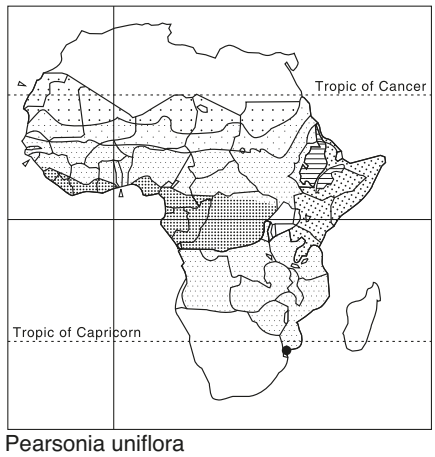
Pearsonia mesopontica



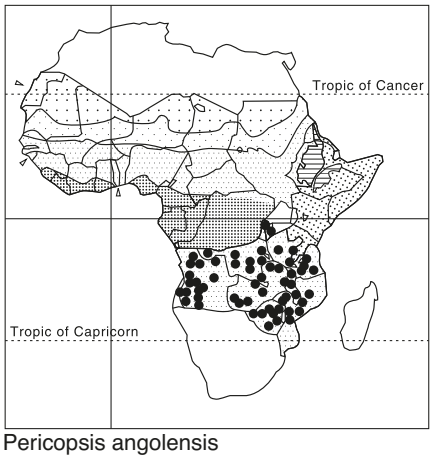
Pearsonia metallifera



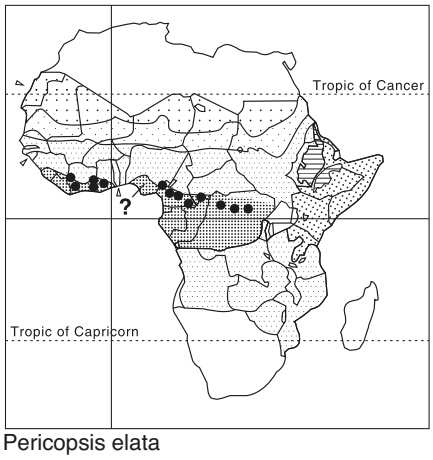
Pearsonia sessilifolia subsp. sessilifolia



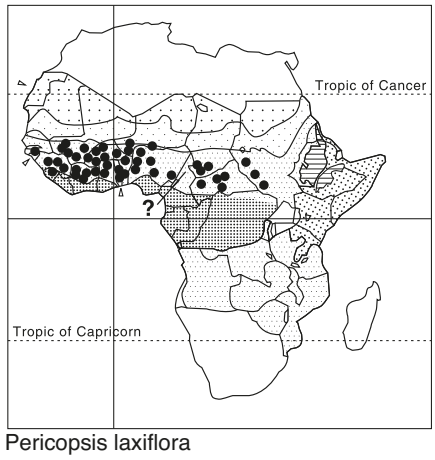
Pearsonia uniflora



Pericopsis angolensis



Pericopsis elata



Pericopsis laxiflora

PERICOPSIS

P. elata (Harms) Meeuwen – Icon.: Toussaint in Fl. Congo Belge Ruanda-Urundi 4: 43, 1953.

Tree 30-50 m; bole straight cylindrical, free to 18-30 m height, 1,3 m Ø ant 2-3 m in girth, buttressed; bark smooth, greyish brown, flaking off in thin pieces leaving bright red-brown patches; branches massive, spreading; crown flat-topped; flowers white to cream or greenish appearing with the new leaves, in slender drooping panicles.

Tall rain-forest, locally common or gregarious; to c. 500 m alt.

Cultivated in W Uganda – the main source of afrormosia wood.

Easily distinguished from *P. angolensis* by its acuminate leaflets, and its ecology.

Can be confused with *Distemonanthus benthamianus (Caesalpiniaceae)* with similar type of bark and similar leaves, but presence of stipels in *Pericopsis.*

P. laxiflora (Benth. ex Bak.) Meeuwen

syn.: *Afrormosia laxiflora* (Benth. ex Bak.) Harms

Tree (2-)9-13 m; bole usually twisted and crooked, to 25 cm Ø and 2 m in girth; branches crooked, drooping, pubescent; bark smooth, greyish brown, peeling off in large pieces exposing soft orange underbark; leaves tomentose; flowers cream (larger than those of *P. elata)* in lax terminal densely pubescent panicles appearing with the new leaves; pods (1-3-seeded) persisting on the tree.

Savanna woodland often in rocky places, on ironstone and lateritic soils in high rainfall areas; fringing forest. One of the commonest trees.

(PHASEOLUS)

For cultivated species, See Enum. 2: 109, 1992.

SYNONYMS:

Phaseolus adenanthus G. F. W. Mey. = **Vigna adenantha**

amboensis Schinz = **Bolusia**

angularis (Willd.) W. F. Wight = **Vigna angularis** (Willd.) Ohwi & Ohashi

atropurpureus DC. = **Macroptilium**

aureus Roxb. = **Vigna radiata** var. **radiata**

calcaratus Roxb. = **V. umbellata**

capensis Thunb. non Burm. f., nom. illegit. = **Vigna vexillata**

var. *lanceolatus* E. Mey. = **V. vexillata** var. **ovata**

var. *longifolius* E. Mey. = **V. vexillata** var. **ovata**

var. *ovatus* E. Mey.= **V. vexillata** var. **ovata**

cibellii Chiov. = **Vatovea pseudolablab**

cylindricus L. = **Vigna unguiculata** subsp. **unguiculata**

glyciniformis Weinm. = **V. vexillata** var. **vexillata**

grahamianus Wight & Arn. = **Wajira**

humifusus Savi = **Vigna vexillata** var. **vexillata**

kirkii Bak. = **V. kirkii**

macrorhynchus Harms = **Wajira grahamiana**

marinus Burm. = **Vigna marina**

mungo L. = **V. mungo**

mungo sensu auct. mult., non L. (e.g. Torre, Consp. Fl. Angol. 3: 261, 1966) = **V. radiata** var. **radiata**

pubescens Blume = **V. umbellata**

quadriflorus Hochst. ex A. Rich. = **V. vexillata** var. **vexillata**

radiatus L. = **V. radiata**

PHASEOLUS

radiatus sensu auct. non L., non L. sensu stricto = **V. radiatia** var. **sublobata**

rostratus Wall. = **V. adenantha**

schimperi Taub. = **Wajira grahamiana** (non **Vigna schimperi** Bak.).

schlechteri Harms = **Decorsea schlechteri**

sp. sensu Oliv. = **Physostigma mesoponticum**

sp. sensu De Wild. & T. Durand (1901) = **Vigna racemosa**

stenocarpus Harms = **Wajira grahamiana**

sublobatus Roxb. = **Vigna radiata** var. **sublobata**

trinervius Wight & Arn. = **V. radiata** var. **sublobata**

truxillensis Kunth = **V. adenantha**

vexillatus L. = **V. vexillata** var. **vexillata**

PHILENOPTERA / *10*

syn.: *Lonchocarpus* Kunth; *L.* sect. *Paniculati* Benth.; *Capassa* Klotzsch

BALFOUR-PAUL, J. (1997). *Indigo in the Arab world.* Curzon Press, Richmond/Surrey. XX + 283 pp. *[Indigofera* spp., *Lonchocarpus cyanescens].*

SCHRIRE, B. D. (2000). A synopsis of the genus Philenoptera (Leguminosae-Millettieae) from Africa and Madagascar. *Kew Bull.* 55: 81-94.

Philenoptera bussei (Harms) Schrire; neotype: Gillman 1124.

bas.: *Lonchocarpus bussei* Harms

syn.: *L. menyharthii* Schinz; *L. fischeri* Harms

Deciduous rather slender tree (3-)6-15 m tall; bark grey to greyish-brown, becoming fissured, rather rough and flaking; young branchlets pubescent to tomentellous, glabrescent; slash pale brown to cream or white with red sticky exudate.

Extending from coastal bushland and thicket to wooded grassland and a variety of deciduous woodland, bushland and thicket types, derived savanna and bushlands, inland; also in degraded montane scrub; 0-1500 m alt.

Very variable species, in shape and hairiness of leaves and width of fruit.

S. Africa.

Distinction from *P. eriocalyx* not always clear.

P. cyanescens (Schumach. & Thonn.) Roberty

bas.: *Robinia cyanescens* Schumach. & Thonn.

syn.: *Lonchocarpus cyanescens* (Schumach. & Thonn.) Benth.

Woody climbing 6-10-20 m long or straggling shrub 2-4 m tall.; branchlets silky when young; young leaves turning bluish-black in drying.

Coastal savanna (abundant: Togo, Benin, Ghana); secondary forest; fringing, transition, savanna forests; on a variety of soils; gully; 10-400 m alt.

Bioko/Fernando Poo.

Sometimes specially cultivated as a dye plant (Yoruba indigo), forming a shrub 2-2,5 m high.

BALFOUR-PAUL, J. (1997). See above.

PHILENOPTERA

P. eriocalyx (Harms) Schrire, excl. subsp. *wankieensis* Mendonça & E. P. Sousa (= *P. wankieensis)*.

bas.: *Lonchocarpus eriocalyx* Harms

syn.: *L. brachybotrys* Dunn ; *L. scheffleri* Harms ex Bak. f. ; *L. barlassinae* Chiov. ; *Derris scheffleri* Harms nom. nud.

Deciduous, generally slender tree or shrub 3-12(-15) m tall, with ± rounded crown ; bark pale greyish, smooth to reticulately fissured ; slash pinkish-white, producing (? always) a red resinous exudate from the inner side ; young branchlets generally yellowish-grey floccose-tomentose, rarely only crisped pubescent ; older branchlets glabrescent.

Deciduous woodland ; wooded grassland ; variety of mixed bushland and thicket formations ; occasionally in cleared or degraded riverine and dry evergreen forest ; 500-1680 m alt.

P. kanurii (Brenan & J. B. Gillett) Schrire

bas.: *Lonchocarpus kanurii* Brenan & J. B. Gillett

Evergreen tree 3-7 m tall ; young branches slightly pubescent to subglabrous, becoming glabrous ; bark grey-brown and fissured. Flower known !

Bushland on red sandy acid soil, with *Acacia, Boswellia, Commiphora africana, Dalbergia eremicola, Diospyros* sp. nov., *Lannea alata, Sclerocarya gillettii ; Acacia tortilis, A. senegal* open bushland on coastal red sand ; rather dense semi-evergreen bushland with *Delonix elata, Terminalia* spp., *Combretum* spp., *Hippocratea,* etc. ; 90-220 m alt.

First collected in 1974 and 1977-78 in Kenya ; rediscovered in 1983 in Somalia.

P. katangensis (De Wild.) Schrire

bas.: *Lonchocarpus katangensis* De Wild.

syn.: *L. nelsii* (Schinz) Schinz ex Heering & Grimme subsp. *katangensis* (De Wild.) Mendonça & E.P. Sousa ; *L. hockii* De Wild. ; *L. pallescens* Bak. var. *pubescens* Bak. f.

Deciduous shrub or tree 3-12 m tall with bole to 15 cm Ø ; bark greyish or brown, smooth to reticulately fissured ; slash yellow or pinkish-white ; young branchlets densely pilose to floccose-tomentose, soon glabrescent.

Brachystegia woodland ; sometimes riparian ; open forest ; savanna ; road sides ; sometimes common ; ± 1200-1400 m alt.

P. laxiflora (Guill. & Perr.) Roberty

bas.: *Lonchocarpus laxiflorus* Guill. & Perr. s. str.

syn.: *L. philenoptera* Benth., nom. illegit. ; *Philenoptera schimperi* Hochst. ex A. Rich. ; *Lonchocarpus sophiae* Kotschy & Peyr. ; *Philenoptera kotschyana* Fenzl, nom. nud.

Deciduous tree 6-8(-15) m tall with slender bole often crooked and 60 cm in girth, branched from the base ; crown branched and small ; bark smooth, ± scaly, grey or brownish, fibrous ; slash producing a blood-red resinous exudate ; young branchlets sparsely puberulous to conspicuously appressed pubescent, glabrescent.

Savanna woodland on a variety of soils ; common in places ; sometimes at edge of fringing forest ; 180-2150 m alt.

PHILENOPTERA

[P. madagascariensis (Vatke) Schrire]

bas.: *Millettia madagascariensis* Vatke

syn.: *Lonchocarpus polystachyus* Bak. ; *L. ichthyoctonus* Baill. ; *Ichthyoctonum madacascariensis* Boiv. ex Baill., nom.

Woody climber (or scrambling shrub) sometimes to 15 m or more tall ; main stem to 20 cm Ø, irregularly twisted ; young stems twining, with scattered brownish, short hairs at first, glabrescent ; older shoots with pale lenticels ; sap deep red.

Near sea-shore. For East Africa (Panza Island) correlated fruiting and flowering material is needed.

Madagascar ; Mayotte ; Nosy Bé. – Not mapped.

P. nelsii (Schinz) Schrire

bas.: *Dalbergia nelsii* Schinz

syn.: *Lonchocarpus nelsii* (Schinz) Schinz ex Heering & Grimme 1911, excl. subsp. *katangensis* (De Wild.) Mendonça & E. P. Sousa (= *P. katangensis) ; Lonchocarpus nelsii* (Schinz) Harms 1915 ; *L. laxiflorus* Guill. & Perr. var. *sericeus* Bak. quoad specim. angol. ; *excl.* specim. Meller s.n. (= *Philenoptera violaceae).*

Bushy tree 4-12 m tall or shrub 1-3 m, with rounded or irregular crown ; bark rough, grey to dark-brown ; branchlets pubescent, glabrescent or tomentose with reddish-brown bark, becoming blackish.

Dry open woodland and bushland ; often on deep Kalahari sand ; ± 800-1200 m alt.

Caprivi Strip, Namibia, Botswana.

P. pallescens (Welw. ex Bak.) Schrire

bas.: *Lonchocarpus pallescens* Welw. ex Bak. (incl. var. *gossweileri* Bak. f. ; *excl.* var. *pubescens* Bak. f. = *P. katangensis)*.

Tree, erect, 7,5-15 m or more, with the habit of an Ash (*Fraxinus)* ; crown interrupted ; bole 20-60 cm Ø ; branches patent, glabrous.

Stream sides in rocky places ; sometimes abundant ; 19-1000 m alt.

P. violacea (Klotzsch) Schrire

bas.: *Capassa violacea* Klotzsch

syn.: *Lonchocarpus capassa* Rolfe ; *L. violaceus* (Klotzsch) Oliv. non Kunth, nom. illegit. ; *Derris violacea* (Klotzsch) Harms, excl. specim. Welwitsch 1879 and b ; *Lonchocarpus laxiflorus* Guill. & Perr. var. *sericeus* Bak. quoad specim. Meller s.n., excl. specim. angol. (= *P. nelsii)* ; *L. philenoptera* Benth., nom. illegit., p.p.

± Evergreen or deciduous tree 4,5-21(-27) m, with a rounded crown ; bark grey, becoming reticulately fissured, rough and flaking off in scales ; slash cream to yellow-green, sometimes at least producing a red sticky exudate ; young branchlets with a ± dense grey or yellowish-grey indumentum of small crisped hairs ; older branchlets glabrescent.

PHILENOPTERA VIOLACEA

Drier parts of southern Africa; characteristic of major river drainage systems. Deciduous woodland; wooded grassland; riverine forest; in drier areas often in zones of local water-catchment at base of scarps, along water-courses and on hardpans; banks of torrential rivers; occasional in plateau woodland and on termite mounds on poor soils; 150-1650 m alt.

Caprivi Strip, Namibia, S. Africa, Botswana, Swaziland.

P. wankieensis (Mendonça & E. P. Sousa) Lock

bas.: *Lonchocarpus eriocalyx* Harms subsp. *wankieensis* Mendonça & E. P. Sousa

Deciduous tree 3-10 m, with trunk 22,5 cm Ø, or shrub; branches with red-brown puberulous leaves; bark dark grey with flakes of old bark adhering; leaves arising in clusters.

Open *Colophospermum mopane* woodland; rocky hillside; with mopane, *Guibourtia conjugata, Combretum;* 700-900 m alt. (confined to Zambezi Valley).

SYNONYMS:

Philenoptera kotschyana Fenzl = **Philenoptera laxiflora**

schimperi Hochst. ex A. Rich. = **P. laxiflora**

PHYSOSTIGMA / *4*

A small genus with a few species ill-defined; 2 known only from the type, and their fruit and seeds unknown. Flower keel with basal spur, apex beaked, twisted spirally, curved like a shell. Plants poisonous.

(Physostigma coriaceum Merxm.)

Suffrutex? with leathery leaves appearing at the same time as the flowers; fruit and seeds unknown.

Known only from the type gathering (fragment of plant) made in Angola by a collector for the firm Boehringer & Sons (Mannheim) without information about the locality. Plant rich in alkaloids.

Seems to be near **P. mesoponticum** but leaves smaller and harder.

Not mapped.

P. cylindrospermum (Welw. ex Bak.) Holmes

bas.: *Mucuna cylindrosperma* Welw. ex Bak.

syn.: *Stizolobium cylindrospermum* (Welw. ex Bak.) O. Kuntze

A wide-climbing shrub with glabrous pendulous twisted branches 9-12 m long; inflorescence axis with swollen glandular nodes; pod 15-18 cm long.

Primary forests; c. 1250 m alt. (Angola).

Drift seed found in the Netherlands (C. J. E. Brochard & G. C. Cadée, Tropische drijfzaden v.d. Nederlandse kust: 21, pl. 7 p. 54, 2005).

P. laxius Merxm.

Liane with finely pubescent stems; nodes of inflorescence axis not swollen; flowers showy appearing with the leaves; fruit and seeds unknown.

Grassland with scattered trees and bushland; common; 900-1000 m alt.

A peculiar form of **P. mesoponticum** ?

Known only from the incomplete type collected in 1932 (Schlieben 2258).

PHYSOSTIGMA

P. mesoponticum Taub., incl. var. *baumii* Harms

Perennial mostly erect pubescent or glabrous herb, more rarely with climbing or prostrate shoots, 0,15-1 m tall, from a very woody rootstock which reaches 80 cm in length; usually flowering before the leaves; nodes of inflorescence axis not swollen, eglandular; flowers showy, rose-pink or pale cream flushed purplish or yellowish; keel deep violet at apex, very twisted; pod 5-8 cm long.

Grassland, open *Combretum* woodland with *Hyparrhenia,* or *Brachystegia* woodland, subject to burning; "burnt over chipya"; marshes (Zaire); 90-2100 m alt. (to 1400 m in Fl. Zambes. area).

P. venenosum Balf. – Calabar Bean. – Icon.: Burkill, Useful Pl. W. Trop. Afr. 3: 403, 1995.

Scrambling shrub or liane with shrubby base reaching to the forest canopy; branches twining, sparsely puberulous or glabrous, c. 1 cm Ø, and at least 6 m long; inflorescence axis stout, zigzag with swollen nodes; flowers purple in drooping racemes, appearing with the leaves; pods 10-18 cm long.

Closed rain-forests, primary and secondary, dry and wet; riparian seasonally flooded forest; marshes.

Bioko/Fernando Poo.

In anglophone colonial territories the plant was proscribed. Official destruction may explain its apparent uncommonness in certain areas (fide Burkill, o.c.: 422).

PLATYCELYPHIUM / *1*

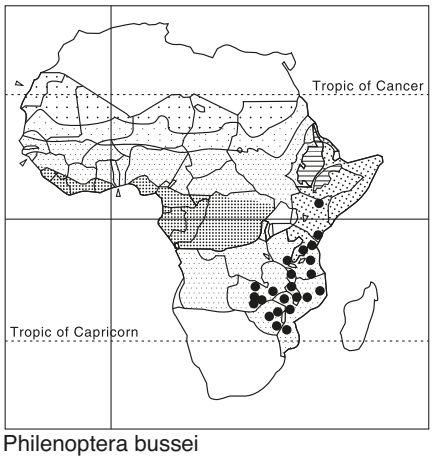
Monotypic.

Platycelyphium voense (Engl.) Wild

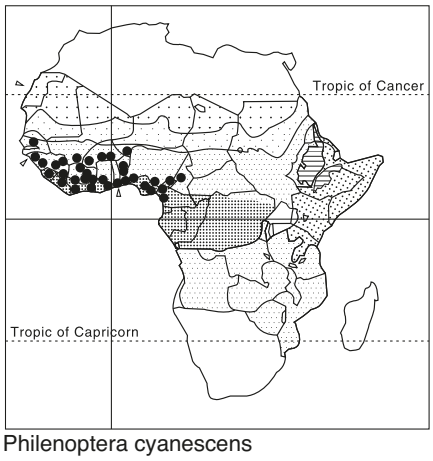
Small deciduous tree or shrub 3-9 m tall; trunk short or sometimes several-stemmed with ascending branches; bark pale grey, brown or yellowish-green, peeling with age in papery strips like a *Commiphora* (thus the basionym); young branches glabrous to pubescent, glabrescent; leaves and flowers mostly on lateral spur-shoots; leaves long (to 27 cm), sticky when young; flowering before the leaves, sometimes simultaneously over large areas; flowers in long racemes, large, violet to deep blue, sweetly scented; pod flat, indehiscent, 1-seeded.

Acacia, Commiphora deciduous bushland, scattered; 80-1050 m alt. (150-630 m in Somalia); (600-900 m in Ethiopia).

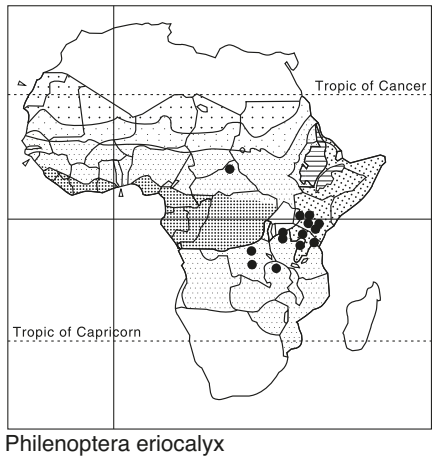
Variable in distribution and density of indumentum, rather sparse in N part of range; also in number of leaflets (lower in the N) as well as in shape of calyx lobes and corolla parts.



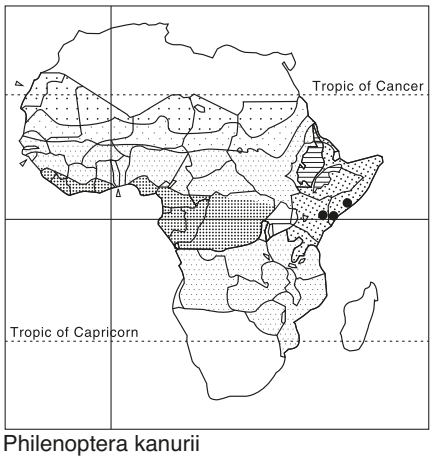
Philenoptera bussei



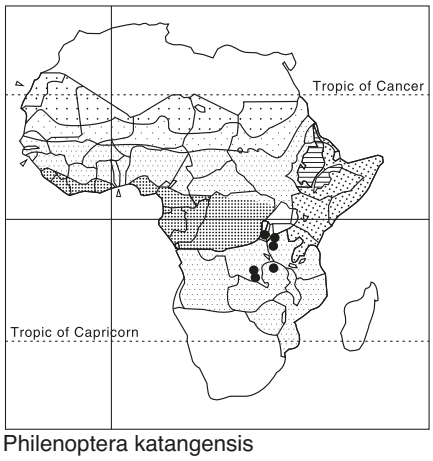
Philenoptera cyanescens



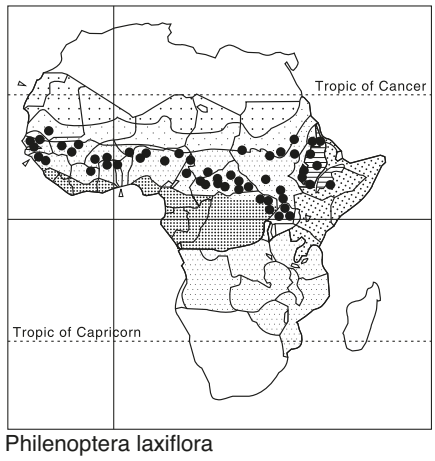
Philenoptera eriocalyx



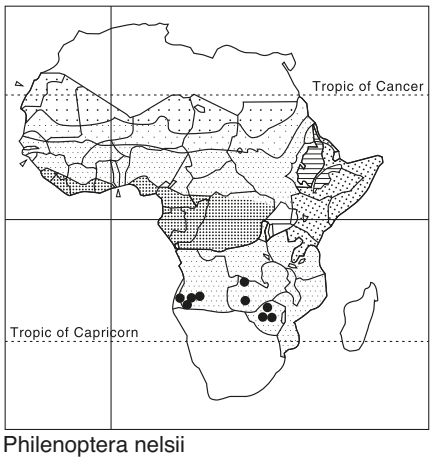
Philenoptera kanurii



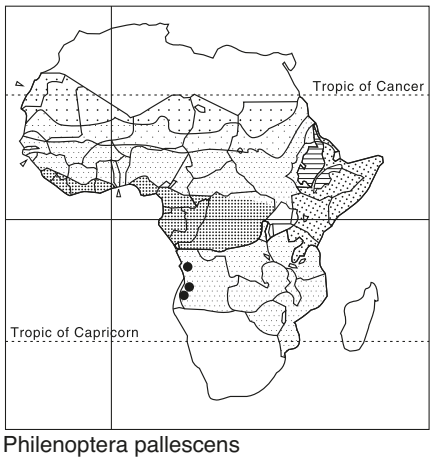
Philenoptera katangensis



Philenoptera laxiflora



Philenoptera nelsii



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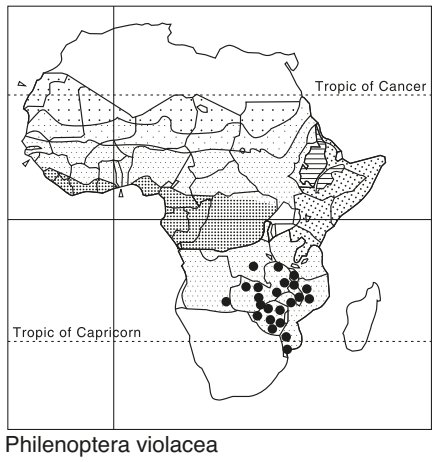
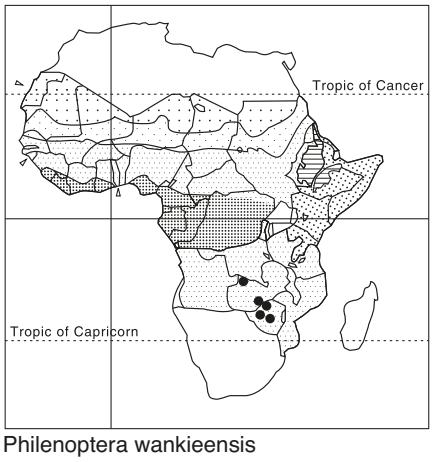
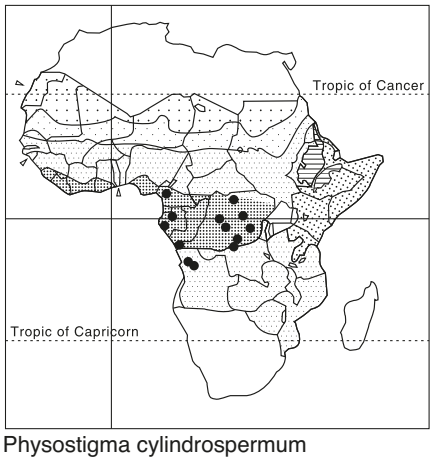


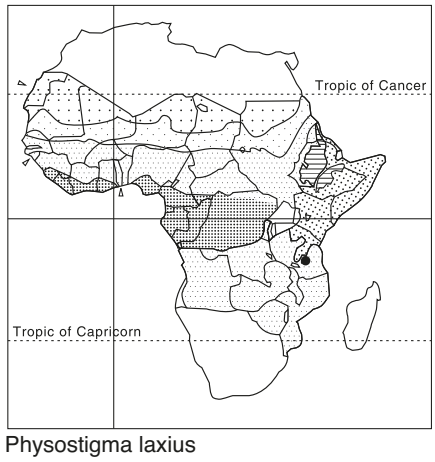
Philenoptera violacea



Philenoptera wankieensis



Physostigma cylindrospermum



Physostigma laxius

PLATYSEPALUM / *8*

Poorly known genus, in need of revision. Several types lost (B). For one taxon the corolla is unknown. Fruits are lacking for 2 recognized and 3 doubtful taxa. Seeds are unknown for 1 recognized species and in one doubtful taxon, and no mature seeds seen in another taxon. The ecology is unknown for 1 species. One recognized and 3 doubtful species are known only from the type.

Platysepalum chevalieri Harms, incl. var. *aureum* Hauman; non *Millettia chevalieri* Harms – Icon.: T. Durand & De Wildeman in Bull. Soc. Roy. Bot. Belgique 36(2): pl. VI, 1897, sub nom. *P. violaceum.*

syn.: *P. violaceum* auctt., non Welw.

Tree 3-8-18 m, with a trunk 25-40 cm Ø, or sarmentose shrub; branches glabrous, reddish brown; leaves sparely yellow-hairy underneath; flowers white, scented, in panicles.

Primary and secondary, dry or swampy forests; islands in rivers, "elephant baths"; riverine forest; wooded savanna; to 600 m alt.

Variable in size of leaves (up to 40 cm long) and in size and shape of leaflets; very similar to those of *P. violaceum.*

Pods rarely present in herbaria.

P. chrysophyllum Hauman

Shrub c. 6 m tall, with drooping, much-branched branches; young twigs pubescent, later glabrescent; leaves golden-hairy beneath; flowers white, veined red, mauve or bluish, in panicles; pod unknown.

Ecology unknown.

Known only from the type gathering of 1932 (Lebrun 5230).

Very similar to (and perhaps conspecific with) *P. chevalieri,* but with more numerous leaflets.

(P. cuspidatum Taub.)

(?) Tree with glabrous branches; leaflets 3; flower panicles with white tomentum; corolla and pod unknown.

Gallery forest.

Known only from the type (B, destroyed) collected in the 1870s or 1880s (Pogge 766). The plant has never been recollected.

Very close to *P. violaceum* (which sometimes has only 3 leaflets), and probably a synonym under the latter.

Not mapped separately, but indicated by a triangle on the map of *P. violaceum.*

(P. ferrugineum Taub.)

(?) Tree with rusty-tomentose twigs, leaves and inflorescences, later glabrescent; leaflets 9, rusty-tomentose beneath; calyx large; pod unknown.

Gallery forest.

Known only from the type (B, destroyed) collected in the 1870s or 1880s (Pogge 799) near the site for *P. cuspidatum.* The plant has never been recollected.

Very close to and probably conspecific with *P. pulchrum,* which normally has smaller flowers.

Not mapped separately, but indicated by a triangle on the map of *P. pulchrum.*

P. hirsutum (Dunn) Hepper

Vigorous liane or shrub; branchlets, leaves and inflorescences densely rusty-pilose at first; flowers large, purple and white in long panicles; pod broad, rusty stiff-hairy, with thick woody margins.

Forest.

(P. hypoleucum Taub.)

(?) Bushy tree c. 5 m; branches drooping; branchlets reddish, glabrous; leaflets 7-11, ± glabrous, whitish beneath; panicles long; floriferous branchlets much reduced; flowers white; pod thick, ± glabrous.

Riverine forest; savanna; "seems to be rare".

Holotype (Pogge 816, B); also Pogge 766 (B) cited, both probably destroyed.

Similar to (and perhaps conspecific with) *P. poggei* (which has green leaflet under-side and slightly different calyx lobes), collected in the same locality (Kasai, Mukenge).

Not mapped separately, but indicated by a triangle on the map of *P. poggei.*

P. inopinatum Harms

Small tree, shrub or liane 4-6 m tall; twigs grey, pubescent when young; leaflets (5-)7, appressed pubescent (sometimes with golden sheen) beneath; inflorescence grey-brown pubescent; floriferous branchlets much reduced; flowers mauve, strongly veined; mature seeds unknown.

Lowland dry evergreen forest margins; evergreen bushland on orange sandy soil; also in forest climbing on tall trees; secondary growth; 10-250 m.

P. poggei Taub.

Liane or scandent (?) shrub; branchlets purple, glabrous; leaflets 7-11, green beneath; floriferous branchlets much reduced, rusty-tomentulose; flowers large, white, purple inside; pod and seeds unknown.

Forest.

Holotype (Pogge 901, from Kasai, Mukenge, B) destroyed, and determination of other specimens thus doubtful.

Similar to *P. hypoleucum* (See above) and mapped together.

P. pulchrum Louis ex Hauman

Liane (or erect shrub?) with stems to 8 cm Ø; branchlets brown-pubescent; leaflets 9-11(-13), like all other parts incl. inflorescence and pod rusty-pubescent; inflorescence long; floriferous branchlets only little reduced (less than in *P. hirsutum);* flowers white, veined reddish.

Edges of primary forest, forest glades, riverine forest, riversides; locally common.

Variable in density and colour of indumentum, number and size of leaflets, and size of flowers.

P. ferrugineum and *P. scaberulum* seem to be very close, if not conspecific (mapped together with *M. pulchrum).*

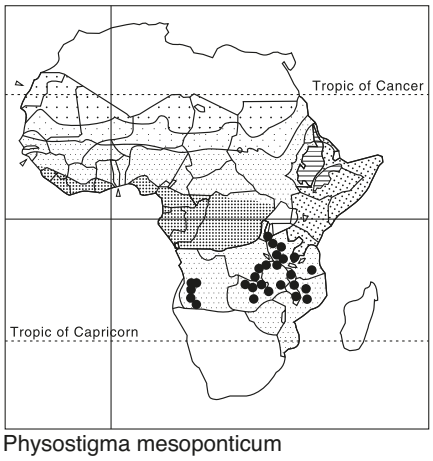
(P. scaberulum Harms)

Small shrub or (?) scandent shrub; branchlets shortly brown-pubescent; leaflets 7-9, ± glabrous above, shortly puberulous and sub-scabrid to the touch beneath; inflorescences brown silky hairy; pod and seeds unknown.

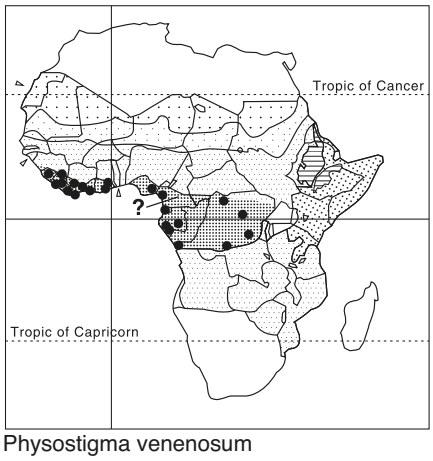
Forest.

Known only from the type collected in 1911 (Mildbraed 5529; B; destroyed?).

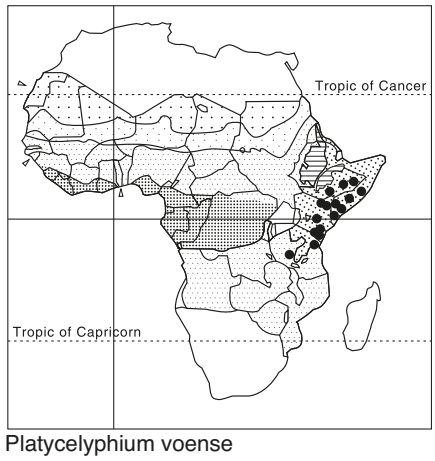
Similar to *P. pulchrum;* not mapped separately, but with *P. pulchrum.*



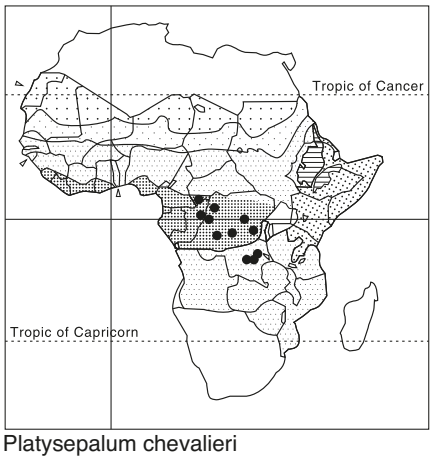
Physostigma mesoponticum



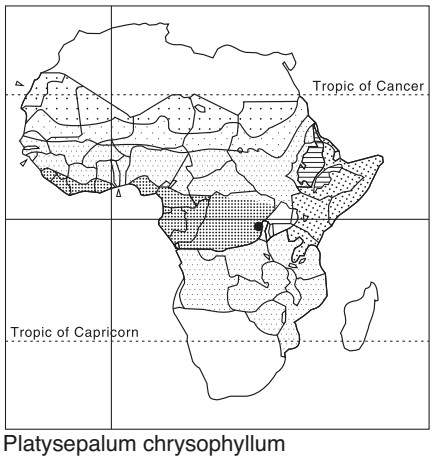
Physostigma venenosum



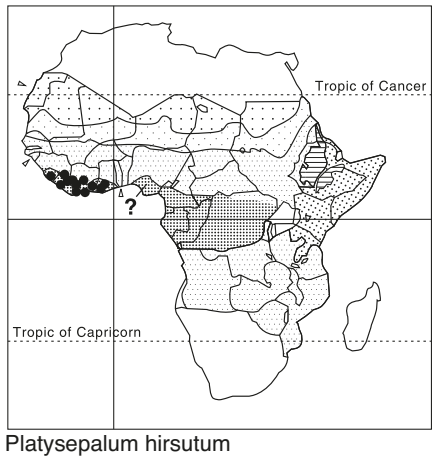
Platycelyphium voense



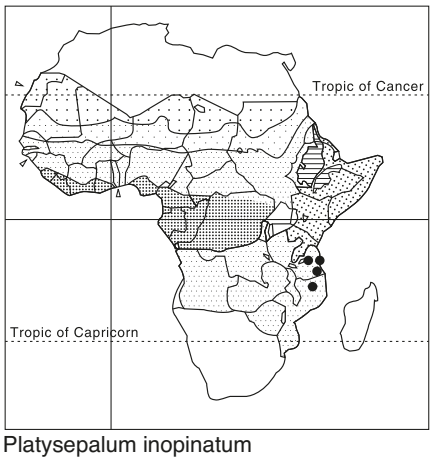
Platysepalum chevalieri



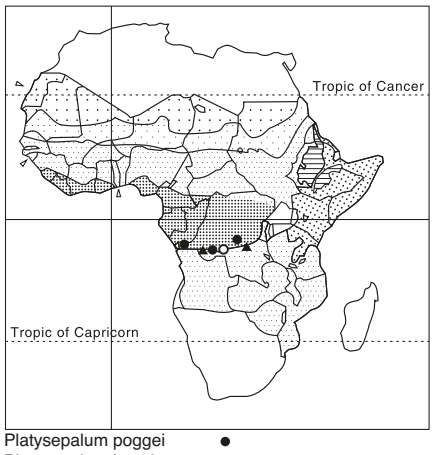
Platysepalum chrysophyllum



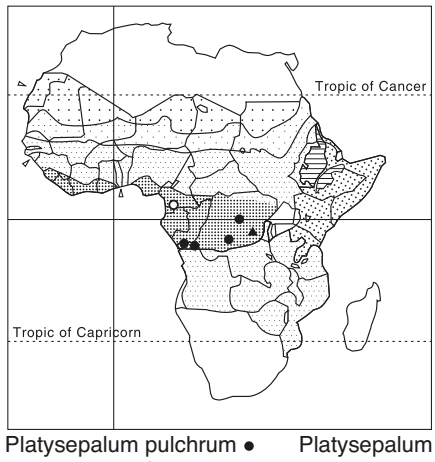
Platysepalum hirsutum



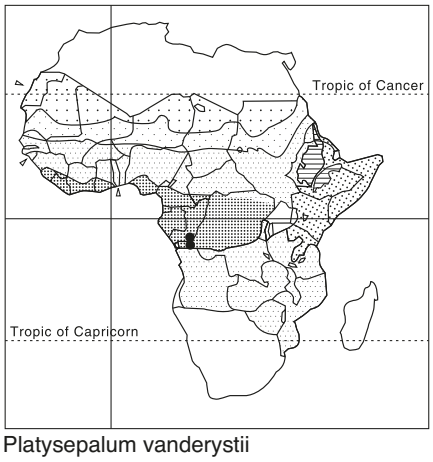
Platysepalum inopinatum



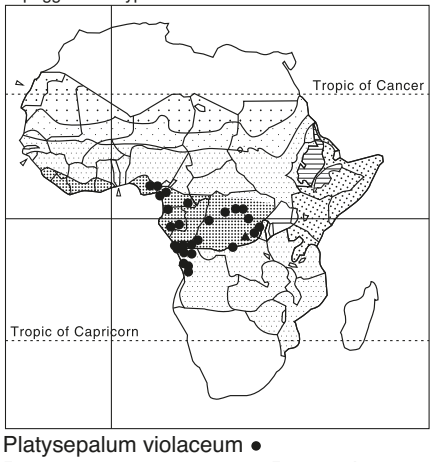
Platysepalum poggei ●
Platysepalum hypoleucum ▲
P. poggei & P. hypoleucum ○



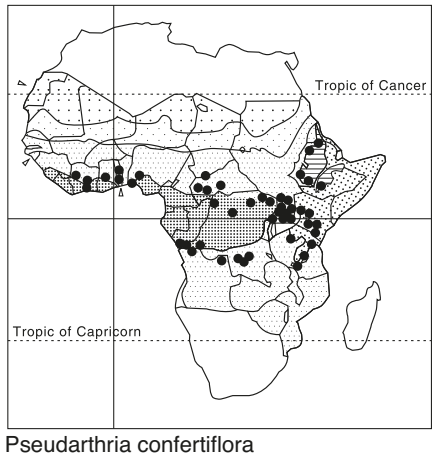
Platysepalum pulchrum ● Platysepalum
Platysepalum ferrugineum ▲ scaberulum ○



Platysepalum vanderystii



Platysepalum violaceum ●
Platysepalum violaceum & P. cuspidatum ▲



Pseudarthria confertiflora

PLATYSEPALUM

P. vanderystii De Wild.

Tree, shrub or shrubby liane ; branchlets, leaf petiole and leaflet main nerves rusty hairy at first, later glabrous ; leaflets 13-17, pubescent with spreading hairs beneath, and often above ; inflorescences long, very dense ; floriferous branches well-developed ; flowers violet blue, large ; pod long, 3-5-seeded.

Sandy savanna, gallery forest.

P. violaceum Welw. ex Bak.

Small lax spreading tree, with bole 8-20 cm Ø, or shrub ; bark smooth, red ; branchlets glabrous, brownish ; leaflets (3-)7-9, finely white (var. **vanhouttei)** or yellowish appressed pubescent beneath at first, or glabrous ; inflorescence large, paniculate ; bracteoles persistent ; flowers conspicuous, yellowish white veined reddish, or mauve or blueish.

Primary, secondary and gallery forests on firm or marshy ground ; forest margins, secondary thickets, rather rare (Angola) ; c. 400-800 m alt. (Angola).

Variable in size of bracteoles (See under the varieties below) and in pubescence of leaflets.

Comprises 3 vars.: – var. **ebracteolatum** P. Sousa from Angola (Congo) lacking or with rudimentary bracteoles ; – var. **vanhouttei** (De Wild.) Hauman with small bracteoles (3-5 mm long) and lower surface of leaflets sparsely white-hairy in W and SW part of range [syn.: *P. ledermannii* Harms ; *P. polyanthum* Harms ; *P. tessmannii* Harms, incl. var. *longibracteolatum* Pellegr.] ; – var. **violaceum** with larger bracteoles (7-10 mm long), in Zaire and N Angola [syn.: *P. violaceum* var. *angustibracteolatum* De Wild. and var *bequaertii* De Wild.].

Can be confused with *P. chevalieri* (with caducous bracteoles and fewer pairs of leaflets).

P. cuspidatum with few pairs of leaflets seems very close (if not conspecific). It is mapped together with *P. violaceum* (triangle).

(PLEIOSPORA)

SYNONYMS :

Pleiospora bolusii Dummer = **Pearsonia cajanifolia** subsp. **cryptantha**

buchananii Harms = **P. cajanifolia** subsp. **cryptantha**

cajanifolia Harv. = **P. cajanifolia** subsp. **cryptantha**

cryptantha (Baker) Bak. f. = **P. cajanifolia** subsp. **cryptantha**

gracilior Dummer = **P. cajanifolia** subsp. **cajanifolia**

grandifolia (Bolus) Dummer = **P. cajanifolia** subsp. **cajanifolia**

holosericea Schinz = **P. cajanifolia** subsp. **cryptantha**

latibracteolata Dummer = **P. grandifolia** subsp. **latibracteolata**

macrophylla Dummer = **P. cajanifolia** subsp. **cryptantha**

paniculata Bolus ex Dummer = **P. cajanifolia** subsp. **cryptantha**

(PODLECHIELLA)

Podlechiella vogelii (Webb) Maassoumi & Kazempour Osaloo = **Astragalus vogelii**

PSEUDARTHRIA / *4*

Pseudarthria confertiflora (A. Rich.) Bak.

bas.: *Rhynchosia confertiflora* A. Rich.

syn.: *Pseudarthria hookeri* Wight & Arn. var. *confertiflora* (A. Rich.) Schindl.

Perennial erect herb or subshrub 0,4-1,5 m tall, with pubescent to velvety stems and leaves (beneath), and with a thick rhizomatous rootstock ; flowers small, reddish-purple in very dense inflorescences ; pod to 6-seeded.

Grassland, *(Loudetia arundinacea)* grassland with scattered trees, on sand, woodland, scrub, thickets ; also with bracken in forest glades ; uncommon (Kenya) ; 900-2500 m alt.

Intermediates between **P. confertiflora** (sometimes only considered a variety of **P. hookeri)** and **P. hookeri** occur in E. Africa.

P. crenata Welw. ex Hiern

Erect perennial herb 0,5-0,7 m tall ; stem scarcely branched up to the inflorescence, furrowed, hispid-pubescent, rigid, reddish-brown ; inflorescence terminal, erect, lax, half the length of the plant ; flowers purple ; pod ± 6-seeded.

In bushy places with tall herbage at the borders of forests along rivers ; c. 1500 m alt.

P. fagifolia Bak.

Erect subshrub 1-1,5 m tall, with firm-herbaceous sulcate grey-silky ascending branches ; leaves silky-hairy ; flowers reddish in long slender lax racemes ; pod few-seeded.

Savanna, forest galleries with *Raphia* and sometimes in bamboo vegetation (Senegal).

Similar to **P. hookeri.**

In Gabon = probably **P. hookeri.**

P. hookeri Wight & Arn.

syn.: *P. macrophylla* Bak. ; *P. alba* A. Chev. ; *Desmodium kerstenii* O. Hoffm. ; *Anarthrosyne densiflora* Klotzsch ; *A. robusta* E. Mey.

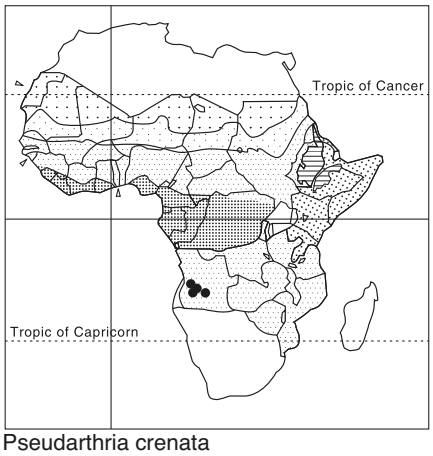
Perennial erect herb or subshrub 0,3-3(-4) m tall from a thick rhizomatous rootstock ; stems strongly ribbed, pubescent to velvety, stiffy-branched ; leaves hairy (catching on hands and clothing) ; flowers purple, blue, rose or white in long, very lax racemes (to 35 cm) ; pod to 12-seeded.

Coarse lowland to upland grassland, wooded and bushed grassland, *Brachystegia, Acacia, Uapaca* and other open woodlands, scrub, sometimes gregarious in savanna ; locally common ; also by rivers in rocky places, old cultivations and plantations ; swampy sites in lowland and montane situations ; forest glades ; at forest edges along rivers (Angola) ; neglected *Cedrela* plantation with regenerating mixed woodland of *Combretum collinum, Stereospermum kunthianum, Acacia hockii, Albizia grandibracteata* on ground with rocky outcrops (Sudan, Imatong Mts) ; 1-2200 m alt.

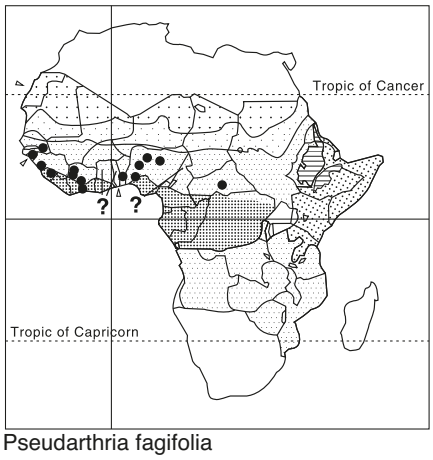
S. Africa (NE) ; Madagascar, Mauritius (formerly cultivated), Réunion.

Comprises 2 vars.: – var. **argyrophylla** Verdc., with thick silvery-grey velvety indumentum on stems and leaves (beneath) from W Africa to Sudan ; – var. **hookeri** in E and S part of range.

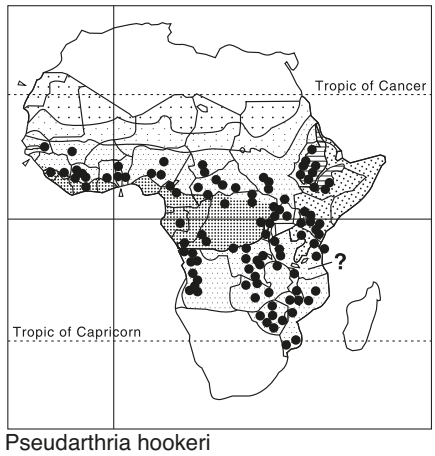
Easily confused with *Desmodium salicifolium* and also *D. tanganyikense,* but the latter different in having distinctly jointed pods breaking up into individual segments, and leaflets with secondary veins not reaching the margins.



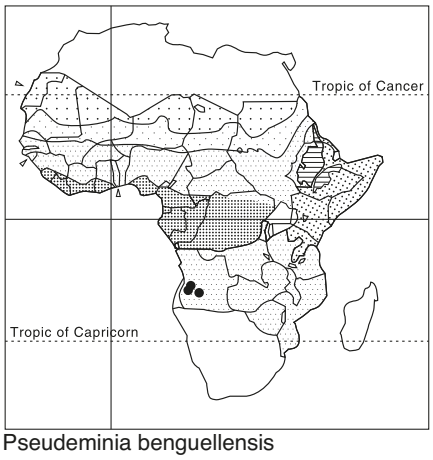
Pseudarthria crenata



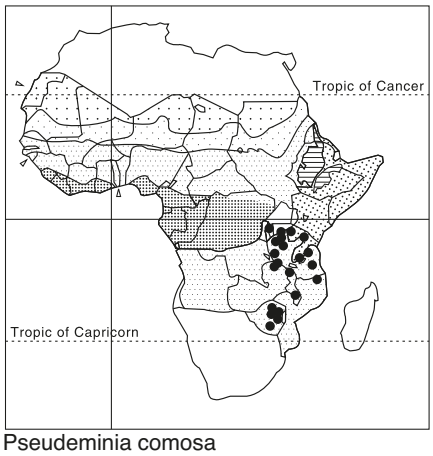
Pseudarthria fagifolia



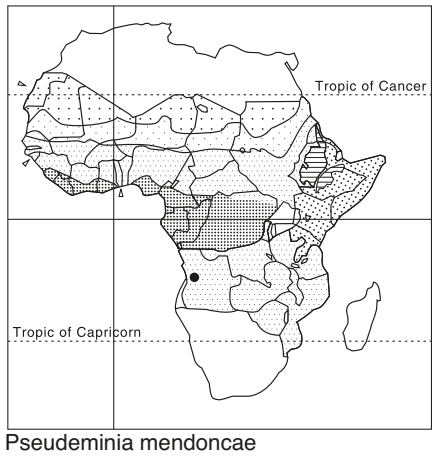
Pseudarthria hookeri



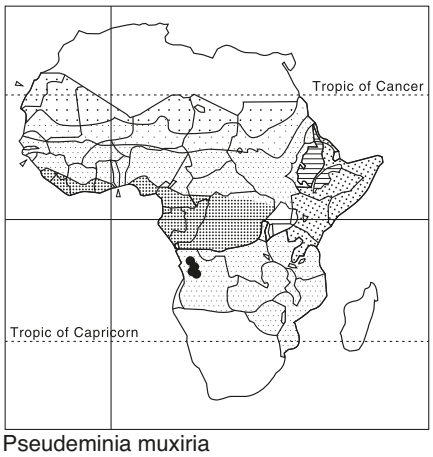
Pseudeminia benguellensis



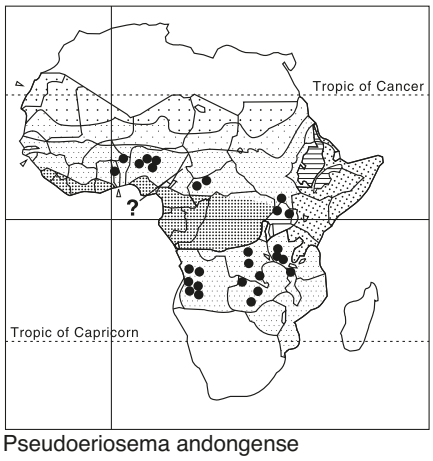
Pseudeminia comosa



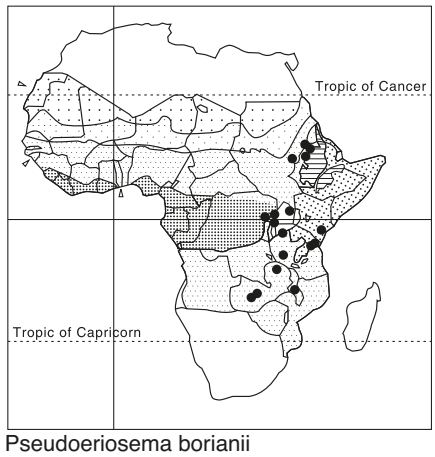
Pseudeminia mendoncae



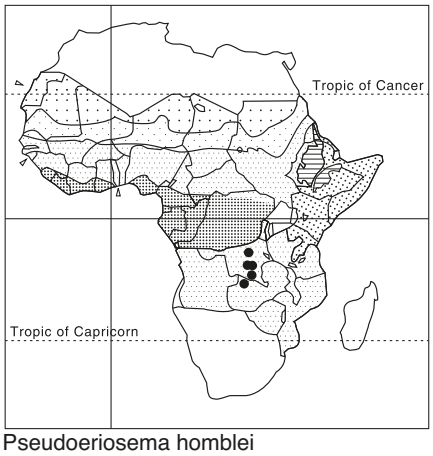
Pseudeminia muxiria



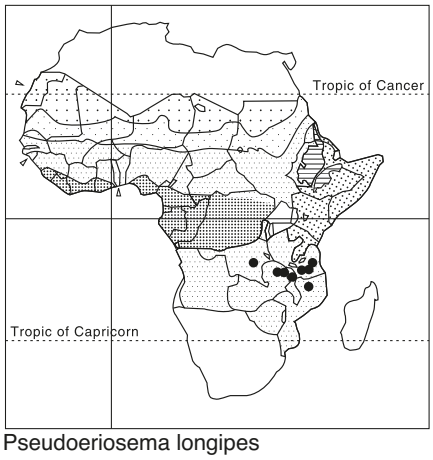
Pseudoeriosema andongense



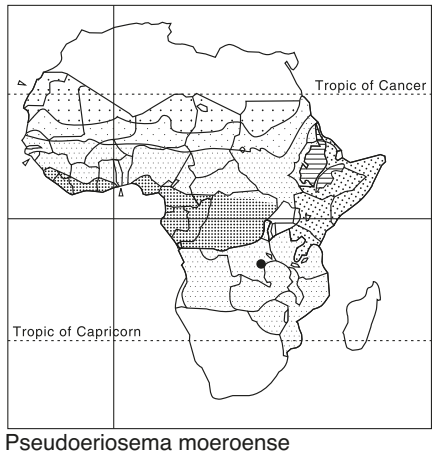
Pseudoeriosema borianii



Pseudoeriosema homblei



Pseudoeriosema longipes



Pseudoeriosema moeroense

SYNONYMS:

Pseudarthria alba A. Chev. = **Pseudarthria hookeri** var. **argyrophylla**

cordata (Klotzsch) Walp. = **Desmodium velutinum**

hookeri Wight & Arn. var. *confertiflora* (A. Rich.) Schindl. = **Pseudarthria confertiflora**

macrophylla Welw. ex Bak. = **P. hookeri** var. **hookeri**

PSEUDEMINIA / *4*

Three species poorly known: fruit unknown (2 spp.) and mature fruit not seen (1 sp.); ecology not recorded (1 sp.); one species known only from the type.

Pseudeminia benguellensis (Torre) Verdc.

bas.: *Rhynchosia benguellensis* Torre

syn.: *Eriosema muxiria* sensu Bak. f. p.p. quoad specim. Gossweiler 1769, non Bak.; and sensu Rossberg, Feddes Repert. 39: 166, 1936.

Erect subshrub with striate or angled stems to 0,8 m tall, densely hairy when young,arising from a rhizomatous woody rootstock; leaflets long, narrow (4-11 × 3-6 cm); inflorescences arising from base of stem; flowers blue; fruit unknown.

Dry grassland ("anharas"); c. 1700 m alt.

P. comosa (Bak.) Verdc. – Icon.: Fl. Zambes. 3/5: 46, 2001.

bas.: *Rhynchosia comosa* Bak.

syn.: *Eriosema urostachyum* Harms; *E. lobophyllum* Harms; *Rhynchosia pseudocomosa* name commonly used in herbaria but unpublished.

Trailing or climbing robust perennial herb, 2-9 m long, when prostrate often forming spreading tangled mats; rootstock tuberous; stems slightly ridged, densely golden-hairy; leaflets discolorous; flowers in densely many-flowered racemes (4-42 cm long); standard pale blue purple-veined, wings and keel violet.

Miombo woodland, *Julbernardia-Brachystegia* and *Combretum-Terminalia* transition woodland, and bushland; cultivations; 500-1800 m alt.

Variable in denseness of inflorescence: from lax to extremely dense.

P. mendoncae (Torre) Verdc.

bas.: *Rhynchosia mendoncae* Torre

Erect subshrub 1-1,5 m tall; stems and branches striate, densely golden-hairy; leaflets velvety, large (9-13 × 7-11 cm); flowers purplish blue in very dense velvety hirsute inflorescences; fruit unknown.

Ecology unknown.

Resembling *P. muxiriae* but stems more densely hairy and leaflets larger.

Known only from the type collected in 1937 (Exell & Mendonça 3067).

P. muxiria (Welw. ex Bak.) Verdc.

bas.: *Eriosema muxiria* Welw. ex Bak.

syn.: *Muxiria utilis* Welw. nom. nud.

Erect subshrub 1-1,7 m tall, with densely grey-hairy stems, hardwoody at base, arising from a very thick obliquely descending fleshy tuber 8 cm long, c. 2,5 cm Ø, and 1,2-1,8 m long rhizomes; leaflets

smaller than those of *P. mendoncae,* c. 6 × 9 cm, appressed-strigose; flowers blue or violet, variegated with yellow and purple, sometimes almost blue, in laxer and less hairy racemes (than *P. mendoncae);* mature pod unknown.

Rocky rather dry woods at river banks; very frequent.

Sometimes cultivated (roots used with fruits of *Eleusine* to make a kind of beer, "oála").

PSEUDOERIOSEMA / *5*

A small tropical African genus. *P. moeroense* poorly known: pod not seen and only type gathering existing.

Pseudoeriosema andongense (Welw. ex Bak.) Hauman, incl. subsp. *bequaertii* (De Wild.) Verdc.

syn.: *P. bequaertii* (De Wild.) Hauman; *Eriosema* ? *holophyllum* Bak. f.; *Glycine holophylla* (Bak. f.) Taub.; *Glycine bequaertii* De Wild.; *Eriosema atacorense* A. Chev., nomen.

Erect or rarely straggling perennial half-woody herb or subshrub (5-)12-90 cm tall, with 1 to few simple or little-branched, long spreading white-hairy stems from a woody root-stock; plants sometimes flowering when stem very short (5-15 cm) with small leaves; leaves 1-foliolate, to 17 × 10 cm; flowers very small, white, in long-pedunculate heads.

Grassland, scrub, *Brachystegia* and *Combretum-Pterocarpus-Lannea* woodland, open grassland with bamboo, grassland with scattered bushes, chipya/dambo margins; thickets at river; on lateritic soil; 540-1670 m alt. (540-1400 m in Fl. Zambes. area).

Variable in shape of leaves and inflorescences, and in size of flowers; but the distinction of 2 subspp. not possible (fide Verdcourt in Fl. Zambes. 3/5: 31, 2001.

P. borianii (Schweinf.) Hauman

syn.: *Rhynchosia grantii* Bak.; *Glycine borianii* (Schweinf.) Bak. – Both of subsp. **borianii.**

Perennial usually trailing or rarely suberect herb 0,3-0,5 m tall or 0,3-2,5 m long; stems twining or spreading with whitish deflexed bristly hairs or dense rather spreading ferruginous indumentum; most leaves 3-foliolate, bristly pubescent; flowers very small, pink, red or purplish in short-pedunculate heads.

Miombo and mixed deciduous woodland, with *Acacia* and *Lonchocarpus,* grassland on black cotton clay soils (Fl. Zambes. area); coarse grassland, seasonally flooded plains; 590-1200 m alt. (subsp. **borianii)**.

Bushland, grassland, seasonal-swampy grassland; 45-300 m (subsp. **longipedunculatum** Verdc., in coastal SE Kenya, NE Tanzania).

Variable in type of indumentum, size and shape of leaves and inflorescences, and in size of flowers.

Comprises 2 subspp.

P. homblei (De Wild.) Hauman, excl. var. *latistipulatum* Hauman (= **P. longipes)**.

Perennial herb or subshrub with few erect, ± angular, pubescent stems 0,5-1 m tall, from a thick fibrous rootstock 25-30 cm long, 2,5 cm Ø; leaves 3-foliolate, densely velvety with whitish hairs and raised-reticulate venation (beneath); flowers very small, white, in dense long-pedunculate heads.

Dambo in woodland with tall grasses, subject to fierce annual fires (chipya), savanna; c. 1200-1350 m alt. (Zambia).

PSEUDOERIOSEMA

P. longipes (Harms) Hauman

syn.: *P. homblei* (De Wild.) Hauman var. *latistipulatum* Hauman

Erect or decumbent perennial herb with several short spreading-hairy stems, sometimes corky near the base, 20-30 cm tall, from a woody rootstock 17 cm long, 1 cm Ø; leaves mostly 3-foliolate (lower ones 1-foliolate), *leaflets narrow,* bristly pubescent with raised venation beneath; flowers very small, white, in short-pedunculate heads.

Brachystegia woodland, on sandy soils; 800-1400 m alt.

P. moeroense (De Wild.) Hauman

Herb or? suffrutex, much-branched from the base with erect rusty pubescent angular stems, woody at base, 30-40 cm tall; leaves 3-foliolate; flowers very small, white, in dense ± long-pedunculate heads; pod unknown.

Wooded savanna; 100 m alt.

Known only from the type collected in 1904.

Poorly known species close to *P. longipes.*

SYNONYMS :

Pseudoeriosema andongense (Welw. ex Bak.) subsp. *bequaertii* (De Wild.) Verdc. = **Pseudoeriosema andongense**

bequaertii (De Wild.) Hauman = **P. andongense**

homblei (De Wild.) Hauman var. *latistipulatum* Hauman = **P. longipes**

PSEUDOVIGNA / *2*

Pseudovigna argentea (Willd.) Verdc. – Icon.: Fl. Zambes. 3/5 : 48, 2001.

bas.: *Dolichos argenteus* Willd.

syn.: *Glycine dentata* Schumach. & Thonn.; *Vigna benthamii* Vatke

Vigorous trailing or climbing perennial herb from a woody rootstock; stems several m long, ridged, covered by brown hispid hairs; leaflets lobed, 3-10 × 3-10 cm; flowers white or pink in 3-7 cm long racemes; pod with brown hispid hairs, 2-3-seeded.

Coastal grassland; weed of tapioka fields (Kenya); 0-50 m alt.

Cultivated in Zimbabwe (Harare).

Disjunct distribution: on the opposite coasts of the African continent.

P. puerarioides Ern

Vigorous trailing or climbing perennial herb; stems several m long, ridged covered by brown hispid hairs; leaflets entire, 14 × 11 cm; flowers pale mauve or blue, pink or white in 10-23 cm long racemes; pod with dark brown hispid irritating hairs, 3-4-seeded.

Forest margins in rocky places between the rocks in damp, shady sites; semi-evergreen forest in submontane situations with recent clearings for coffea and cocoa plantations; cultivated land with rivulet valley; in dry riverbed near road trailing on 2-3 m tall shrubs; roadsides; c. 800 m alt.

Resembling a *Pueraria* species (Asiatic genus).

Probably also in Benin.

PSOPHOCARPUS / *9*

syn.: *Botor* Adans.; *Diesingia* Endl.; *Psilocarpus* Pritzel; *Vignopsis* De Wild.

Striking feature: The winged (square in cross section) pods; although differently developed in the various species; they remain on the plants until dehiscence, and in some cases for a few years.

* * *

A tropical African genus of 10 species "with occasional historical introductions of one useful forage species, *P. scandens*…, to other regions of the New and Old World tropics". – "Inferences can also be made as to the origin of the cultivated winged bean *[P. tetragonolobus]* from within Africa, including the identification of the specific progenitor as *P. grandiflorus."* (D. K. Harder in B. Pickersgill & J. M. Lock, Eds.; Advances in Legume Systematics 8 : 41-51, 1996.)

Additional herbarium and live material needed in particular for *P. lukafuensis, P. monophyllus, P. obovalis* and sp. A (of Maxted 1990). For these 3 species only immature pods known, seeds unknown; presence of undergrouond tuber unknown.

* * *

The account is based on Verdcourt & Halliday's revision in Kew Bull. 33 : 191-227, 1978.

Psophocarpus grandiflorus R. Wilczek

Perennial climbing herb with non-tuberous root; stems appressed pubescent, finally glabrescent, to 5 m long; leaflets 3, broad; flowers large, purple or pale blue in elongated racemes; seeds large.

Upland bushland, forest and grassland; edges of marshy areas, in steep valleys with small streams in *Pennisetum* associations and twining on *Cyperus* (Zaire); 1600-2300 m alt.

A plant of multipurpose utility (Zaire) occasionally cultivated.

A host-specific fungus *[Synchytrium psophocarpi* (Rac.) Gäumann, false rust] inciting one of the major diseases of the cultivated winged bean in SE Asia, has also been found on this species in Zaire, and as well in Uganda (Harder & Smartt in Econ. Bot. 46 : 187-191, 1992). This could support the hypothesis that *P. grandiflorus* is the closest wild relative and the progenitor of *T. tetragonolobus.*

Also in the highlands of Kenya? (Harder & Smartt, o.c.: 190).

P. lancifolius Harms

Perennial climbing herb with a distinct carrot-shaped tuberous taproot; stems to 5 m long, they can root at the nodes and produce tubers at these points; all parts of the plant yellow-brown appressed pubescent or spreading pilose; leaflets 3, elliptic; inflorescence short, ± umbellate, with few blue or violet-purple flowers with a white throat, greenish-grey outside; pod many-seeded.

Swampy upland grassland, grassland with scattered *Combretum, Bridelia, Parinari, Nuxia, Shrebera,* etc; evergreen rain-forest margins; dambo grassland; also in swampy areas near standing water; streamsides; open bracken grassland, tall dense herb grassland, rough elephant grassland; well-grazed fallow fields, old cultivations particularly on good soil, such as burnt forest or silt near rivers; on volcanic soils (Kivu) and sandy deposits (Shaba); 900-2550 m alt.

PSOPHOCARPUS LANCIFOLIUS

A yellow-seeded variant of the species is covered with a thick brown indumentum; plant height, leaves, pods and seeds are smaller than the dark-seeded form (Harder & al. in Econ. Bot. 44: 403-404, 1990). With a gradient in seed colour: in Uganda black; Kivu Prov.: brown; Shaba: yellow; Malawi: creamy white.

P. lecomtei Tisser.

Perennial completely prostrate non-twining plant from a woody roststock, with leaves flat on the ground; individuals can cover an area 2-3 m Ø; stems numerous, slender, little-branched, ± striate; entire plant covered with white hairs turning brown with age; leaves 1-foliolate, almost round; flowers violet or blue in pedunculate racemes; pod small, constricted between the seeds, wings poorly developed.

Moist woodland, upland savanna with burned grass (the species grows rapidly shortly after fire before *Hyparrhenia* starts resprouting); savanna with *Protea,* grassy savanna, transitional steppe; 1680-1830 m alt. (Zaire).

Whole plant eaten by elephants and ungulates, resulting in a chewed and scraped rootstock.

P. lukafuensis (De Wild.) R. Wilczek

Slender climbing herb with thin glabrous stems to 1 m long; leaflets 3, linear-lanceolate; flowers blue or yellow, few in short long-pedunculate racemes; only immature pod known; seeds unknown. Underground tuber present?

Hyparrhenia savanna, in fallow; open *Acacia polyacantha* woodland with tall dense luxuriant grass; sometimes by dambo margins; 1200-1300 m alt. (Zambia).

P. monophyllus Harms

Subwoody trailing plant with densely pubescent stem above, puberulous beneath, 0,5-1 m tall; leaves 1-foliolate, large, ovate (to 15 × 9,5 cm); flowers blue (or white), many in long-pedunculate racemes; only immature pod known; seeds unknown.

Gallery forest (and margin); xerophilous forest in shady places; roadside on moist ferruginous soil; in the old "lougans" (Burkina Faso).

P. obovalis Tisser.

Prostrate creeping plant with 4-angled stems at first, later round, pale, slightly striate, glabrous; leaflets 3, elliptic, glabrous; flowers pale blue, in long-pedunculate short racemes; only immature pod known; seeds unknown. Underground tuber present?

Roadside; edges of cultivations, in savanna.

Only 2 gatherings known (collected in 1922 and 1938). Presumably a rare species.

P. palustris Desv.

syn.: *P. palmettorum* Guill., Perr. & A. Rich.; *P. longipedunculatus* Hassk. ("longepedunculatus") var. *barteri* Bak.; *Botor palustris* (Desv.) O. Kuntze

Perennial *pubescent* climbing herb with a tuberous rhizome; stems 1-3(-8) m long, mostly hairy at the nodes; leaflets 3, ovate-elliptic, never 3-lobed (cf. *P. scandens)*; flowers pale blue, mauve, purple or white, in racemes (peduncle variable in length); keel beaked at apex. – Mostly *not* blackening on drying.

Bushland; savanna; riverine forest by stream in savanna; moist grassy places, swampy sites; humid alluvium along margins of water lines; (wet) secondary forest near water; thicket on damp soil; edge of marigot.

PSOPHOCARPUS PALUSTRIS

Also found in naturalized populations (use as food and as a cover crop).

Similar to *P. scandens,* but the indumentum is an easily observable feature for distinction between the two species. They have an allopatric distribution; intermediate forms occur where they meet (Centr. Afr. Rep., Cameroon, Nigeria), but such intermediates seem to be rare (Maxted in Kew Bull. 44: 731-741, 1989). – Confusions frequent in (older) literature references.

P. scandens (Endl.) Verdc.

bas.: *Diesingia scandens* Endl.

syn.: *Dolichos suffultus* Grah., nomen; *Psophocarpus longipedunculatus* Hassk. ("longepedunculatus"), excl. var. *barteri* Bak. (= *P. palustris)*; *P. mabala* Welw.; *P. comorensis* (Vatke) Baill.; *Mucuna comorensis* Vatke; Enum. 2: 111, 1992.

Perennial sparsely pubescent to *glabrous* vigorous climbing herb, non-tuber producing, 1-6 m tall; leaflets 3, rhomboid-ovate, ± glabrous beneath, somewhat *lobed* (cf. under *P. palustris)*; flowers pale blue, lilac, mauve or white (standard greenish outside), in racemes with extrafloral nectaries (peduncle variable in lenght); keel not prominently beaked at apex. – *Blackening* on drying.

Woodland and savanna margins, river banks, islands (seasonally flooded) in rivers, swamp and swamp forest edges, marshy places; preferring damp situations; ponds in forest (often rooting in the water); disturbed grasslands, cultivations, fallow land, road- and tracksides; usually in hot river valleys; also in drier grassland; frequently in *Pennisetum* and *Phragmites* thickets; semi-deciduous forest, secondary forest with *Musanga cecropioides* dominant. – Also occurring in naturalized populations (multipurpose use).

S. Tomé; Madagascar; Comoros, Mascarenes. Cultivated elsewhere (India, SE Asia, New Guinea; West Indies; Brazil). – The most widespread species in the genus.

Similar to *P. palustris* (cf. notes under this species).

(P. sp. A) Maxted in Bot. J. Linn. Soc. 102: 105, 116, 1990.

A specimen (de Witte 5608, BR + K), named *Mucuna coriacea* and noted by Verdcourt at K, is of vegetative material only. It has the facies of a *Psophocarpus* sp. near **P. obovalis,** but differs in its erect, self supporting habit and broadly elliptic (3) leaflets, more densely pubescent. Material insufficient for adequate description.

SE Zaire: Shaba, Upemba National Park.

Not mapped.

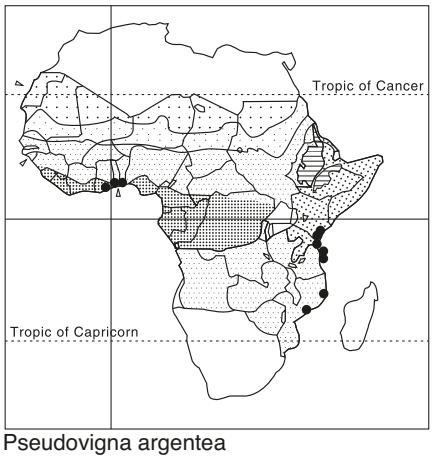
P. tetragonolobus (L.) DC. – The Winged Bean.

bas.: *Dolichos tetragonolobus* L.

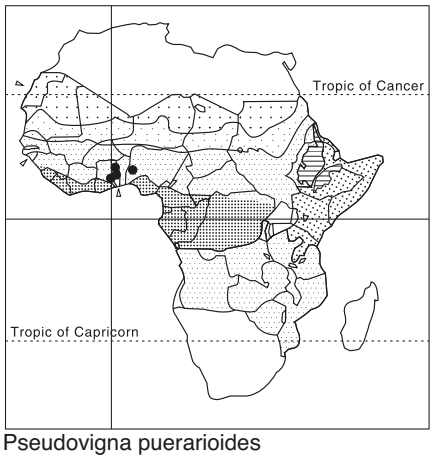
syn.: *D. ovatus* Grah.; *Botos tetragonolobus* (L.) O. Kuntze

Annual or perennial glabrous climbing herb to 3-4 m long, with a tuberous root; leaflets 3, triangular; flowers large, mauve, or mixtures of mauve, cream, blue, yellow-green or red, or occasionally white, 2-10 in (long-)pedunculate racemes; pod 7-26 (-40) cm long, greenish (sometimes purple flecked), with broad wings; seeds large (to 1 cm long).

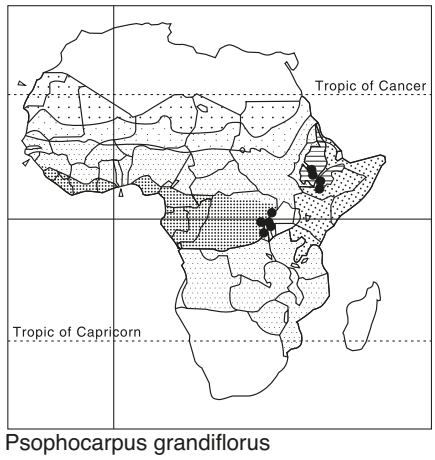
Known only in cultivation, with an estimated 1500-3000 vars. world-wide. Highest genetic diversity in Papua New Guinea, and also in Indonesia. Origin of domestication uncertain.



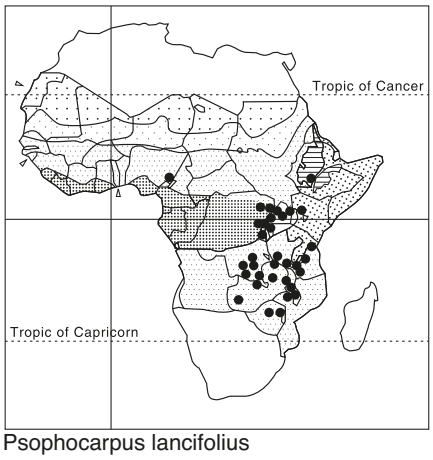
Pseudovigna argentea



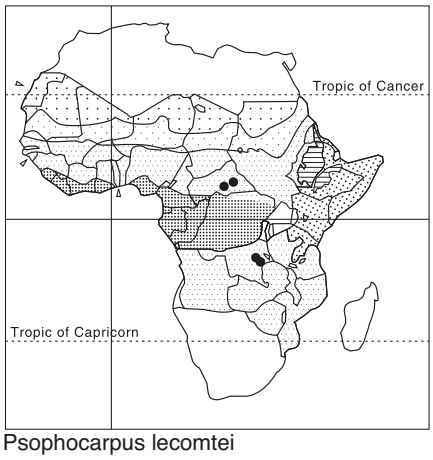
Pseudovigna puerarioides



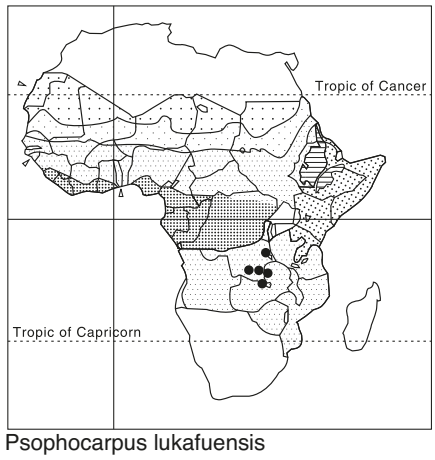
Psophocarpus grandiflorus



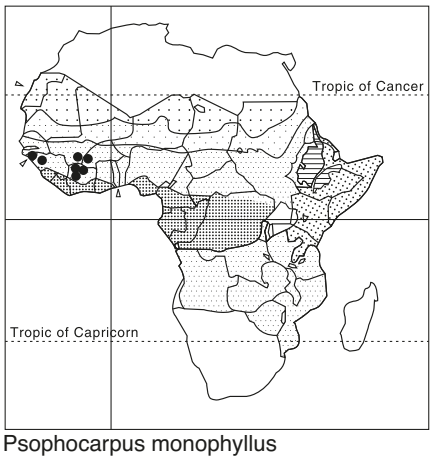
Psophocarpus lancifolius



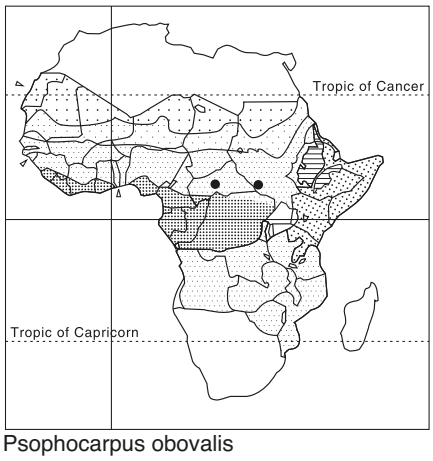
Psophocarpus lecomtei



Psophocarpus lukafuensis



Psophocarpus monophyllus



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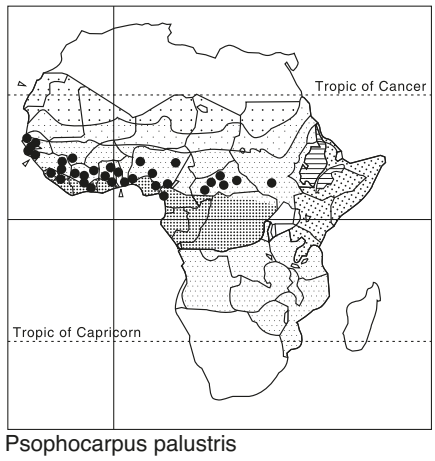
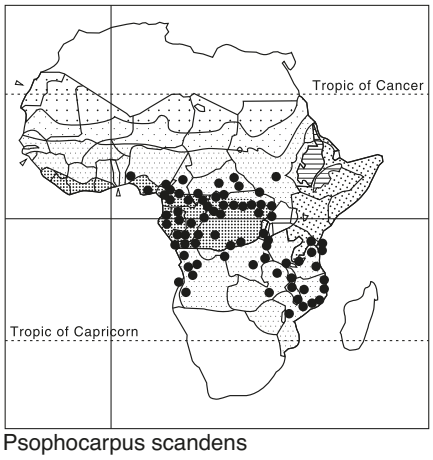
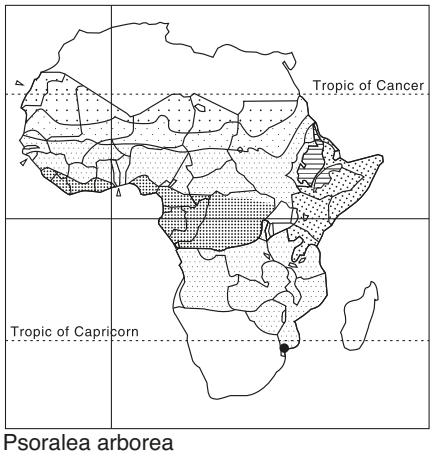


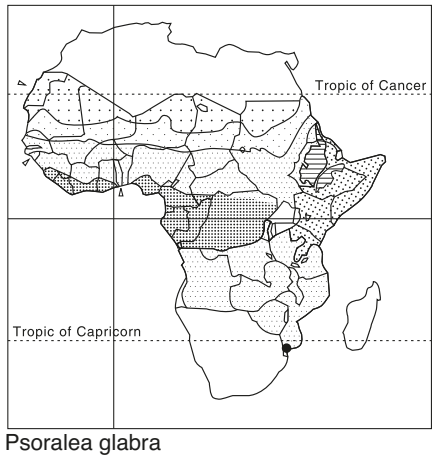
Psophocarpus palustris



Psophocarpus scandens



Psoralea arborea



Psoralea glabra

PSOPHOCARPUS TETRAGONOLOBUS

Most widely cultivated in Asia : Burma, Papua Guinea, Indonesia. Also in West Indies, N S. America, Australia ; in W and SE Africa. – An exceptional vegetable crop in providing a food source at all stages of its life cycle, and all parts edible.

Similar to *P. grandiflorus* but larger in all parts. Perhaps a result of selection through domestication. Recent discovery of a host-specific fungus on *P. grandiflorus* in Zaire, also infecting the Winged bean suggest a relationship (See under *P. grandiflorus* above).

Not mapped.

SYNONYMS :

Psophocarpus cienkowskii Schweinf. ex Bak. f. = **Canavalia ensiformis**

comorensis (Vatke) Baill. = **Psophocarpus scandens**

golungensis Welw. ex Romaniz. nom. illegit. = **P. scandens**

longipedunculatus (“longepedunculatus”) Hassk. s. str. = **P. scandens**

var. *barteri* Bak. = **P. palustris**

mabala Welw. = **P. scandens**

palmettorum Guill., Perr. & A. Rich. = **P. palustris**

palmettorum sensu Andrews, Fl. Pl. Sudan = **P. scandens**

palustris Desv. cv. ‘Wondo Surprise’ Westphal = **P. grandiflorus**

palustris auctt. plur., non Desv. = **P. scandens**

PSORALEA / *2*

A heterogeneous group often split up into segregate genera : *Psoralea* L. s. str. (S. Africa), *Hallia* Thunb. (S. Africa), *Otholobium* C. H. Stirton (E and SE Africa), *Cullen* Medik. (N Africa – India – Sri Lanka – Burma – New Guinea – Australia), *Bituminaria* Heist. ex Fabricius (Mediterranean Europe and N Africa, Black Sea area), and *Orbexilum* Raf. (N., C., S. America).

Classification proposed by C. H. Stirton in Polhill & Raven, Adv. Leg. Syst. 1 : 341-343, 1981.

Below *Psoralea* is treated sensu stricto. For the other genera, see synonyms at the end of the genus.

* * *

Plants with prominent blackish-red glands.

CROW, E. & al. (1997a & b). Leaf anatomy of the genus Psoralea sensu stricto (Psoraleeae, Papilionoideae, Leguminosae). *Bot. J. Linn. Soc.* 124 : 155-182 (a), and Erratum, idem. *Ibid.* 125 : 91 (b).

Psoralea arborea Sims – Icon.: Fl. Zambes. 3/6 : 49, 2000 ; Bot. Mag. 136 : pl. 8331, 1910.

syn.: *P. pinnata* L. var. *latifolia* Harv.; *P. affinis* sensu Hutchinson in Bot. Mag. 136 : pl. 8331, 1910, non Eckl. & Zeyh.

Woody shrub or subshrub 1-3,5 m tall, covered in blackish-red glands ; branches striate, hairy or glabrous ; leaflets 5-7, 3-30x2-20 mm ; flower standard dark violet or blue, wings paler, keel white with violet purple apex. *Cassia*-like shrub.

Rocky places near waterfalls ; 700-800 m alt.

S. Africa.

PSORALEA

P. glabra E. Mey.

syn.: *P. pinnata* L. var. *glabra* (E. Mey.) Harv.

Woody herb or subshrub 0,6-1,5 m tall, with blackish-red glands ; branches striate, ± glabrous ; leaflets 5-9, 10-25x0,7-1,1 mm ; flower standard blue, keel dark-blue purple at apex.

Damp vlei on sandy soil ; c. 15 m alt.

S. Africa.

A single specimen recorded from our area ; further material is needed to confirm the identification (fide Verdcourt in Fl. Zambes. 3/6 : 50, 2000).

SYNONYMS :

Psoralea affinis sensu auct., non Eckl. & Zeyh. = **Psoralea arborea**

alnifolia A. Bertoloni = **Cullen americanum**

americana L. = **Cullen**

andongensis Bak. = **Pseudoeriosema**

bituminosa L. = **Bituminaria bituminosa** (not treated in this work ; See Enum. 2 : 111, 1992)

corylifolia L. = **Cullen**

dentata DC. = **Cullen americanum**

exigua Eckl. = **C. tomentosum**

foliosa Oliv. = **Otholobium**

holubii Burtt Davy = **Cullen holubii** (See under **C. tomentosum)**

lateralis Salisb., nom.illegit. = **Cullen americanum**

obtusifolia DC. = **C. tomentosum**

odorata Blatt. & Hallb. = **C. plicatum**

pinnata L.

var. *glabra* (E. Mey.) Harv. = **Psoralea glabra**

var. *latifolia* Harv. = **P. arborea**

plicata Del. = **Cullen plicatum**

polystachya Poir. = **C. americanum**

tetragonoloba L. = **Cyamopsis**

tomentosa Thunb. = **Otholobium sericeum** (See under **Cullen tomentosum)**

PTEROCARPUS / *13*

Pantropical genus of 20-25 tree species whereof 5 in Indo-Malesia and 6 in tropical America, and 2 trans-Atlantic. – Fruits very diverse with some striking characters, but all species in Africa, excepting *P. santalinoides,* have stipitate fruits. Fruit compressed, 1(-3)-seeded, indehiscent with a narrow to broad wing. Flowers yellow to orange in Africa.

A genus of economic importance (timber, gum or resin, dyes).

Pterocarpus angolensis DC. – Wild Teak. – Icon.: B. van Wyk & al., Photographic guide trees S. Africa : 258, 2000.

syn.: *P. bussei* Harms ; *P. dekindtianus* Harms, incl. var. *latifoliolatus* De Wild.; *P. erinaceus* sensu auctt., non Poir. (e.g. Hiern, Pl. Welw. 1: 279, 1896).

Deciduous tree 5-20(-30) m ; crown open, rounded or spreading ; sometimes a shrub (not in E Africa) 3-4 m tall ; trunk single, straight, to 30 cm Ø ; bark dark grey or greyish brown, rough,

fissured with ± rectangular scales; slash exuding red sap; branchlets slow-growing, with short internodes, brownish or silvery-grey pubescent to floccose-tomentose, tardily glabrescent; leaves to 35 cm long (20 pairs of leaflets); stipules early caducous; flowers large, sweetly scented, in long racemes appearing before the leaves; pod ± orbicular, 9-12 cm Ø, broad-winged, centre with long stiff bristles.

Brachystegia and other deciduous woodlands, wooded grassland; trees often left in areas cleared for cultivation; often on Kalahari sand; 0-1820 m alt. – One of the dominating species of savannas and woodlands. Sometimes exploited for timber.

Variable in width of pod (6,5-13 cm Ø).

N Namibia, Caprivi Strip, Botswana, Swaziland, NE S. Africa.

Graz, F. P. (2004). Description and ecology of Pterocarpus angolensis in Namibia. *Dinteria* 29: 27-39.

Fruits can be confused with those of *P. brenanii,* but bristles lacking, and with leafy stipules.

P. brenanii Barbosa & Torre; Fl. Zambes. 3/5: 57, 2007.

Deciduous tree, ± glabrous, (4-)6-12 m, or shrub 2-3 m tall; crown ascending or spreading; bark pale brown to dark grey, rough, shallowly longitudinally fissured, peeling off in thin rectangular flakes or narrow vertical strips; fertile branchlets lush-growing, stipules long-persistent, leafy (early caducous in *P. angolensis)*; leaves to 23(-32) cm long with 5-7 very large ± circular leaflets; inflorescence large, beautiful; pod flat, oval, c. 10x8 cm, broad-winged, centre lacking bristles (cf. *P. angolensis)*.

Open mopane and miombo woodland; grassland; thickets; also in association with *Acacia, Combretum, Kirkia, Pterocarpus angolensis, Sterculia quinqueloba;* on shallow soil on dry limestone hills and ridges; Karroo sandstone ridges; 300-700 m alt.

Closely related to *P. rotundifolius* but the leaf-like stipules distinguishing. Similar to *P. angolensis* in fruit character (See above).

(P. chrysothrix Taub.) – See under **P. tinctorius** (as var. *chrysothrix)*.

P. erinaceus Poir. – African teak or rosewood.

syn.: *Lingoum erinaceum* (Poir.) O. Kuntze; *Pterocarpus adansonii* DC.; *P. africanus* Hook.

Deciduous tree 12-15 m (or more); bole slightly buttressed when old, to 60 cm Ø; bark rough, fissured, scaly, greyish brown to blackish; slash exuding red resin; crown high, few-branched, open, light; branchlets slow-growing, young sterile ones densely hairy, flowering ones closely set with buds or scars of fallen leaves or inflorescences, finely ribbed, somewhat scaly, glabrous; stipules early caducous; inflorescence much-branched, much-flowered, flowering before the leaves; pod orbicular, 4-7 cm Ø, broad-winged, with lateral beak, centre with sparse to dense prickles.

Open country, wooded savanna, woodland; also edges of dense humid forest; sometimes on shallow soils; gravelly and lateritic soils, often at foot of slopes; 200-1030 m alt.

Has been seriously over-exploited (timber); attempts made to reafforestation of the savanna and establishment of stands on farms. – The heart-wood is a source of red dye.

Not in Angola (= **P. angolensis)**. Gabon?

[P. indicus Willd. fa. **indicus**]

syn.: *P. casteelsii* De Wild. var. *ealaensis* Hauman

Deciduous tree to 30 m tall, with large and high buttresses; crown wide-spreading to dome like; lower branches drooping, sometimes touching the ground; bark shallowly fissured, thin-scaly, peeling off irregularly; centre of pod with bristles [not so in fa. **echinatus** (Pers.) Rojo].

Native in SE Asia, Malesia, Indonesia, Pacific Isl.; evergreeen forests in lowlands up to 600 m alt.

Cultivated in e.g. Sierra Leone, Zaire, Tanzania, Mozambique as a shade tree.

P. lucens Lepr. ex Guill. & Perr. – Icon.: Fl. Ethiop. 3: 103, 1989.

syn.: *Dalbergia praecox* Hochst. ex A. Rich.; *Pterocarpus abyssinicus* Hochst. ex A. Rich.; *P. simplicifolius* Bak.; *Lingoum simplicifolium* (Bak.) O. Kuntze; *Pterocarpus lucens* var. *simplicifolius* A. Chiov. – All of subsp. **lucens.**

Deciduous tree 7,5-18 m; trunk generally straight, to 20 cm Ø, branching low down; crown spreading or irregular; sometimes shrubby, much-branched; bark greyish, finely and shallowly fissured, scaly, sometimes smoothish tending to flake, with a mottled appearance (like the bark of *Psidium guajava)*; slash exuding red gum; branchlets greyish to dark brown, appressed pubescent, soon glabrescent; stipules early caducous; leaves rarely, some or all 1-foliolate (in W Africa); inflorescence short, axillary, with few-many rather small yellow fragrant flowers; pod with short wing decurrent on to a prominent stipe.

Savanna, (dry) wooded grassland, deciduous woodland with *Combretum,* particularly on rocky outcrops (E part of range); marigot, wet but well-drained sites, skeletal soils, lateritic depressions (Mali, S Niger); locally gregarious; 550-1520 m alt. (subsp. **lucens)**. – Hot dry bushveld and secondary thicket, usually on deep sandy soils, Kalahari sand; rocky places, widespread but nowhere common; often codominant with *Baikiaea* and *Combretum* on elevated alluvial plain, on limestone; 200-1800 m alt. (subsp. **antunesii)**. – Resistant to fire.

Variable in habit; with smaller, fewer leaflets (or 1-foliolate), shorter inflorescences and fewer flowers, denser indumentum on young branchlets in W Africa. Slow-growing lush forms in central part of range (approaching subsp. **antunesii)**.

Namibia, Caprivi Strip, N Botswana, NE S. Africa.

Comprises 2 subspp.: – subsp. **lucens** in N part of range. – subsp. **antunesii** (Taub.) Rojo (syn.: *P. stevensonii* Burtt Davy), often multistemmed with stiff spine-like shoots, S of the Zambezi. – Disjunct species.

(P. megalocarpus Harms) – See under **P. tinctorius,** note at the end of the species treatment.

P. mildbraedii Harms, incl. subsp. *usambarensis* (Verdc.) Polhill

Evergreen or semi-deciduous tree 15-25 m; trunk straight, long, clean, to 1,7 m in girth, 60 cm Ø; crown small, rounded; bark greyish or light brown, smooth; slash exuding red gum; branchlets densely brownish hairy, glabrescent; racemes usually in axils of young leaves, or sometimes grouped at end of slow-growing branchlets; flowers yellow; pod flat, 10-12 cm Ø, with very broad wing, not much thickened over the seed.

Evergreen (dry) or semi-deciduous rain-forests, riverine forest; cocoa farms (Ghana); 30-1270 m alt. (300-600 m in E Africa).

Variable in size of flowers (smaller in E Africa).

PTEROCARPUS MILDBRAEDII

Bioko/Fernando Poo. – Disjunct species.

Similar (material from Congo Brazzaville) to *P. officinalis* subsp. *gilletii* in texture and shape of leaflets and in calyx (but in *P. mildbraedii* leaves discolorous, and flowers bigger).

P. officinalis Jacq. subsp. **gilletii** (De Wild.) Rojo

Evergreen or semi-deciduous tree to 30 m; branchlets brownish to blackish, glabrous, straite; leaves concolorous (cf. *P. mildbraedii)*, blackish when dried; inflorescence much-branched; flowers, after anthesis, falling off at the joints; ovary with swollen-based hairs; pod asymmetrical, glabrous, thickened and constricted between seeds (2-4), with narrow wing.

Flooded riverine forest.

Subsp. **officinalis** (syn.: *P. draco* L.; *P. hemiptera* Gaertn.; *P. crispatus* DC.; *P. belizensis* Standl.) in C America, Antilles, N S. America (coastal).

A specimen from Brazzaville (Congo; Thollon 4134) has been misidentified as *P. mildbraedii.*

P. osun Craib

syn.: ? *P. zenkeri* Harms

Tree 12-30 m; bole short, 2,5 m in girth and 80 cm Ø, crooked, sometimes with slight buttresses; crown spreading; bark dark brown, rough, flaking off in irregular patches; slash exuding copious water juice quickly turning red; branchlets and young leaves densely short brown velvety hairy, soon glabrescent, and soft yellowish prickly (tips of prickles at first with drops of sticky liquid); leaves with stout common stalk, very swollen at base; inflorescence much-branched, brown-hairy, appearing when tree in full leaf; flowers yellow, fragrant; pod orbicular, 7-12 cm Ø, broadly winged, soft prickly at centre (the largest fruits in the genus).

Mixed deciduous wet forest; 90-150 m alt.

Confusion (wood) with *Baphia nitida,* the true camwood, possible.

Congo Brazzaville, Zaire ?

P. zenkeri is a doubtful species very similar to *P. osun* but (type) spineless.

P. rotundifolius (Sonder) Druce – Lock in Kew Bull. 54: 208, 1999; Fl. Zambes. 3/5: 58-60, 2007.

bas.: *Dalbergia rotundifolia* Sonder

(Semi-)deciduous tree, 3-25 m, often multistemmed (S part of range), stems often crooked, rarely with a tall straight trunk branching high up; crown irregular, rounded, with drooping foliage; bark rough, light grey or brown, scaling or longitudinally fissured; branchlets often zigzag, pubescent to tomentellous; leaves to 40 cm long; flowers yellow, fragrant with crisped petals in large panicles; pod flat, rounded, thickened over single seed, with narrow coriaceous wing.

Brachystegia woodland, open forest, wooded savanna; on (stony) hills and grassy slopes, plateaux, ridges, in alluvial valleys; fringing forest; often on red clay loam or sandy loam soil; 60-1550 m alt.; common.

Variable in pubescence of flowers, in number and hairiness of leaflets (subsp. **rotundifolius** 5-7, subsp. **martinii** 9-13, subsp. **polyanthus** 13-19).

NW Namibia, Caprivi Strip, N Botswana, NE S. Africa, Swaziland.

PTEROCARPUS ROTUNDIFOLIUS

Comprises 3 subspp.: – subsp. **martinii** (Dunkley) Lock [bas.: *P. martinii* Dunkley; syn.: *P. rotundifolius* subsp. *polyanthus* (Harms) Mendoça & E. P. Sousa var. *martinii* (Dunkley) Mendonça & E. P. Sousa] in C part of range; – subsp. **polyanthus** (Harms) Mendonça & E. P. Sousa [bas.: *P. polyanthus* Harms; syn.: *P. rotundifolius* subsp. *polyanthus* var. *polyanthus* sensu Mendonça & E. P. Sousa] in W and SE parts of range; – subsp. **rotundifolius** [syn.: *P. sericeus* Benth.; *Lingoum sericeum* (Benth.) O. Kuntze; *Pterocarpus mellifer* Welw. ex Bak. ("melliferus"); *Lingoum melliferum* (Welw. ex Bak.) O. Kuntze; *Pterocarpus buchananii* Schinz; *P. mutondo* De Wild.; *P. homblei* De Wild.; *P. claessensii* De Wild.] in N part of range.

Similar, in SE part of range, to *P. lucens* subsp. *antunesii* (multistemmed trees).

P. santalinoides L'Hérit. ex DC.

syn.: *P. esculentus* Schumach. & Thonn.; *Lingoum esculentum* (Schumach. & Thonn.) O. Kuntze; Enum. 2: 111, 1992.

Evergreen (usually) tree 10-15 m; bole to 30 cm Ø, 1 m in girth, branching low down; bark greyish brown, smooth to scaly, thin; branches straggling; occasionally briefly deciduous; foliage shining, stipules late caducous; inflorescence short, hairy; flowers fragrant, brilliant yellow; pods ± orbicular with thick wrinkled centre and narrow wing. Fruits float in water.

Mixed deciduous forest and flooded savanna on lake and lagoon sides, riverbanks. – Very conspicuous when flowering.

N S. America (Amazon region, disjunctly seperated by the Planalto de Mato Grosso, Brazil, Paraguay, Argentina, to c. 27°S).

Also planted (as a talisman) in villages.

P. soyauxii Taub.; Bois Forêts Trop. 7: 292, 1948.

Deciduous tree 30-50 m; bole to 1,4 m Ø and to 2,5 m in girth, straight, cylindrical, free to 32 m height, sometimes with sharp buttresses 3-4 m heigh and 2 m broad at base; bark dark brown, rough, peeling off in thin irregular flakes; slash exuding red juice; branchlets rusty hairy, glabrescent; leaves rusty hairy, leaflets thin, narrow with close-set lateral nerves (character distinguishing it from *P. mildbraedii)*; flowers yellow, rather small; pod flat, papery, orbicular, chartaceous, reticulate.

Evergreen or deciduous forests on firm ground, rain-forest; 50-500 m alt.

Confusion with *P. mildbraedii* possible (cf. above).

P. stolzii Harms – Icon.: F. White & al., Evergreen forest fl. Malawi: 333, 2001.

syn.: *P. tinctorius* " *stolzii* race" sensu Polhill in Fl. Trop. E. Afr., Legumin. 3, Papil. 1: 88, 1971; *P. zimmermannii* Harms

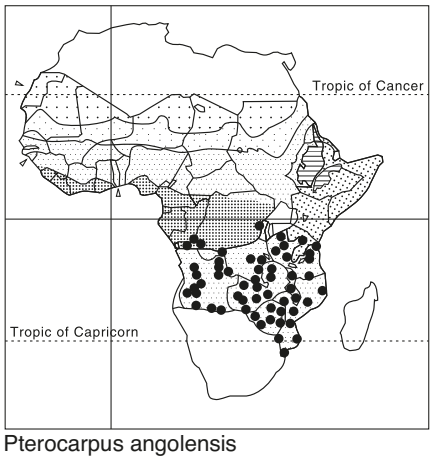
Deciduous tree 9-25 m; crown spreading; bark dark grey, becoming fissured; branchlets tomentose; panicles brownish pubescent, with few laxly inserted primary branches; flowers yellow; pod 6-9 cm Ø, with thickened centre, glabrous or sparsely pubescent.

Lake-shore and riverine forests in canopy; mid-altitude evergreen rain-forest; lake-shore *Brachystegia* transition woodland on termite mounds; 280-1500 m alt. (600-1250 m in N Malawi).

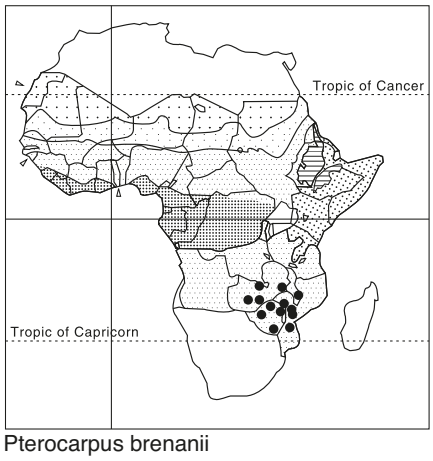
More material needed especially from Malawi.

P. tessmannii Harms

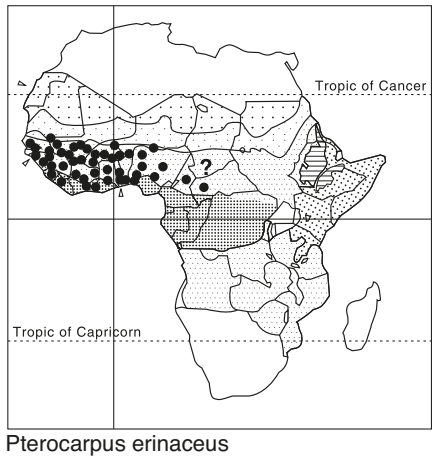
Deciduous tree to 35 m; bole to 1,4 m Ø, with buttresses 5 m high; bark dark brown, flaking off in long narrow vertical strips; slash exuding copious red juice; stipules early caducous; flowers yellow in short panicles; pod oblong, sickle-shaped with long coriaceous wing and thickened centre.



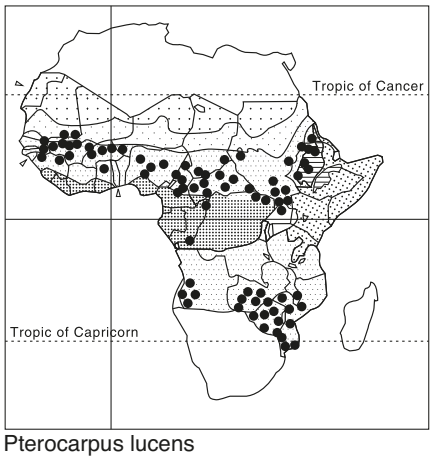
Pterocarpus angolensis



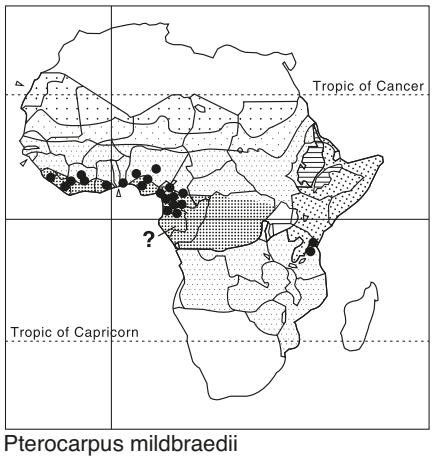
Pterocarpus brenanii



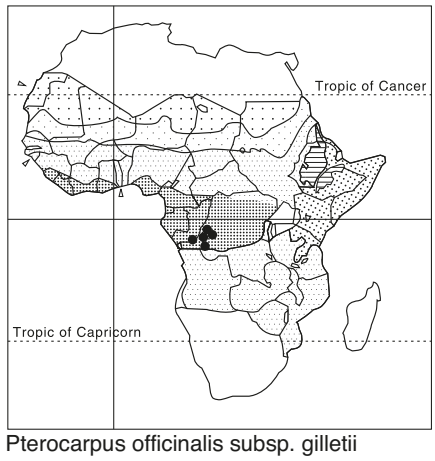
Pterocarpus erinaceus



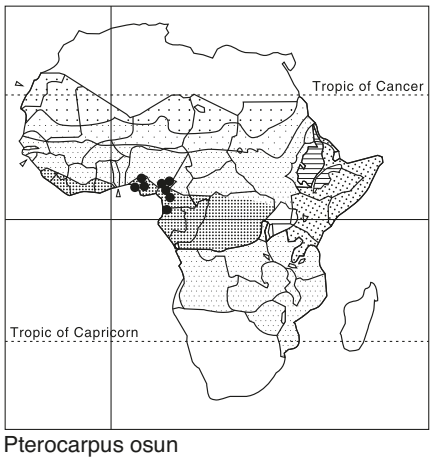
Pterocarpus lucens



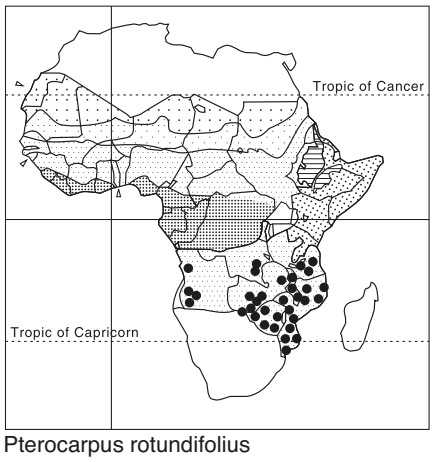
Pterocarpus mildbraedii



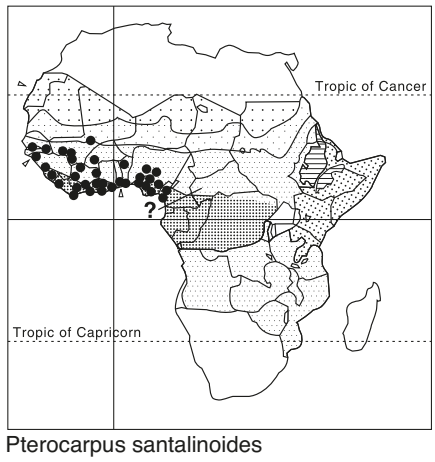
Pterocarpus officinalis subsp. gilletii



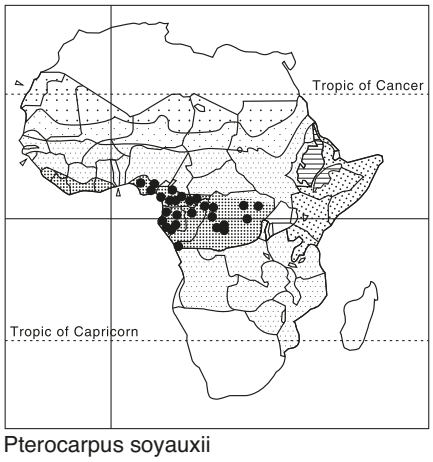
Pterocarpus osun



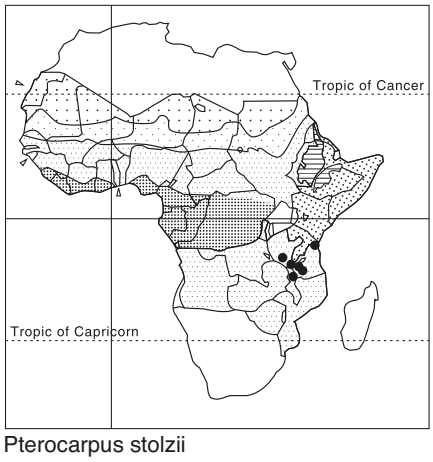
Pterocarpus rotundifolius



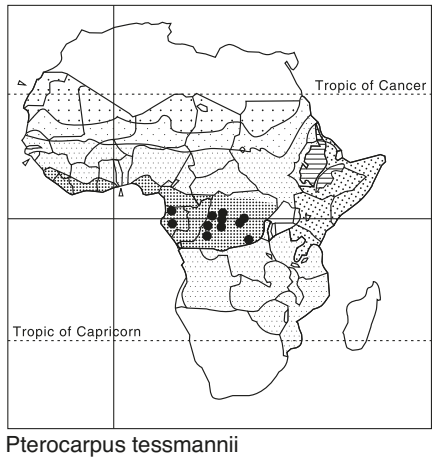
Pterocarpus santalinoides



Pterocarpus soyauxii



Pterocarpus stolzii



Pterocarpus tessmannii

PTEROCARPUS TESSMANNII

Semi-evergreen forest dominated by *Scorodophleus zenkeri* and *Plagiostyles africana;* evergreen rain-forest at foot of slopes with *Gilbertiodendron dewevrei;* riverine forest; often in depressions and near to wetter soils.

P. soyauxii occurs in similar semi-deciduous forests, but seems to prefer dryer soils.

Holotype (Tessmann B253, B, from Equat. Guinea destroyed; but a specimen at K!, lectotype (neotype Le Testu 7466, BM, from Gabon).

P. tinctorius Welw., incl. var. *macrophyllus* Welw. ex Bak., var. *chrysothrix* (Taub.) Hauman, var. *odoratus* (De Wild.) Hauman; excl. syn. *P. stolzii* Harms (*P. tinctorius* " *stolzii* race" sensu Polhill) and *P. zimmermannii* Harms (= **P. stolzii)**. – Icon.: F. White, Forest Fl. N. Rhodesia: 163, 1962 (*P. chrysothrix)*.

syn.: *Lingoum tinctorium* (Welw.) O. Kuntze; *Pterocarpus chrysothrix* Taub.; *P. cabrae* De Wild.; *P. odoratus* De Wild.; *P. kaessneri* Harms; *P. hockii* De Wild.; *P. velutinus* De Wild.; *P. delevoyi* De Wild.; *P. albopubescens* Hauman; *P. holtzii* Harms; *P. megalocarpus* Harms; *(P. "megalocarpus"* race sensu Polhill).

Evergreen tree 5-24(-30) m; bole 30 cm Ø; branches spreading, crown roundish or flattish; bark grey or brownish, fairly smooth to conspicuously fissured, with a tendency to flaking; slash exuding blood-red resin; indumentum rusty brown or whitish, sometimes interspersed with yellow glandular hairs (leaves, inflorescences); stipules early caducous: flowers cream or yellow to orange, fragrant, in short to long panicles; pod ± orbicular, flat or thickened, with long stipe and broad wing curved round to reach the pedicel, sometimes with sticky bristles (especially over seed cavity).

Wooded grassland, *Brachystegia* and *Acacia* woodlands, dry evergreen thickets, riverine forest and moister areas; on rocky hills, plateaux and scarps, on stony soils; termite mounds; 50-1800 m alt.

Very variable species: size of inflorescences, presence of glandular hairs, colour and type of indumentum, size and shape of fruit. In E Africa clear regional differences exist (fide Polhill in Fl. Trop. E. Afr.), but the defining characters become completely mixed in Zaire and Angola. – Polhill defined the "megalocarpus" and "tinctorius" races, the latter with 2 variants ("tinctorius" and "odoratus").

Note: var. **chrysothrix** (Taub.) Hauman is treated as a good species in some recent floras (e. g. Fl. Zambes.). Mature seeds are unknown. – In Zaire, Tanzania, Angola, Zambia, N Malawi, Mozambique(Tete). – The "megalocarpus" race sensu Polhill in F.T.E.A., Legum., Pap.: 84, 1971, including **Pterocarpus megalocarpus** Harms, *P. holtzii* Harms and *P. tinctorius* Welw., Apont. in Ann. Cons. Ultram. 1858: 584, 1859, is treated as a good species in Fl. Zambes. – In SE Tanzania and N Mozambique, coastal and riverine forest. Known from very few collections. – The "stolzii" race is treated in the present compilation as *P. stolzii.* – "It seems… the best way… not to use the name *P. tinctorius* in the Flora Zambesiaca area, at least for the present".

SYNONYMS:

Lingoum erinaceum (Poir.) O. Kuntze = **Pterocarpus erinaceus**
esculentum (Schumach. & Thonn.) O. Kuntze = **P. santalinoides**
indicum (Willd.) O. Kuntze = **P. indicus**
lucens (Lepr. ex Guill. & Perr.) = **P. lucens**
melliferum (Welw. ex Bak.) O. Kuntze = **P. rotundifolius** subsp. **rotundifolius**

(PTEROCARPUS) LINGOUM

officinale (Jacq.) O. Kuntze = **P. officinalis**
sericeum (Benth.) O. Kuntze = **P. rotundifolius** subsp. **rotundifolius**
simplicifolium (Bak.) O. Kuntze = **P. lucens** subsp. **lucens**
tinctorium (Bak.) O. Kuntze = **P. tinctorius**

Pterocarpus abyssinicus Hochst. ex A. Rich. = **Pterocarpus lucens** subsp. **lucens**
adansonii DC. = **P. erinaceus**
africanus Hook. = **P. erinaceus**
albopubescens Hauman = **P. tinctorius**
amazonicus Huber = **P. santalinoides**
antunesii (Taub.) Harms = **P. lucens** subsp. **antunesii**
apterus Gaertn. = **Machaerium lunatum**
belizensis Standl. = **Pterocarpus officinalis** subsp. **officinalis**
brachypterus (Benth.) O. Kuntze = **Leptoderris**
buchanani Schinz = **Pterocarpus rotundifolius** subsp. **rotundifolius**
bussei Harms = **P. angolensis**
cabrae De Wild. = **P. tinctorius**
casteelsii De Wild. p.p. (fructus) = **P. soyauxii** and (ramul. florif. and var. *castelsii)* = **P. tessmannii**
var. *ealaensis* Hauman = **P. indicus** fa. **indicus**
chrysotrix Taub. = **P. tinctorius**
claessensii De Wild. = **P. rotundifolius** subsp. **rotundifolius**
crispatus DC. = **P. officinalis** subsp. **officinalis**
dekindtianus Harms, incl. var. *latifoliolatus* De Wild. = **P. angolensis**
delevoyi De Wild. = **P. tinctorius**
draco L. = **P. officinalis** subsp. **officinalis**
elisabethvillensis De Wild. = **Dalbergia nitidula**
erinaceus sensu auctt., non Poir. = **Pterocarpus angolensis**
esculentus Schumach. & Thonn. = **P. santalinoides**
gilletii De Wild., incl. var. *angustifoliolatus* Hauman = **P. officinalis** subsp. **gilletii**
glabratus (Bak.) O. Kuntze = **Leptoderris**
grandiflorus Micheli = **Craibia**
grandis Cowan = **Pterocarpus santalinoides**
hemiptera Gaertn. = **P. officinalis** subsp. **officinalis**
hockii De Wild. = **P. tinctorius**
holtzii Harms = **P. tinctorius**
homblei De Wild. = **P. rotundifolius** subsp. **rotundifolius**
kaessneri Harms = **P. tinctorius**
lucens Lepr. var. *simplicifolius* A. Chev. = **P. lucens** subsp. **lucens**
lucidus (Welw. ex Bak.) O. Kuntze = **Aganope**
lunatus L. f. = **Machaerium lunatum**
martinii Dunkley = **Pterocarpus rotundifolius** subsp. **martinii**
megalocarpus Harms = **P. tinctorius**
mellifer Welw. ex Bak. ("melliferus") = **P. rotundifolius** subsp. **rotundifolius**
michelii Britt. = **P. santalinoides**
mutondo De Wild. = **P. rotundifolius** subsp. **rotundifolius**
odoratus De Wild. = **P. tinctorius**
polyanthus Harms = **P. rotundifolius** subsp. **polyanthus**

PTEROCARPUS

rotundifolius (Sonder) Druce ssp. *polyanthus* (Harms) Mend. & E. P. Sousa var. *martinii* (Dunkley) Mend. & E. P. Sousa = **P. rotundifolius** subsp. **martinii**

sericeus Benth. = **P. rotundifolius** subsp. **rotundifolius**

simplicifolius Baker = **P. lucens** subsp. **lucens**

sp. nov. sensu Brenan 1954 = **P. brenanii**

stevensonii Burtt Davy = **P. lucens** subsp. **lucens**

tinctorius Welw. *"stolzii* race" = **P. stolzii**

usambarensis Verdc. = **P. mildbraedii**

velutinus De Wild. = **P. tinctorius**

zenkeri Harms = ? **P. osun**

zimmermannii Harms = **P. stolzii**

PTYCHOLOBIUM / *3*

Distinguished from *Tephrosia* by digitate (or unifoliolate) leaves and indehiscent thin-walled contorted pods.

Ptycholobium biflorum (E. Mey.) Brummitt subsp. **angolense** (Bak.) Brummitt

Dwarf shrub with flexuose slender stems, 0,2-0,5 m tall, finely canescent ; leaves 3-foliolate (occasional leaves 1-foliolate) ; flowers solitary, yellowish ; pod longitudinally grooved, coiled backwards.

In dry places (near rivers) ; 420-1665 m alt. in S. Africa.

Namibia, Botswana.

Subsp. **biflorum,** with 1-foliolate leaves and not or slightly coiled fruits, in Botswana, Namibia, S. Africa.

- A flowering specimen (without fruits) reported by Thulin from Somalia (Nord. J. Bot. 8 : 465, 1989) under the name of *P. biflorum* subsp. *biflorum* turned out to be *Tephrosia karkarensis* which has a very similar flower structure but different pods.

P. contortum (N. E. Br.) Brummitt

bas.: *Tephrosia contorta* N. E. Br.

syn.: *Sylitra contorta* (N. E. Br.) Bak. f.

Dwarf shrub with straight twig-like branches, 0,2-0,8 m tall, densely white-hairy ; leaves 3-foliolate, ascending ; flowers purple ; pod coiled or spiralled, dense greyish long-hairy.

Sandy grassland, river alluvium, mopane and *Acacia-Terminalia* woodland ; 275-1100 m alt. in S. Africa.

Botswana, N S. Africa.

P. plicatum (Oliv.) Harms subsp. **plicatum** – Icon.: J. Audru & al., Pl. vascul. Rép. Djibouti, Fl. ill. 2 : 366, 1994 (photo herbar. spec.). – Map : J.-P. Lebrun, Eléments Atlas Pl. Vascul. Afr. Sèche 1: map 49, 1977.

bas.: *Tephrosia plicata* Oliv.

Dwarf shrub, finely canescent, 0,2-0,4 m tall ; leaves 3-foliolate ; pod tightly and regularly plicate with 3-4 folds on each side, not falcate. Very distinct species.

PTYCHOLOBIUM PLICATUM SUBSP. PLICATUM

Wadis, sand ; river banks ; disturbed places in *Acacia* woodland ; 240-1130 m alt. in S. Africa.

N S. Africa, Botswana, Swaziland. Disjunct distribution. Very rare in N part of range.

Subsp. **arabicum** Brummitt (with falcate pod and sometimes 1-foliolate leaves) in Yemen and Oman.

Not in Ethiopia (fide Thulin in Fl. Eth. 3 : 97, 1989).

[PUERARIA]

MAESEN, L. J. G. VAN DER (2002). Pueraria : botanical charateristics. *In :* WING MING KEUNG, o.c.: 1-28

WING MING KEUNG, ed. (2002). *Pueraria : the genus Pueraria.* (Medicinal and Aromatic Plants-industrial profiles) Taylor & Francis, London & New York. XVII + 290 pp.

Two species native of SE Asia cultivated in W & E tropical Africa and Angola (map in Maesen, o.c.: 4).

[Pueraria montana (Lour.) Merr.]

bas.: *Dolichos montanus* Lour.

Var. **lobata** (Willd.) Maesen & Almeida ex Sanjappa & Predeep [bas.: *Dolichos lobatus* Willd.; syn.: *Pueraria hirsuta* (Thunb.) Schneid.; *P. thunbergiana* (Sieb. & Zucc.) Benth.; *Pachyrhizus thunbergianus* Sieb. & Zucc.; for full synonymy, see Maesen, o.c.: 12-14].

Woody climber with stems to 30 m long, 2,5(-10) cm Ø and trifoliolate leaves. Grown for cattle fodder, for fibre and as a shade-plant.

Not mapped.

[P. phaseoloides (Roxb.) Benth.]

bas.: *Dolichos phaseoloides* Roxb.

Perennial herbaceous creeper or climber with strong stems to 10 m long, rooting at nodes.

Comprises 3 vars., two of which grown in tropical Africa for cattle fodder, green manure and as a cover plant : – var. **javanica** (Benth.) Bak. (bas.: *Neustanthus javanicus* Benth.), the most widely spread ; – var. **phaseoloides** (for synonyms, see Maesen, l.c.), occasionally introduced in W Africa, Cameroon.

Not mapped.

SYNONYMS :

Pueraria ficifolia (Benth. ex Harv.) L. Bolus = **Neorautanenia**

hirsuta (Thunb.) C. K. Schneid. = **Pueraria montana** var. **lobata**

hochstetteri Chiov. = **Neorautanenia mitis**

javanica (Benth.) Benth.= **Pueraria phaseoloides** var**.**

lobata (Willd.) Ohwi = **Pueraria montana** var. **lobata**

rogersii L. Bolus = **Neorautanenia brachypus**

thunbergiana (Siebold & Zucc.) Benth. = **Pueraria montan**a var. **lobata**

PYCNOSPORA / *1*

TURLAND, N. (1997). Proposal to reject the name Phaca trifoliata (Leguminosae). *Taxon* 46 : 785-786. (And *Taxon* 49 : 263 : 2000.)

Pycnospora lutescens (Poir.) Schindl.

bas.: *Hedysarum lutescens* Poir.

syn.: *Phaca trifoliota* L.; *Pycnospora hedysaroides* R. Br.

Erect or prostrate herb or subshrub, with several to many pubescent branched stems 10-30(-50) cm long from a woody rootstock ; inflorescence axis and calyx with bulbous-based hairs ; flowers blue or violet.

Grassland, grassland with *Imperata,* bushland, scrub, woodland ; wooded grassland, uncommon (Kenya) ; abandoned cultivations, degraded pastures ; often on rocky or gravelly hillsides, escarpments, but also in swampy areas ; 1150-1800 m alt.

India, Sri Lanka, SE Asia, Philippines, New Guinea to N Australia (areas with a dry season).

REQUIENIA / *3*

Requienia obcordata (Lam. ex Poir.) DC.

bas.: *Podalyria obcordata* Lam. ex Poir.

syn.: *Tephrosia obcordata* (Lam. ex Poir.) DC.; *Cracca obcordata* (Lam. ex Poir.) O. Kuntze ; *Crotalaria arenaria* sensu A. Chev., Expl. Bot. Afr. Occ. Franç.: 167, 1920 p.p. quoad specim. Chevalier 1264, non Benth.

Perennial bushy plant with annual subwoody white-hairy stems 25-80 cm long from a woody rootstock ; leaves 1-foliolate, obovate, evergreen ; flowers very small, solitary or paired, violet red ; pod 1-seeded.

Sandy areas of the Sahel ; deep sandy soils ; common.

R. pseudosphaerosperma (Schinz) Brummitt

bas.: *Tephrosia pseudosphaerosperma* Schinz

Undershrub or shrub to 1,5 m tall, young stems shortly appressed- or spreading-tomentose, whitish ; leaves (both surfaces) densely whitish tomentose, hairs obscuring the surface.

Wooded grassland on Kalahari sand ; 885-1300 m alt. in S. Africa.

Namibia, Botswana, S. Africa.

R. sphaerosperma DC.

syn.: *Tephrosia sphaerosperma* (DC.) Bak.; *Cracca sphaerosperma* (DC.) O. Kuntze ; *Tephrosia pseudosphaerosperma* sensu Forbes in Bothalia 4 : 956, 1948, p.p. excl. typ., non Schinz

Perennial herb or much-branched diffuse subshrub with a thick woody rootstock ; with numerous decumbent or ascending woody branches to c. 40 cm tall, grey-pubescent when young ; leaves 1-foliolate orbicular or elliptic to ovate, or lanceolate or oblong, appressed pubescent but hairs not obscuring the surface.

Grassland on Kalahari sand or on loose sand, in dry country ; 900-1485 m alt. in S. Africa.

Very variable. Leaves sometimes resembling those of *R. obcordata* (obovate), sometimes those of *R. pseudosphaerosperma* (oblong or with very dense indumentum).

Caprivi Strip, Namibia, Botswana, N S. Africa.

RETAMA / *2*

Retama raetam (Forssk.) Webb subsp. **raetam** – Icon.: L. Boulos, Fl. Egypt 1: 261, 1999 ; Maire, Fl. Afrique N. 18 : 195, 1987.

bas.: *Genista raetam* Forssk.

syn.: *Retama duriaei* (Spach) Webb ; *Lygos raetam* (Forssk.) Heywood

Shrub 0,5-2 m tall with spartioid green grooved branches, erect or spreading ; flowers white.

Wadi, dunes.

N Africa to E Mediterranean Region, Sinai.

Comprises 2 subspp.: – subsp. **raetam ;** – subsp. **gussonei** (Webb) Greuter in Sicilia.

R. sphaerocarpa (L.) Boiss. – Icon.: Castroviejo, Fl. Iberica 7(1) : 139, 1999. Maire, o.c.: 203.

bas.: *Spartium sphaerocarpum* L.

syn.: *Lygos sphaerocarpa* (L.) Heywood ; *Retama atlantica* Pomel ; *Genista sphaerocarpa* (L.) Lam.

Shrub or small tree 2-3 m tall ; branches spartioid, 4-angular, striate, hairy when young, glaucescent ; flowers yellow.

Rocky pastures in mountain area, open forest, riversides in steppe.

Morocco, Algeria, Tunisia ; Spain, Portugal.

RHYNCHOSIA / *94*

Genus of c. 200 species in the tropics. In Africa many species are insufficiently known : No fruit seen in 7 (+? 1) species (= c. 8 %) and no ripe fruit in further 14 (+ 1?) species (= c. 15 % ; together = c. 23 %) ; seeds are unknown in 3 species (+ ? 9), and ripe seeds not seen in 4 (+ 1?) species (together 7 + 10?; = c. 8 + c. 10? %) ; no ecology is recorded for 7 (+ 1?) species (= c. 8 %) ; and 18 (+ 2?) species are known only from the type (= c. 20 %).

Rhynchosia albissima Gand.

syn.: *R. albomarginata* Chiov.

Erect subshrub or woody herb 0,3-2 m tall ; stems pubescent, the younger parts usually covered with a dense grey or silvery velvety tomentum.

Woodland ; grassland with scattered trees often on black cotton soil ; floodplain alluvium ; pan margins ; scrub mopane on stony ground ; cultivated fields ; 0-1200 m alt.

NE S. Africa.

R. alluaudii Sacleux

syn.: *Eriosema dictyoneuron* Standl.

Erect subshrub, with several unbranched or branched stems 0,6-1,8 m tall, from a tuberous rootstock ; branches slender but woody, leafy, velvety ferrugineous hairy when young, later glabrescent.

Grassland, bushland ; forest edges ; rocky hillslopes ; 1050-2070 m alt.

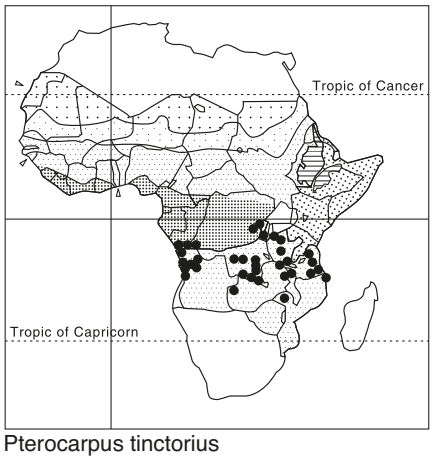
R. ambacensis (Hiern) Schuman

bas.: *Dolicholus ambacensis* Hiern

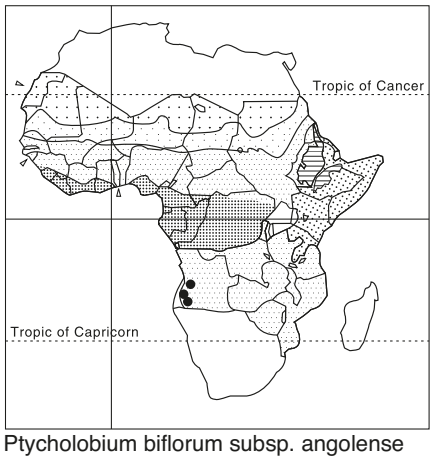
Erect or ascending herb, hoary- or somewhat tawny-silvery tomentellous, 0,45 m tall or more from a woody rootstock ; stem and branches firm, sub-terete.

Thickets on dry sandy-clayey soil (abundant) ; prairie planted with *Cassia siamea* and edges of road ; hard clay soil, after forest-fires ; 1000-1750 m alt.

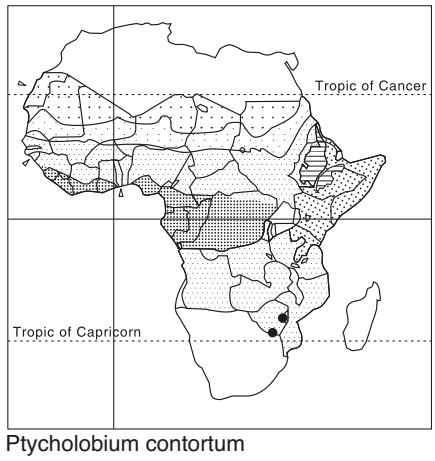
Comprises 3 subspp.



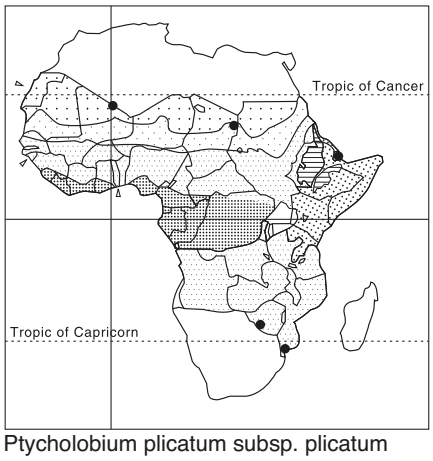
Pterocarpus tinctorius



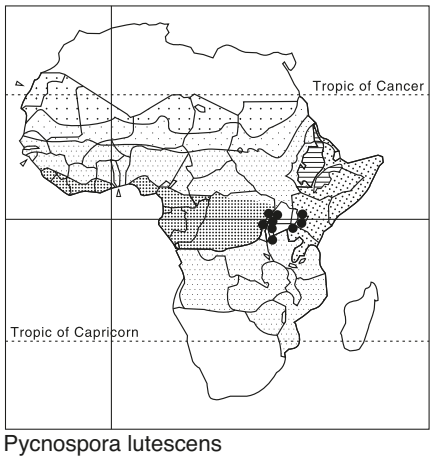
Ptycholobium biflorum subsp. angolense



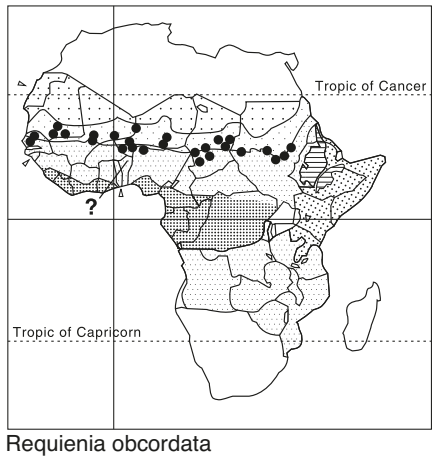
Ptycholobium contortum



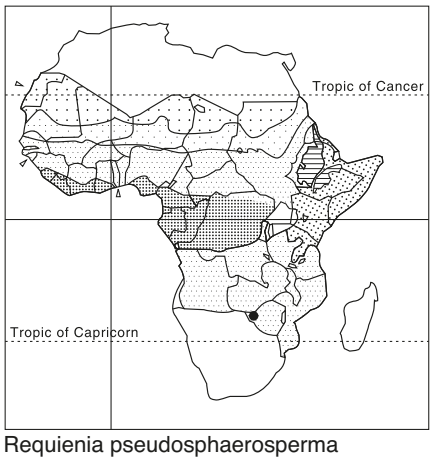
Ptycholobium plicatum subsp. plicatum



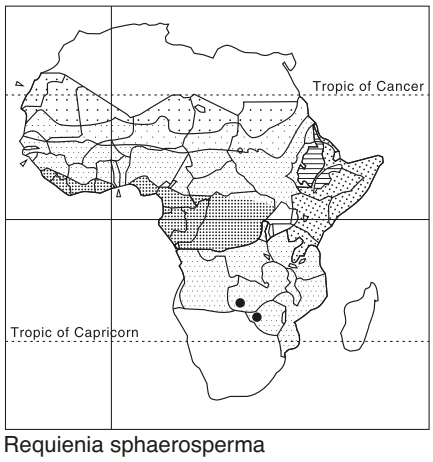
Pycnospora lutescens



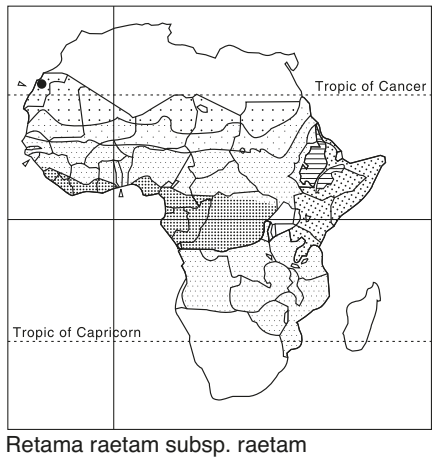
Requienia obcordata



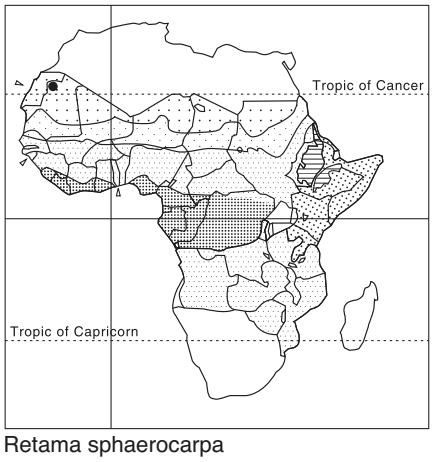
Requienia pseudosphaerosperma



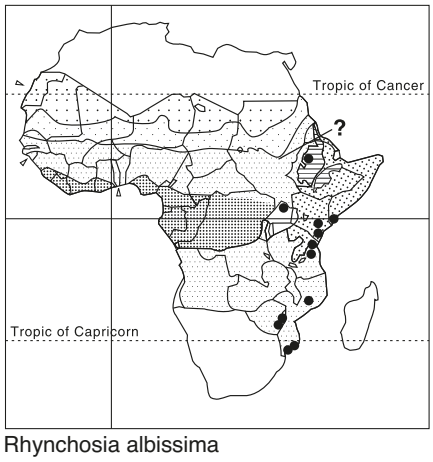
Requienia sphaerosperma



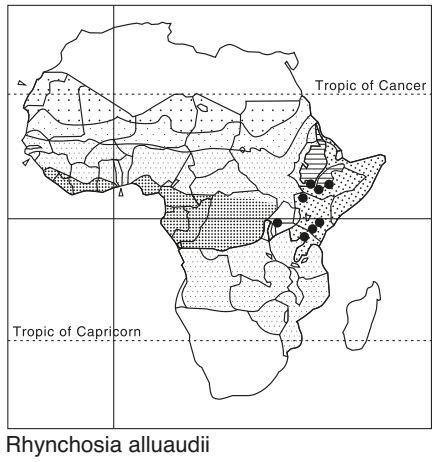
Retama raetam subsp. raetam



Retama sphaerocarpa



Rhynchosia albissima



Rhynchosia alluaudii

R. baumii Harms; Torre, Bol. Soc. Brot., Sér. 2, 39: 223, 1965 (descr. ampl.).

Twining herb or ? liane, to 2,5 m long; stems pubescent.

Savanna on sandy ground; river sides.

R. biballensis Torre

Shrub ± 1 m tall; stems branched, densely hirsute-pubescent; ripe fruit unknown.

Xerophytic forest; 350-1000 m alt.

R. braunii Harms

Climbing or scrambling almost certainly perennial herb, at least 0,5 m long and doubtless considerably longer; stems somewhat ridged, covered with a dense velvety indumentum of mixed long and short hairs but not glandular; ripe fruit unknown.

Ecology unknown; probably below 50 m alt.

Only known from the type collected in 1912.

Systematic position uncertain.

R. brunnea Bak. f.

Robust twiner with dense brownish indumentum; stems twining, woody, to 5 m long.

Young secondary formations; edges of small woods and savanna; 520 m alt. (Mt. Nimba).

R. buchananii Harms

Usually an erect shrub but sometimes decumbent, scrambling or climbing 0,6-1,5 m tall or long; stems 4 mm Ø, puberulous with very short hairs and with dense longer yellow sticky glandular hairs.

Brachystegia and *Acacia-Protea, Bauhinia* woodland; open grassland; grassland with scattered trees; sometimes on termite mounds and granite slopes; 950-1525 m alt.

R. buettneri Harms

Scrambling sprawling subshrub with cylindrical, smooth branches, 2,5 cm Ø; stems slightly viscid; flowers red-purple, in long racemes, ornamental.

Savanna; forest gallery with fine gravelly soil; colluvium in thalweg; karstic hollow.

R. calobotrya Harms

Climbing herb, probably several metres long and possibly woody at the base; stems slightly ridged, velvety with short dense pale ferrugineous hairs; pod unknown.

Ecology unknown (? fringing woodland or bushland around lake shore); 200 m alt.

Only known from the type collected in 1935.

R. candida (Welw. ex Hiern) Torre

bas.: *(Dolichos memnonius* Delile) *Dolichos memnonia* (Delile) Hiern var. *candida* Welw. ex Hiern

syn.: *Rhynchosia memnonia* (Delile) DC. var. *candida* (Welw. ex Hiern) Bak. f.

Twisted undershrub, woody at the base, almost a little shrub or a decumbent suffruticose herb, white-tomentellous or greyish-glaucous.

Sandy sub-maritime places; mountain sides.

Namibia.

R. caribaea (Jacq.) DC. var. **caribaea**

bas.: *Glycine caribaea* Jacq.

syn.: *Rhynchosia gibba* E. Mey.; *R. acuminta* Eckl. & Zeyh.; *Copisma gibbum* (E. Mey.) E. Mey.; *R. gazensis* Bak. f.; *R. congestiflora* Schinz

Perennial twiner with slender sparsely to densely pubescent stems 2-4 m long.

Woodland on hillsides; *Khaya-Parkia* riverine association; often on termite mounds; evergreen shrub clumps; coastal thicket and dune vegetation of *Mimusops, Ziziphus, Cardiogyne, Brachylaena,* etc.; grassland; 0-1410 m alt.

S. Africa. Introduced into Jamaica and Puerto Rico. – The type specimen (from seed grown in Vienna, Austria) was erroneously believed to originate from the Carribean.

Var. **picta** (E. Mey.) Meikle in S. Africa.

R. castroi Bak. f.

Subshrubby herb from a woody rootstock with main stems prostrate or semiscandent, ± woody, pale or darker, 3-4 mm Ø, grooved, sparsely to densely pubescent, aromatic; leafy shoots ± erect.

Kalahari sand woodland; *Acacia* and *Brachystegia* woodland on sandy soil; dry ground; 1000-1700 m alt.

Intermediates *R. nyasica-R. castroi* are known.

R. chapmanii Verdc. – Icon.: Kew Bull. 55: 141, 2000.

Shrub (0,6-)1,2-1,5 m tall; stems dark, densely pale yellow-brown pubescent; mature pod, and seed, unknown.

Rocky places; 1500 m alt.

Only known from the type collected in 1981.

R. chevalieri Harms

syn.: *Eriosema chevalieri* (Harms) Hutch. & Dalziel

The main stem a very short, woody rhizome, with many crowded slender erect or ascending branches 10-30 cm long, hirsute-puberulous or hirsute-pilose, glandulous; pod unknown.

Ecology unknown.

Only known from the type collected in 1899 (Koundian – ? Mali or Guinea).

R. chimanimaniensis Verdc. – Icon.: Kew Bull. 55: 145, 2000.

Herb or subshrub 0,5-1,8 m tall; stems clustered, angular, erect, mostly unbranched, with prominent nodes, densely grey pubescent when young, older parts glabrous; short lateral branches sometimes present; leaves unifoliolate; pod unknown.

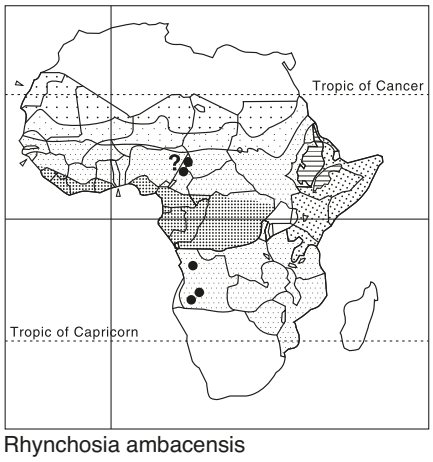
Grassland and rocky slopes, ? forest edges (steppe on stony orange soil); 1200-1950 m alt.

A very distinctive species of the *R. caribaea* group.

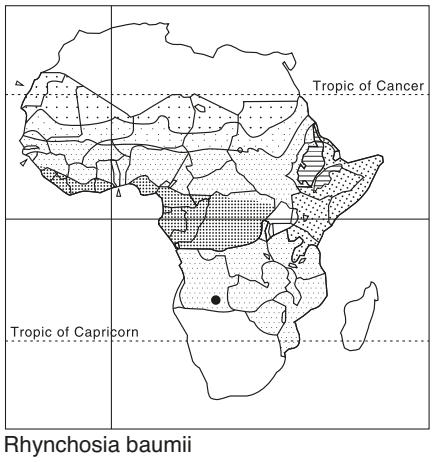
R. clivorum S. Moore

Erect branched shrub or shrubby herb 0,9-3 m tall; stems leafy, densely pubescent or hirsute.

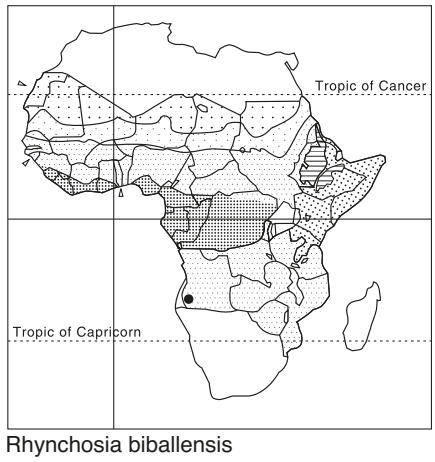
Grassland with *Protea* and *Agauria;* secondary bushland; evergreen forest margins; *Philippia* scrub; grassland with bracken, *Protea,* etc.; often on rock slopes, less often in *Brachystegia* woodland; forest gallery; wooded savanna; old fallow land; river margins; 950-2550 m alt.



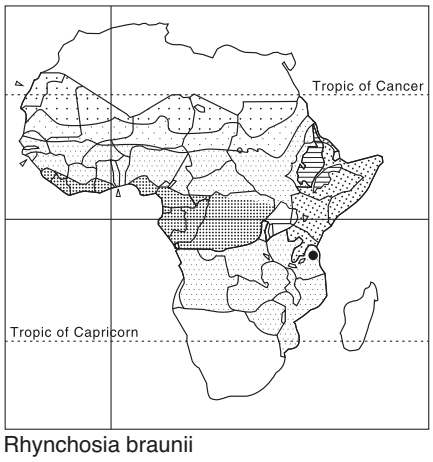
Rhynchosia ambacensis



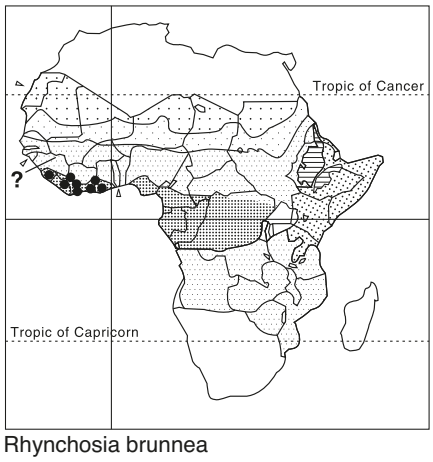
Rhynchosia baumii



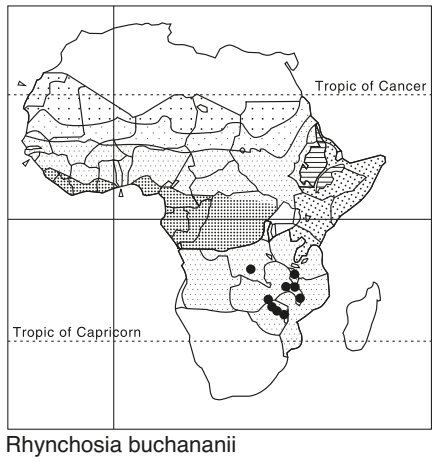
Rhynchosia biballensis



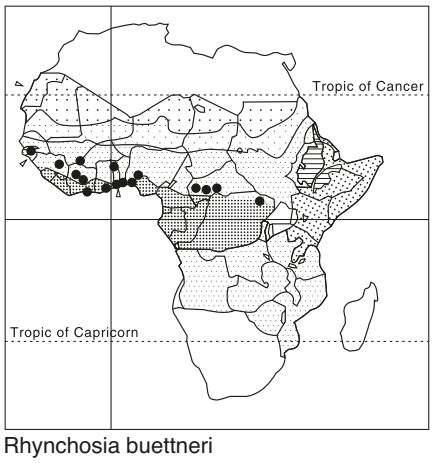
Rhynchosia braunii



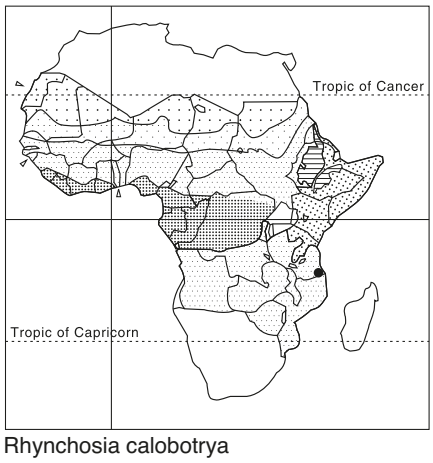
Rhynchosia brunnea



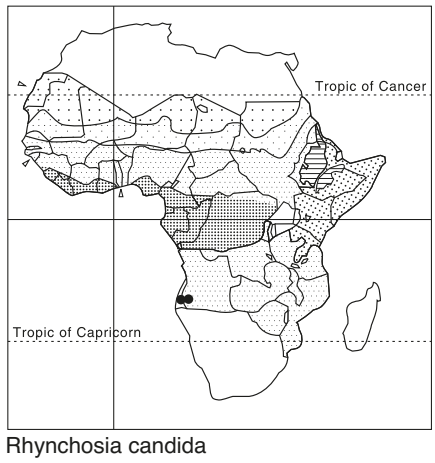
Rhynchosia buchananii



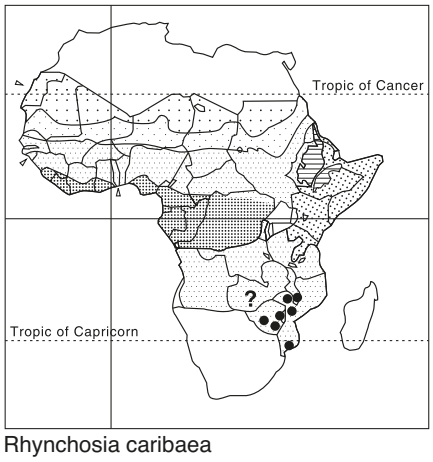
Rhynchosia buettneri



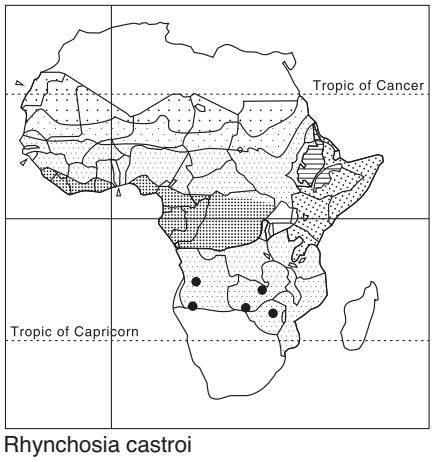
Rhynchosia calobotrya



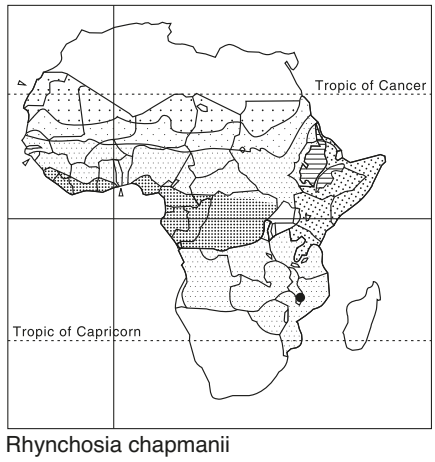
Rhynchosia candida



Rhynchosia caribaea



Rhynchosia castroi



Rhynchosia chapmanii

RHYNCHOSIA CLIVORUM

A very variable species.

S. Africa, Swaziland (subsp. **clivorum)**.

Comprises 2 subspp. in our area: – subsp. **guruensis** Verdc. (known only from the type gathering of 1944 in Mozambique, Z, Gurué Distr.); – subsp. **pycnantha** (Harms) Verdc. [bas.: *R. pycnantha* Harms; syn.: *Flemingia macrocalyx* Bak. f.; *Rhynchosia oreophila* Harms; *R. clivorum* var. *fulvida* Meikle, var. *caudata* Meikle and var. *adjoensis* Hauman

R. congensis Bak., incl. var. *gilletii* De Wild.

syn.: *Cyanospermum angolense* Welw., nom.; *Dolichos angolensis* Hiern

Stout climber or trailer 1,8-6 m long, the foliage sometimes unpleasantly aromatically scented when crushed; stems obscurely ribbed, finely silky pubescent.

Coastal grassland and bushland on sand; rain-forest edges; forest gallery; clearings; wooded savanna; "muhulu" edges; along river banks, by thickets, rather rare; 0-±1000 m alt.

Comprises 3 subspp.

R. crispa Verdc.

Erect or sometimes decumbent herb 10-18 cm tall, presumably with several shoots from a woody rootstock; stems covered with a mixture of longer and shorter white or yellowish spreading hairs; leaflet margins very coarsely crenate, somewhat bullate; seeds unknown; mature pod unknown.

Grassland; 1350-1440 m alt.

Very similar to *R. pulchra.*

R. dekindtii Harms

Rhizomatous shrub 0,8-1,8 m tall; stems prostrate, hirsute and viscose.

Sandy plain; 1500-1740 m alt.

R. densiflora (Roth) DC.

bas.: *Glycine densiflora* Roth

Climbing, procumbent or ascending perennial herb 0,3-3 m long; stems mostly slender, ridged, shortly pubescent to densely grey hairy and glandular.

Forest edges; stream-sides; grassland; thickets; edges of cultivated fields; grassland with scattered trees; rocky outcrops; limestone hill bases; copper outcrops; rain-forest with *Chrysophyllum albidum, Cola gigantea, Erythrophleum suaveolens, Alstonia boonei, Parinari excelsa, Milicia excelsa;* deciduous bushland on sand; 20-1700 m alt.

Namibia, Botswana, Swaziland, S. Africa; – India (Madras), Sri Lanka, Burma (subsp. **densiflora)**.

Comprises 3 subspp. in our area: – subsp. **chrysadenia** (Taub.) Verdc. [syn.: *R. fischeri* Harms; *R. glomerulans* Fiori]; – subsp. **debilis** (G. Don) Verdc. [syn. *Dolicholus debilis* (G. Don) Hiern]; – subsp. **stuhlmannii** (Harms) Verdc. [syn.: *R. schweinfurthii* Harms var. *stuhlmannii* (Harms) Bak. f.].

R. divaricata Bak.

Climber or scrambler ± 3 m long or sometimes (in Mozambique) a subshrub 0,5-2 m tall or tree 7-12 m; stems woody below, with short dense fulvous hairs, seasonal from a woody rootstock.

Brachystegia woodland; forest gallery edges; coastal forest; mixed deciduous woodland; 100-2100 m alt.

RHYNCHOSIA

R. elegans A. Rich.

Perennial climbing herb 1-2,5 m long from a woody rootstock; stems glabrescent to mostly rather densely covered with appressed white hairs, particularly on the ridges, and with numerous reddish gland-dots.

Savanna; forest gallery edges; bushland; scrub; thicket at swamp edge; dry evergreen forest; rocky outcrops; *Piliostigma-Combretum* woodland with *Hyparrhenia;* becoming a weed; *Hagenia abyssinica, Gnidia glauca* woodland in ecotone between forest with *Podocarpus latifolius, Olea capensis* subsp. *hochstetteri, Syzygium guineense* subsp. *afromontanum, Loudetia arundinacea;* 1000-2700 m alt.

Comprises 2 vars.: – var. **elegans** [syn.: *R. stenodon* Harms; *R. hermannii* Bak. f.; *Dolichos reticulatus* A. Rich.]; – var. **grandistipulata** Verdc.

R. erlangeri Harms; neotype: Westphal 2463.

Erect shrub 0,5-1,5 m tall; stems pubescent; mature pod unknown.

Scrub, on grassy slopes or between rocks; 1840-2600 m alt.

R. erythraeae Schweinf.

Erect shrub to 1 m tall; stems tomentose.

Grassland or bushland; 1000-2000 m alt.

R. exellii Torre

Shrub; scandent?; stems and branches pubescent; hairs long and ± spreading; mature pod unknown.

Forest gallery; 1500 m alt.

Only known from the type collected in 1937.

R. ferruginea A. Rich.

syn.: *R. friesiorum* Harms; *R. ?rivae* Schweinf.

Perennial climbing herb ±1,5-2 m long from a woody rootstock; stems densely covered with pale ferruginous hairs.

Grassland and associated evergreen forest patches; grassland with scattered *Combretum;* bushland; cultivated ground; sometimes in swampy areas; forest margins; savannas; fallow land; 1140-3000 m alt.

Very variable.

R. fleckii Schinz

syn.: *R. nervosa* Benth. ex Harv. var. *pauciflora* Harv.; *R. oligantha* Harms; *R. confusa* Burtt Davy; *R. desertorum* Harms

Perennial herb, prostrate or ascending; stems woody, 10-50 cm long, densely softly pubescent; inflorescences shorter than leaves.

Sandveld, open wooded grassland with *Grewia flava, Schmidtia pappophoroides;* 900-1200 m alt.

Namibia, S. Africa, Botswana.

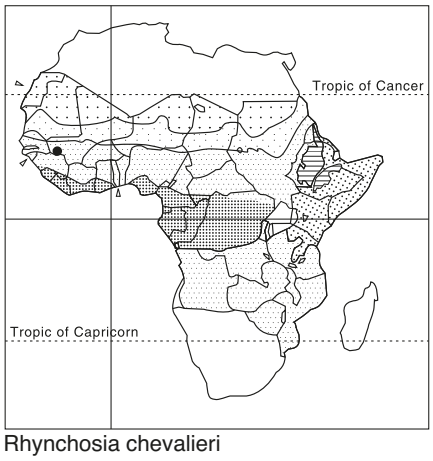
R. gabonensis Jongkind

Climber to 7 m long; branchlets puberulous to glabrous.

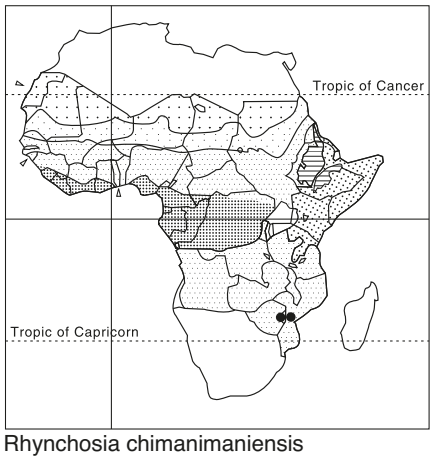
Rain-forest; ±580 m alt.

Only known from the type collected before 8 April 1993.

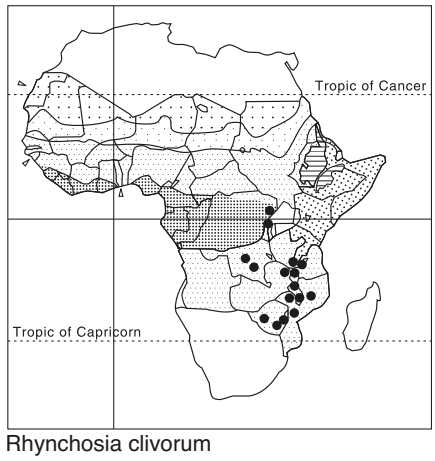
Near *R. buettneri.*



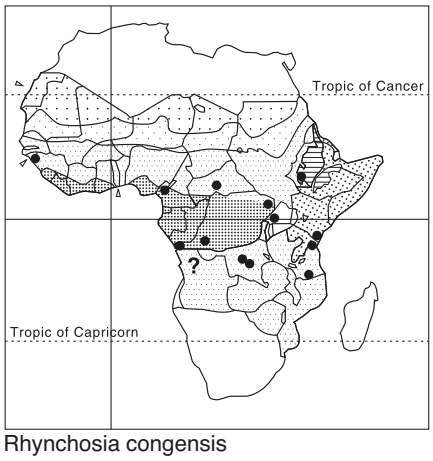
Rhynchosia chevalieri



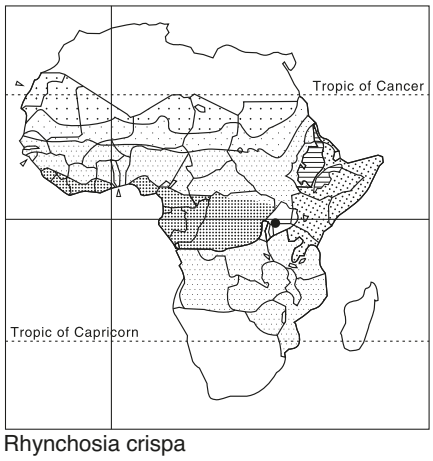
Rhynchosia chimanimaniensis



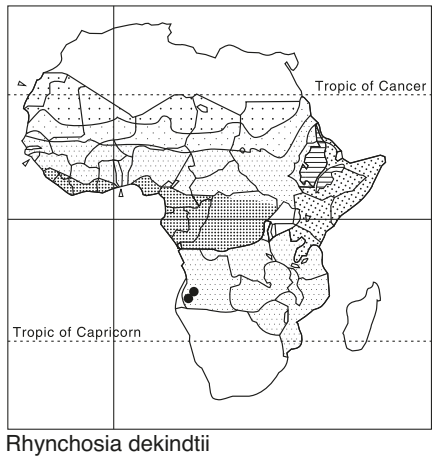
Rhynchosia clivorum



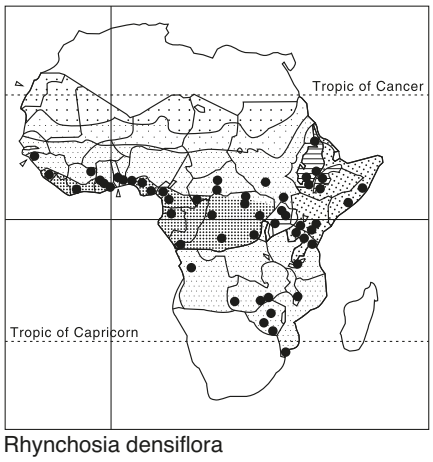
Rhynchosia congensis



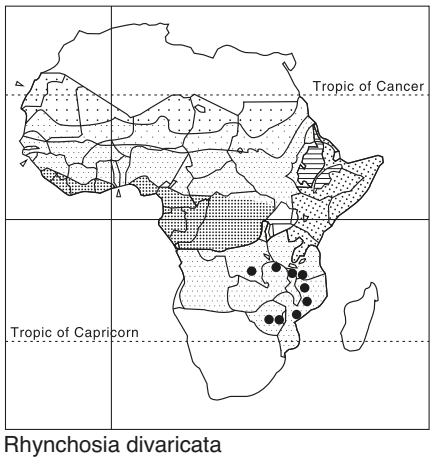
Rhynchosia crispa



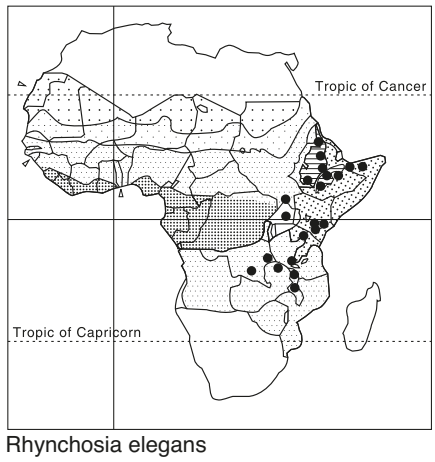
Rhynchosia dekindtii



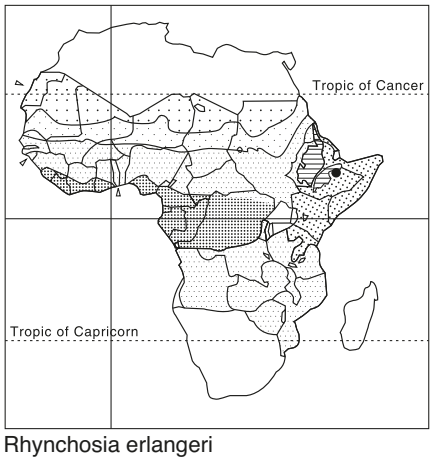
Rhynchosia densiflora



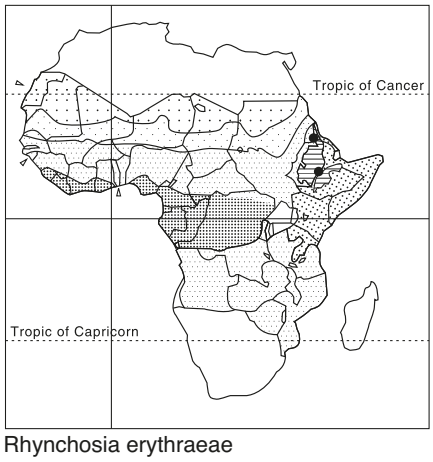
Rhynchosia divaricata



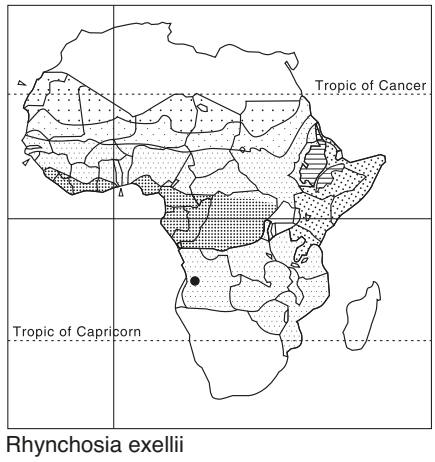
Rhynchosia elegans



Rhynchosia erlangeri



Rhynchosia erythraeae



Rhynchosia exellii

RHYNCHOSIA

R. galpinii Bak. f.

Erect subshrub 0,6-1,5 m tall; stems several, striate, densely appressed velvety buff pubescent; leaflets very discolorous.

Open dense woodland on stony ground; c. 550 m alt.

Swaziland, S. Africa.

Near **R. nitens** Benth. ex Harv. from S. Africa.

R. gandensis Torre

Shrub with sub-prostrate stem 0,7-1,5 m long, ramose from the base; branches greyish-tomentose.

Infrequent in stony places; ±1730 m alt.

Only known from the type collected in 1963.

R. gansole Chiov.

Shrub to 3 m tall, with spreading or rambling branches; bark grey to brownish; branchlets terete, rather sparsely pubescent with short hairs or subglabrous, and with ± numerous sessile yellow glands; ripe fruit and ripe seeds unknown.

Fairly widespread and locally frequent species of deciduous bushlands on red sand; area with *Acacia* spp., *Commiphora* spp., *Euphorbia cuneata, Jatropha* sp., *Balanites orbicularis;* also growing with *Indigofera eremophila, I. ogadensis, Conostomium kenyense, Erythrochlamys leucosphaera.*

First collected in 1891; then in 1979, 1985, 1987.

R. genistoides Burtt Davy

Subshrub c. 1 m tall, much branched above, silvery silky pubescent; older stems dark, glabrescent; leaflets very discolorous; inflorescence reduced, 1-2-flowered; seeds unknown.

Ecology in Mozambique (only one specimen seen for Fl. Zambes. area) not recorded. "Grassveld" and "between rocks" in S. Africa, 200-500 m alt.

R. goetzei Harms

syn.: *R. rhodesica* Bak. f.

Mostly erect or sometimes scrambling subshrub with tips twining 0,9-2 m tall, or a distinct climber; stems much branched, woody, reddish-brown, densely puberulous or pubescent when young, later glabrescent and fissured.

Grassland; *Brachystegia, Julbernardia* woodland; open forests; savannas; *Uapaca-Brachystegia* and chipya woodlands; miombo; bushland; streamside grassland, riverine thicket; often on termite mounds; 530-1830 m alt.

Comprises 2 vars.

Climbing specimens confused with *R. caribaea.*

R. gossweileri Bak. f.

Plant with twining stems, much branched, suffruticose, spreading, rounded, pubescent; mature fruit and seeds unknown.

"In abundant plantation."

Only known from the type.

R. heterophylla Hauman

Erect subshrub ±60 cm tall, with several erect shoots from a stout woody rootstock, usually appearing after burning; stems stout or slender, pubescent and with dark red glands; branches 20-30 cm long.

RHYNCHOSIA HETEROPHYLLA

Brachystegia, Diplorhynchus secondary woodland; *Brachystegia, Isoberlinia* woodland; plateau woodland on laterite; rocky hills; wooded savanna; 900-1300 m alt.

Some forms are erect, of characteristic yellow-green colour (in life and dry) with stems densely shortly pubescent.

First collection in 1911, second in 1938, etc.

R. hirta (Andrews) Meikle & Verdc.

bas.: *Dolichos hirtus* Andrews

syn.: *Cylista tomentosa* Roxb.; *C. albiflora* Sims; *Cyanospermum tomentosum* (Roxb.) Wight & Arn.; *Rhynchosia cyanosperma* Bak.; *R. tomentosa* (Roxb.) Baill., non Hook. & Arn., nec Kurz

Creeper or climber 2-8 m long, the main stems to 8 mm Ø; stems covered with dense short ferruginous hairs, later glabrescent.

Forest edges; grassland with scattered trees; hillside bushland; cultivations; dry forest; swampy and gallery forest; regrowths; fallow land; scrub; *Brachystegia* woodland; sometimes on termite mounds; 150-1800 m alt.

Considerably variable species.

S. Africa; Mascarene Islands; Sri Lanka, India.

R. holosericea Schinz

Trailing herb; stems very pale, to 60 cm long, finely pubescent with short hairs and with longer sticky yellow glandular-based hairs.

Kalahari sandveld with *Terminalia, Baikiaea* etc.; open grassland; 1000-1300 m alt.

Botswana, Namibia, S. Africa.

R. holstii Harms

Perennial climbing or trailing herb with several stems ± 1 m long from a woody rootstock; stems often ridged, pubescent particularly on the ridges.

Recently cleared forest areas where *Cymbopogon afronardus* is a dominant on dark brown loam; swamp; cultivated ground; said to be a pioneer on recently burnt land; rocky slopes in savanna; open bush; waste land; grassy slopes with *Themeda* and scattered *Combretum; Themeda triandra, Pennisetum schimperi, Chloris gayana* grassland on a black volcanic soil; locally common with *Carissa, Jasminum, Grewia similis, Hibiscus fuscus, Aspilia holstii;* (? 500-)800-2190 m alt.

Intermediates between this species and *R. minima* var. *prostrata* do occur.

R. holtzii Harms

Climber to 6 m long; stems subglabrescent, puberulous or hirsute, sometimes slightly glutinous; mature pods unknown.

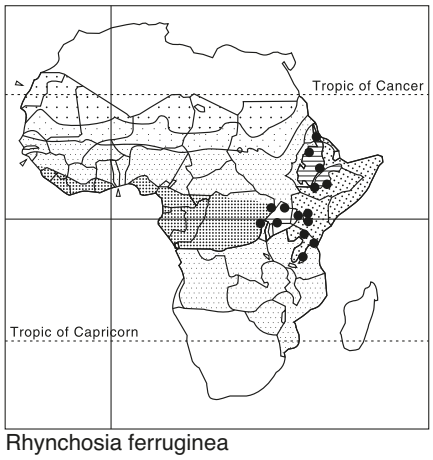
Forest; to 270 m alt.

R. huillensis (Hiern) Schumann

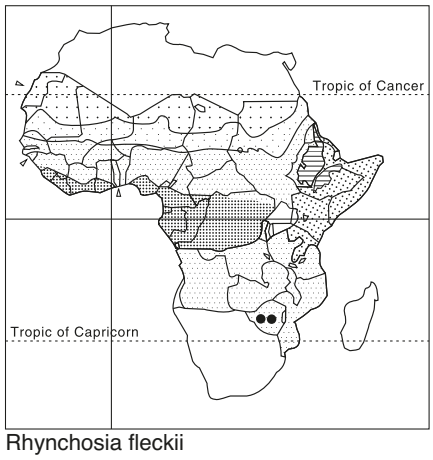
bas.: *Dolicholus huillensis* Hiern

Robust erect herb, silvery-tomentose in most parts, 0,6-1,5 m tall; stems and branches sub-terete, leafy.

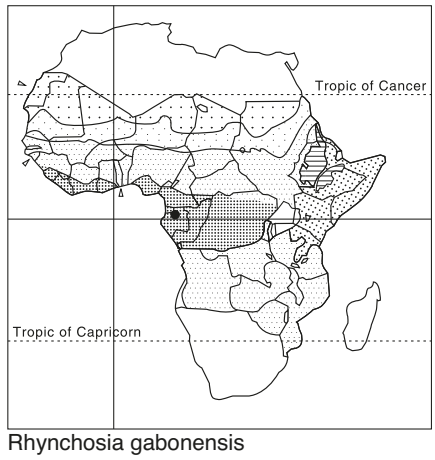
In wooded situations among shrubs and tall herbage; drier thickets at the border of forests near lake.



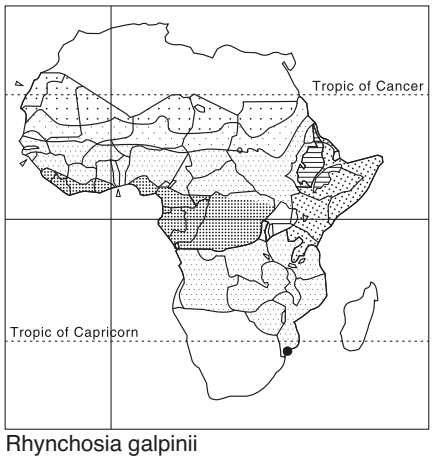
Rhynchosia ferruginea



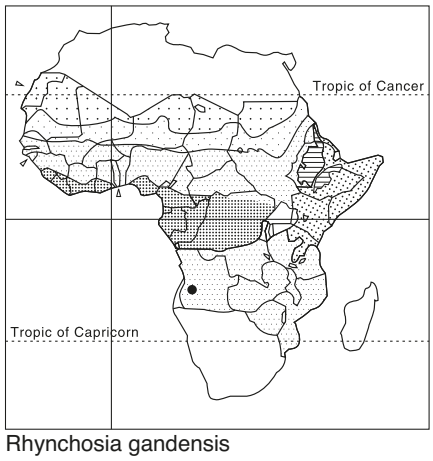
Rhynchosia fleckii



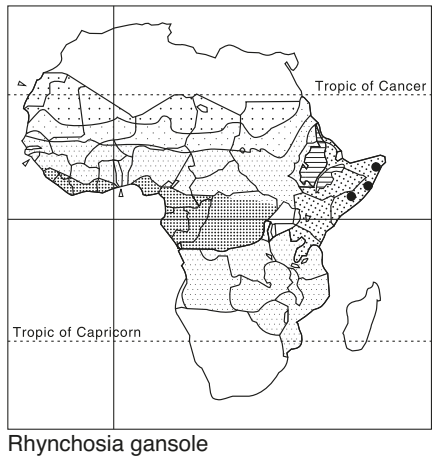
Rhynchosia gabonensis



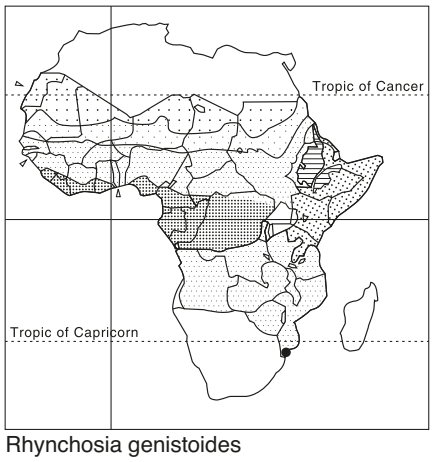
Rhynchosia galpinii



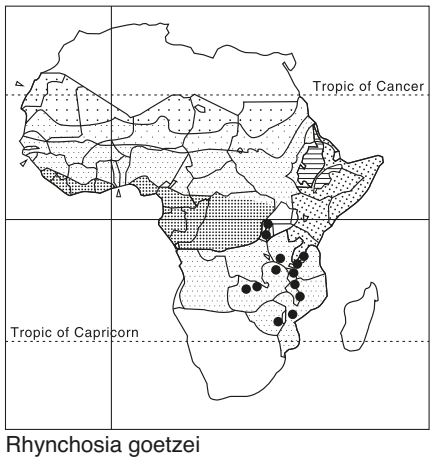
Rhynchosia gandensis



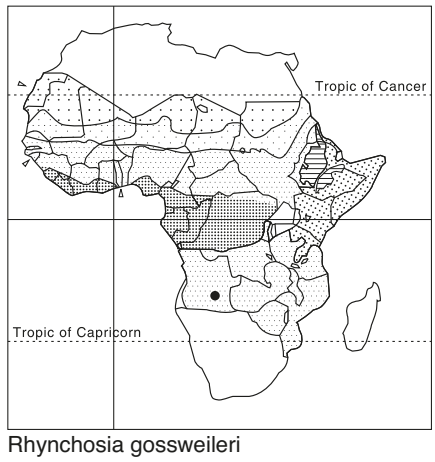
Rhynchosia gansole



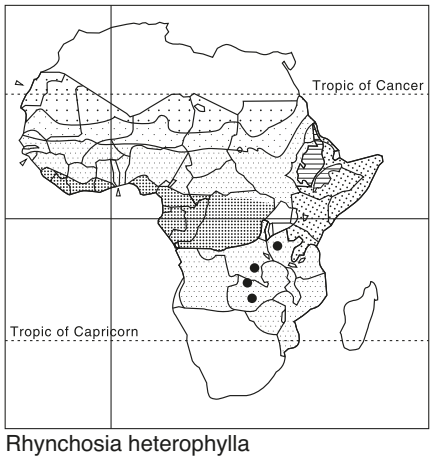
Rhynchosia genistoides



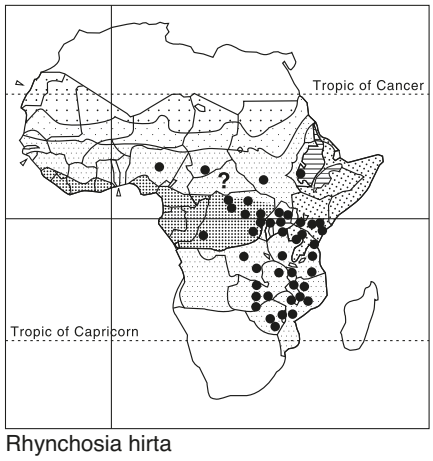
Rhynchosia goetzei



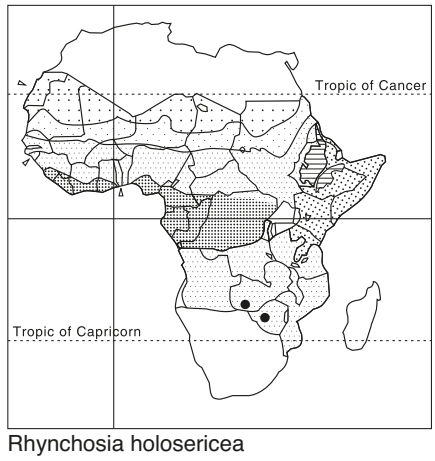
Rhynchosia gossweileri



Rhynchosia heterophylla



Rhynchosia hirta



Rhynchosia holosericea

RHYNCHOSIA

R. insignis (O. Hoffm.) R. E. Fries – Icon.: Belg. J. Bot. 125: 49, 53, 1992.

bas.: *Eriosema insigne* O. Hoffm.

Sticky erect pyrophytic herb or subshrub 0,14-0,6 -1,4 m tall; rootstock 4-6 cm Ø, tough and woody, often horizontal; stems several, branched near the base, sparsely to velvety pubescent and with yellowish glandular hairs as well. Without leaves when flowering.

Brachystegia woodland; grassland with forest remnants; open *Acacia* woodland; *Terminalia, Isoberlinia, Baphia* bushland; burnt grassland and woodland; chipya grassland; dambo margins; often in rocky places; periodically flooded grassland; 1400-2250 m alt.

Very variable.

Comprises 2 subspp.: – subsp. **insignis** [syn.: *R. subaphylla* Bak. f.; *Eriosema randii* Bak. f. & Haydon]; – subsp. **affinis** (De Wild.) Pauwels [bas.: *R. affinis* De Wild.].

R. kilimandscharica Harms

Perennial climbing or trailing herb to 1,5 m long; stems pubescent.

Bushland; forest edges; grassland; often on lava plains; savanna with *Pennisetum;* 1290-2550 m alt.

R. laetissima Welw. ex Bak.

syn.: *Dolicholus laetissimus* (Welw. ex Bak.) Hiern

Handsome undershrub, climbing, with its stems 4,5 m long or more, on trees and quite covering them with its delightfully yellow flowers; fruit unknown ?

Wooded bushy situations at the edges of forests on bank of river; 1730 m alt.

R. ledermannii Harms

Climber; stems ± densely hirsute, hairs spreading; leaflets ± grey beneath.

Brook sides in grassy dry savanna.

? Only known from the type collected in 1908.

R. longissima Hauman

Sarmentous ? or twining herb with a thick woody rootstock; stem slender, 1,5 m (? and more) long, 1,5 m Ø, striate, with red-brown spreading hairs, becoming slightly puberulous; ripe seeds unknown.

Edges of forest gallery; 1070 m alt.

Only known from the type collected in 1947.

R. lukafuensis Bak. f.

Undershrub ?, with erect, slender stem; branches 2 mm Ø with dense, short pubescence; pods unknown.

Savanna ?

Only known from the type.

R. luteola (Hiern) Schumann

bas.: *Dolicholus luteolus* Hiern

syn.: *Rhynchosia moninensis* Harms (of var. **luteola)**.

Usually a robust sticky perennial climber, often forming a dense tangle several metres long, or erect subshrub 0,3-1 m tall; stems slender to thick and woody, covered with long sticky yellow bristly often tubercular-based hairs and also shorter pubescence and small glands.

RHYNCHOSIA LUTEOLA

Evergreen forest margins; *Brachystegia, Uapaca* woodland; tall grass associations; granite rocks in grassy hill country in old cultivations; riverine woodland; lake shore swamp; *Pennisetum* grassland; roadsides; in thick undergrowth; open woodland with *Hyphaene;* dry bushland; burnt grassland; ± 50-1350 m alt.

Comprises 3 vars.

R. macrantha Hauman

Twining herb or ? liane with puberulous branches 1,5 mm Ø; pod unknown.

Grassy savanna; on grass stems; 2300 m alt.

Only known from the type collected in 1944.

R. malacophylla (Sprengel) Bojer – Icon.: L. Boulos, Fl. Egypt 1: 357, 1999 (partial).

bas.: *Glycine malacophylla* Sprengel

syn.: *G. mollis* Hook. 1826, non Willd., nom. illegit.; *Rhynchosia hookeri* G. Don, nom. superfl.; *R. sennaarensis* Schweinf., incl. var. *flavissima* Schweinf., but excl. var. *macrocalyx* (Chiov.) Cufod. *(= R. minima* var. *macrocalyx); R. flavissima* Bak.

Perennial trailing or climbing herb 0,3-3 m long from a woody rootstock; stems woody at the base, ridged, glabrous or pubescent.

Deciduous bushland; *Acacia* scrub; sometimes in plantations; 0-2350 m alt.

Egypt; Yemen.

R. malacotricha Harms

Shrubby ± erect robust herb, often with climbing branches, 1-3 m tall; stems densely velvety with white hairs.

Grassland and wood-bushland; 1350-2000 m alt.

R. mannii Bak.

Climber or trailer 1,5-8 m long; stems pubescent to glabrescent, 1-2 cm Ø; branches twining, 3-6 mm Ø.

Evergreen forest edges; forest clearings; rain-forest; secondary forests; forest gallery; fallow land, *Manihot* cultivations; thickets; 200-1400 m alt.

Bioko/Fernando Poo.

R. megalocalyx Thulin

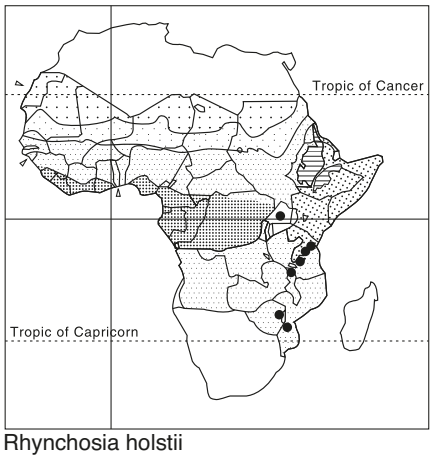
Robust half erect and half climbing plant, to 5 m tall, somewhat viscid; branchlets terete, dark purplish brown, pubescent with short erect hairs some of which are tubercular-based; calyx with tube ± 4 mm long, lowest lobe ± 15-18 mm long, the other 5-8 mm; seeds ± 12-16 × 10-12 mm.

Acacia-Commiphora bushland on orange sand; other associated woody plants: *Cordyla somalensis, Gardenia fiorii, Dalbergia uarandensis, Boswellia microphylla, Ipomoea donaldsonii, Cordeauxia edulis, Solanum jubae, Lannea greenwayi, Indigofera ruspolii;* 135-390 m alt.

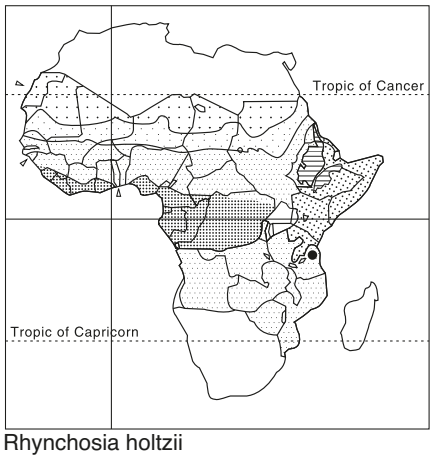
R. micrantha Harms

Perennial prostrate or trailing herb 15-60 cm long from a woody rootstock; stems slender, pubescent or glabrescent.

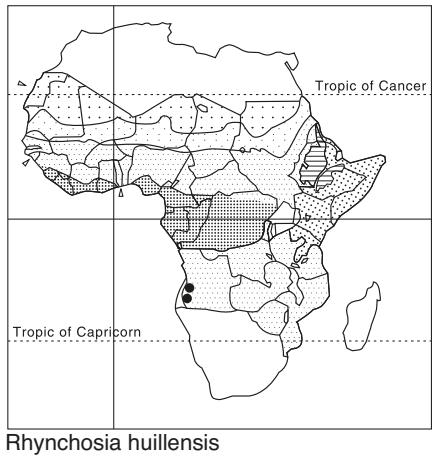
Grassland; bushland; abandoned cultivations; floodplain grassland; savannas; greens; thicket on termite mounds; fixed open dunes; 0-1500 m alt.



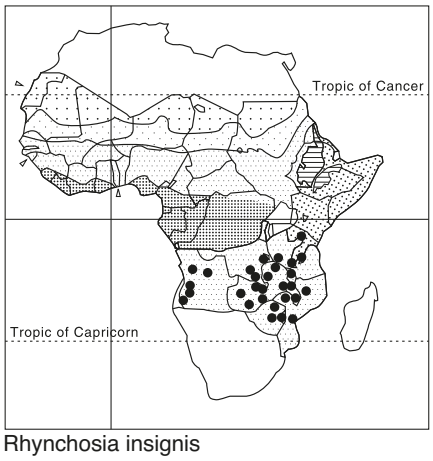
Rhynchosia holstii



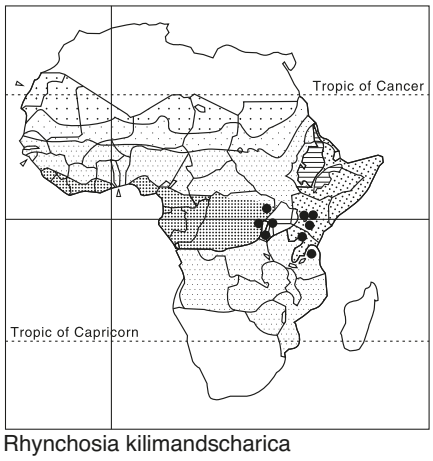
Rhynchosia holtzii



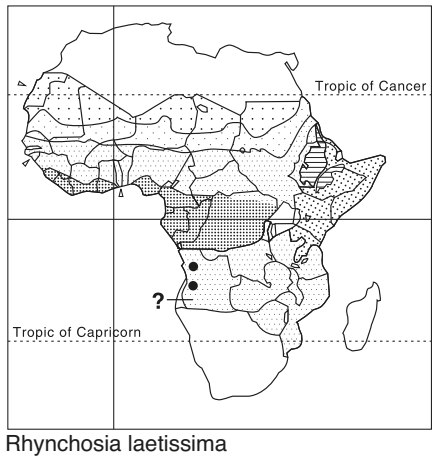
Rhynchosia huillensis



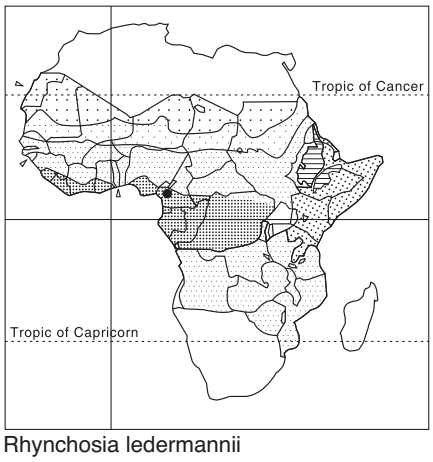
Rhynchosia insignis



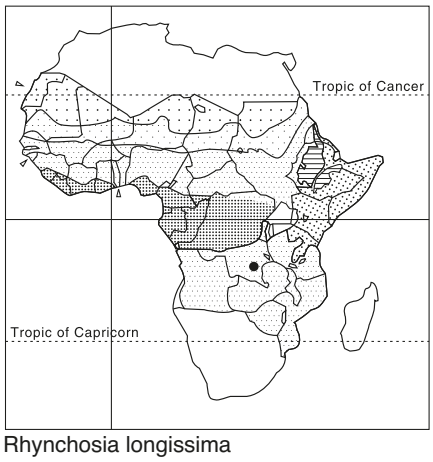
Rhynchosia kilimandscharica



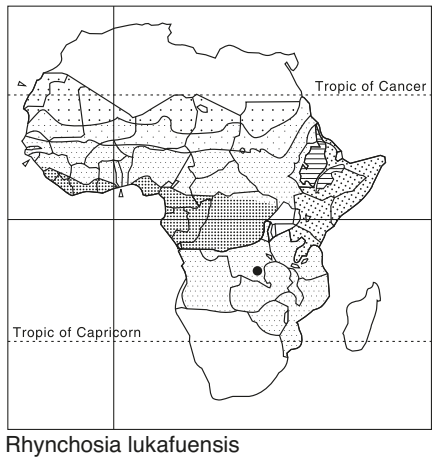
Rhynchosia laetissima



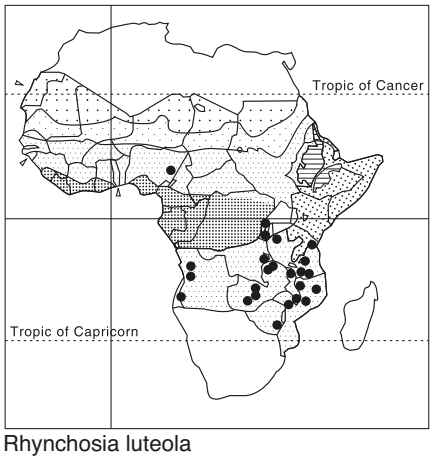
Rhynchosia ledermannii



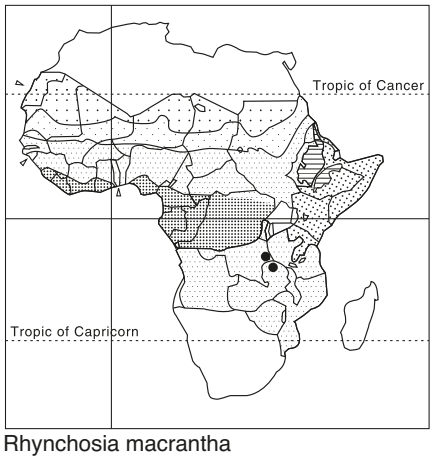
Rhynchosia longissima



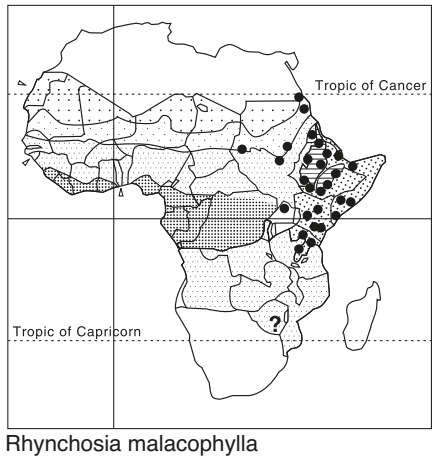
Rhynchosia lukafuensis



Rhynchosia luteola



Rhynchosia macrantha



Rhynchosia malacophylla

RHYNCHOSIA

R. minima (L.) DC.; Kew Bull. 25:102, 1971.

bas.: *Dolichos minimus* L.

Perennial climbing or prostrate herb, with several slender stems 0,3-several metres long from a woody rootstock; stems glabrous to velvety.

Bushland; *Acacia* scrub; grassland particularly in coastal areas; open savannas; grassland with scattered trees; often on alluvial soils; open Mopane; *Brachystegia* and *Kirkia-Commiphora* woodland; riverine fringes with *Phragmites; Carissa* thicket; grassy valley bottoms; woodland-dambo margins; sandy lake shores; pan margins; arid ground; *Combretum-Piliostigma* woodland; river floodplains; road-sides; fallow land; sandy- and sandy – clayey soils; often under shade; recently burnt area in *Brachystegia-Erythrina-Acacia* woodland, etc.; 0-2600 m alt.

Exceedingly difficult to divide into lower taxa; range of variation very great; experimental techniques are needed.

S. Africa, Botswana, Namibia, Swaziland; Cape Verde Isl.; Madagascar; Egypt, Sinai, Arabia, Yemen, Israel; Pakistan, Afghanistan, India, Sri Lanka; Rodriguez Isl.; Timor; China, Thailand, Malaya, Taiwan; New Guinea; Australia; West Indies, tropical America (map: Mem. New York Bot. Gard. 31: 76, 1978).

Comprises 7 vars. in our area: – var. **minima** [syn.: *Dolicholus minimus* (L.) Hiern]; – var. **macrocalyx** (Chiov.) Verdc. [syn.: *R. maitlandii* Bak. f.]; – var. **memnonia** (Delile) Cooke [bas.: *Dolichos memnonia* Delile s. str.; *Rhynchosia memnonia* (Delile) DC.]; – var. **nuda** (DC.) O. Kuntze [bas.: *R. nuda* DC.]; – var. **pedicellata** Verdc. (the type a plant of uncertain status); – var. **prostrata** (Harv.) Meikle [syn.: *R. hockii* De Wild., incl. var. *grandifolia* Hauman; *R. schoelleri* Schweinf.; *R. ischnoclada* Harms]; – var. **A,** Fl. Trop. E. Africa, Legum. 4, Papil. 2: 758, 1971; Fl. Zambes. 3(5): 204, 2001; Fl. Somalia 1: 445, 1993.

Var. **australis** (Benth.) S. Moore [bas.: *R. australis* Benth.] in Australia; var. **falcata** (E. Mey.) Verdc. [bas.: *Copisma falcatum* E. Mey.] in S. Africa. – var. **flagellaris** Bak. [syn.: *Rhynchosia flagellaris* Fenzl, nom. nud.] from the Sudan (F. T. A. 2: 219, 1871) seems to be intermediate between var. **prostrata** and var. **nuda;** cf. Verdcourt, Kew Bull. 25: 105, 1971.

R. monophylla Schltr., incl. var. *eylesii* Bak. f.

syn.: *R. prostrata* Suesseng. 1951, non Brandegee 1908, nom. illegit.

Perennial trailing herb 15-60(200) cm long from a woody rootstock to 20x±1 cm; stems pubescent with short spreading hairs and yellowish glandular hairs on the young parts.

Gravelly rocky ground; dambo; open grasslands; miombo; *Brachystegia-Syzygium* and chipya woodlands; sandy stony soil; granite slopes; limestone hills; conspicuous after burns; 1050-1750 m alt.

S. Africa, Swaziland, Botswana.

R. nervosa Benth. ex Harv., excl. var. *pauciflora* Harv. (= **R. fleckii)** and var. *petiolata* Burtt Davy (= **R. totta** var. **totta)**.

Prostrate, or less often climbing herb from a woody rootstock; stems 0,1-1,2 m long, densely spreading yellow-brown hairy, rarely velvety.

Bushland; 1700 m alt.

S. Africa, Swaziland.

RHYNCHOSIA

R. nyasica Bak.

syn.: *R; glutinosa* Harms; *R. kerstingii* Harms; *R. imbricata* Bak. – All of var. **nyasica.**

Perennial somewhat sticky erect, rarely prostrate herb or subshrub with several stems 0,3-1 m tall, from a woody rootstock; stems pubescent and glandular.

Grassland with scattered trees; *Acacia* semi-desert thicket; open woodland with *Combretum collinum, C. molle, Steganotaenia araliacea,* etc. on rocky outcrop; lateritic blocks on slope; savanna with *Monotes kerstingii* on sand; deep soil in gallery; rocky places among inselbergs; *Brachystegia, Julbernardia, Isoberlinia-Uapaca* and chipya woodlands; burnt grassland with scattered trees; 400-1670 m alt.

Comprises 2 vars.

R. nyikensis Bak.

Perennial climber 1,5-4,5 m long; stems ferruginous pubescent.

Forest edges; rain-forest and derived secondary bushland; riverine grassland; 1350-2450 m alt.

R. oblatifoliolata Verdc.

Perennial prostrate or climbing herb 0,5-0,8 m long; stems densely pubescent with short grey hairs.

Rocky slopes; grassland; lawns; 1800-2100 m alt.

Confused with *R. usambarensis* var. *inelegans* and growing with it.

R. oblongifoliolata Hauman

Subshrub with thick, deep, tortuous root; stems sarmentous, ± spreading, ± angular, striate, 40 cm long, 2 mm Ø, with short, appressed, red-brown hairs; pod unknown.

Wooded savannas; sometimes frequent.

Only known from the type collected in 1948.

R. orthobotrya Harms; Kew Bull. 25:84, 1971.

Perennial sticky erect herb or undershrub 0,6-1,3 m tall, more rarely a twiner 0,9-1,5 m long; stem pubescent and also with longer glandular-based hairs.

Grassland; bushland; often on rocky hill-tops; eroded hardpan slopes; woodland with *Combretum collinum, C. molle, Annona senegalensis;* forest with *Isoberlina;* cultivations; screes; 900(? and less)-2100 m alt.

R. ovatifoliolata Torre

Erect subshrub to 1,5 m tall; stems several, hirsute-pubescent, ± glandulose.

Ecology unknown; ± 800 m alt.

Only known from the type collected in 1937.

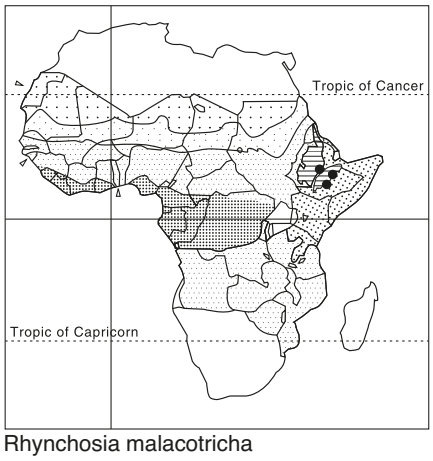
R. preussii (Harms) Taub. ex Harms

bas.: *Cylista preussii* Harms

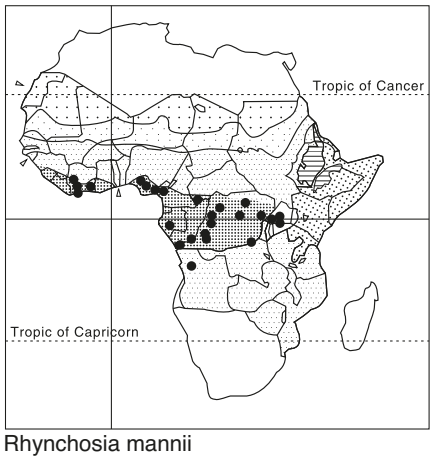
Liane with stem to 2 cm Ø; branches slender, rounded, ridged, white pubescent, becoming glabrescent.

Forests.

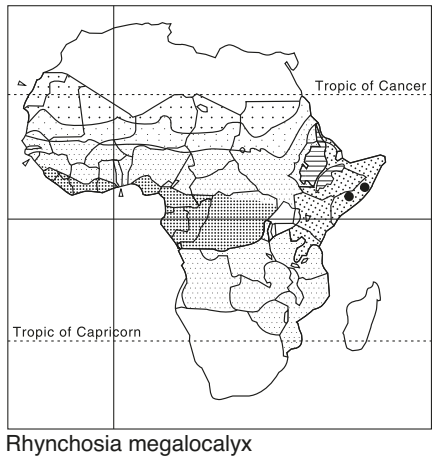
Bioko/Fernando Poo.



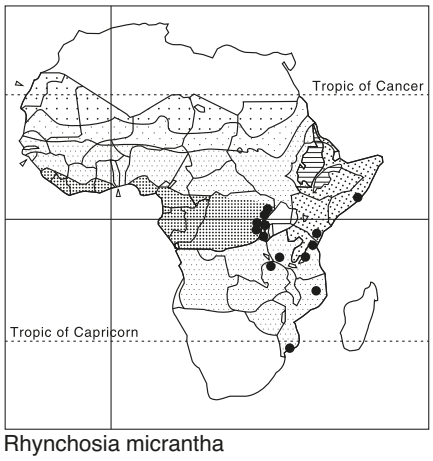
Rhynchosia malacotricha



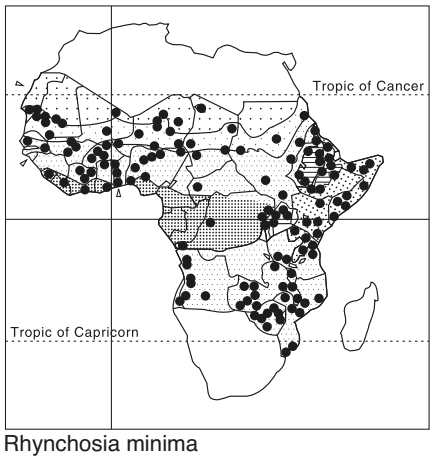
Rhynchosia mannii



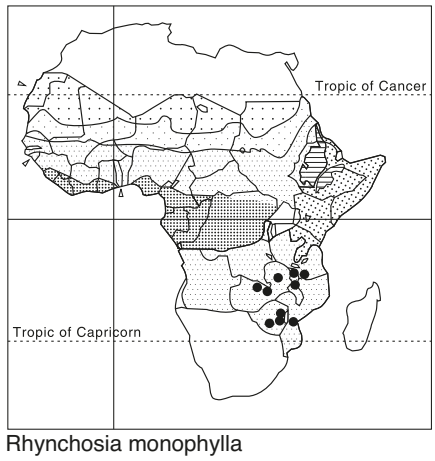
Rhynchosia megalocalyx



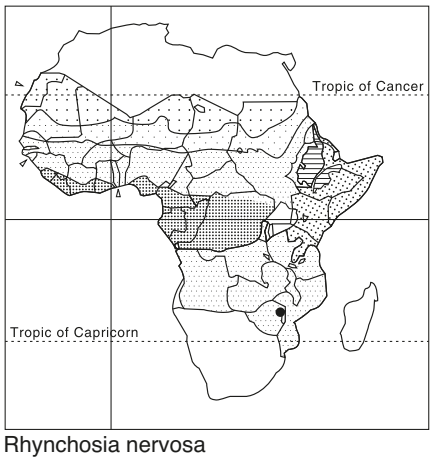
Rhynchosia micrantha



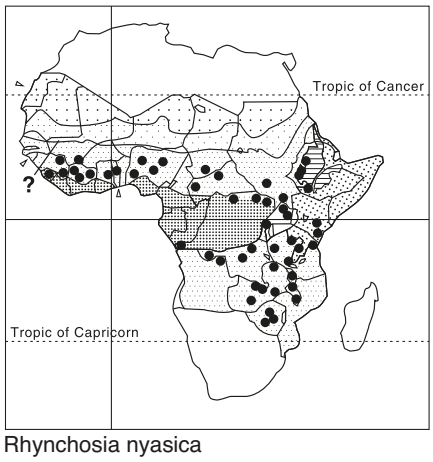
Rhynchosia minima



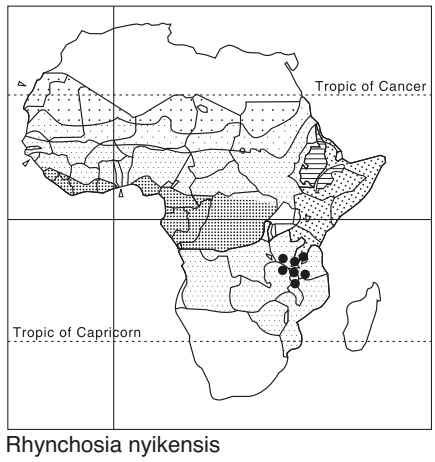
Rhynchosia monophylla



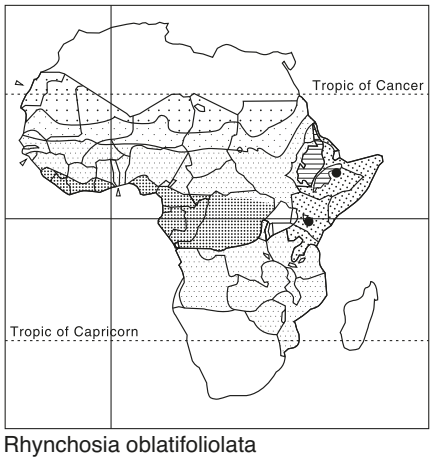
Rhynchosia nervosa



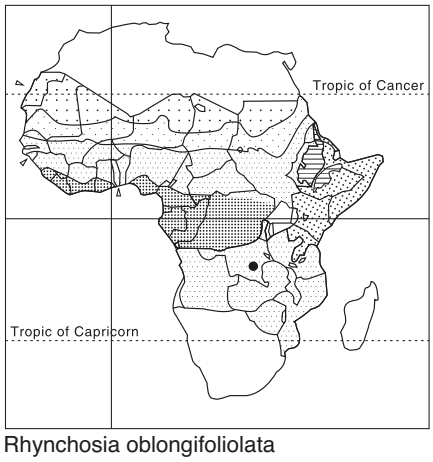
Rhynchosia nyasica



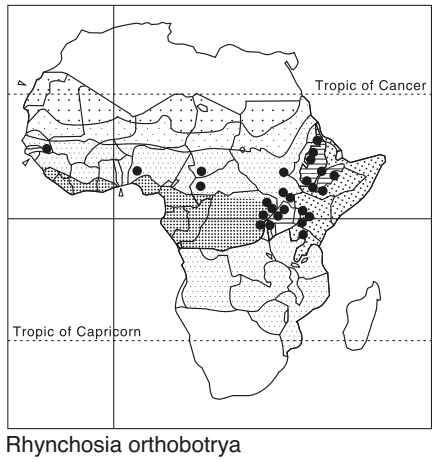
Rhynchosia nyikensis



Rhynchosia oblatifoliolata



Rhynchosia oblongifoliolata



Rhynchosia orthobotrya

RHYNCHOSIA

R. procurrens (Hiern) K. Schumann; Kew Bull. 25: 76, 1971.

bas.: *Dolichos procurrens* Hiern

syn.: *Dolicholus procurrens* Hiern

Perennial climbing or trailing herb, probably ±1-4 m long; stems numerous sometimes woody and ridged, pubescent and glandular or glabrescent.

Brachystegia, Uapaca woodland and derived cultivations; bushland; grassland with scattered *Combretum,* etc.; open ground; savanna with *Loudetia;* sandy sparingly-bushy pastures; Kalahari sand and other sandy soils; *Brachystegia, Brachystegia-Isoberlinia* and *Acacia-Combretum* dry woodland; secondary *Brachystegia* woodland and mushitu; 570-1800 m alt.

Comprises 3 subspp.: – subsp. **procurrens** [syn.: *R. schliebenii* Harms; *R. resinosa* (Hochst. ex A. Rich.) Bak. var. *schliebenii* (Harms) Hauman]; – subsp. **floribunda** (Bak.) Verdc. [syn.: *R. procurrens* var. *rhodesica* Bak. f.]; – subsp. **latisepala** (Hauman) Verdc.; these three subspp. form a cline.

R. pseudoteramnoides Hauman

Perennial climbing or trailing herb ±1 m long from a slender woody rootstock; stems shortly pubescent, the hairs usually fasciculate or pseudostellate; mature pod unknown.

Grassland and with scattered shrubs; savanna with *Brachystegia;* wet peaty marshes; old cultivations; 1020-1800 m alt.

R. pseudoviscosa Harms; Kew Bull. 25: 83, 1971.

syn.: *R. fagelioides* Taub. ex Engl.

Perennial viscid twining or prostrate herb probably ± 1 m long; stems densely pubescent with rather sticky hairs.

Bushland; grassland; particularly in seasonally swampy places on black soil; 0-1350 m alt.

R. pulchra (Vatke) Harms

bas.: *Aeschynomene ? pulchra* Vatke

± Erect or straggling shrub 0,6-1,5 m tall; rootstock with large cylindrical tubers to 60 cm long; stems rather stout, hirsute with whitish or ferruginous hairs, usually covered with stipules which persist even after the side branches and flowering shoots have dropped off.

Bushland; open woodland; 300-1500 m alt.

R. pulverulenta Stocks; Kew Bull. 25: 105, 1971. – Icon.: Bull. Bot. Surv. India 12: 111, 1972; L. Boulos, Fl. Egypt. 1: 357, 1999.

syn.: *R. memnonia* (Delile) DC. fa. *pulverulenta* (Stocks) A. Terracc.; *R. elachistantha* Chiov.; *R. rhombifolia* Blatter & Hallb.

Erect woody herb or scrambler 0,15-1,5 m long; stems densely velvety tomentose with short, mostly rather spreading greyish-white hairs.

Acacia woodland; grassland; open *Commiphora schimperi* bushland on grey soil and gravel of old lake shores; clay depression; red sandy soil; 0-1020 m alt.

Egypt; Socotra, Arabia, Yemen; India (Rajasthan), Pakistan (Boissiera 24a: 102, 1975).

Quite distinct from *R. minima* by: grey-green leaflets with extremely dense gland-dots which are very pale (not dark red or orange).

RHYNCHOSIA

R. pycnostachya (DC.) Meikle

bas.: *Cylista ? pycnostachya* DC.

syn.: *Rhynchosia calycina* Guill. & Perr.; *Cyanospermum calycinum* (Guill. & Perr.) Hook. f.

Twiner with robust stems, woody, 10 cm Ø, wide-twining, terete, glabrous or shortly grey-downy, 4-5 m long; petals persistent, rusty red (decorative).

Forest; lateritic plateau.

Bioko/Fernando Poo.

R. ramosa Verdc.

Perennial probably prostrate herb; stems densely greyish-white tomentose, slender; ripe pods unknown.

Ecology unknown; 750 m alt. (not ± 900).

Only known from the type collected in 1941.

R. resinosa (A. Rich.) Bak., *excl.* var. *schliebenii* (Harms) Hauman (= *R. procurrens* subsp. *procurrens)* and var. *latisepala* Hauman (= *R. procurrens* subsp. *latisepala)*.

bas.: *Fagelia resinosa* A. Rich.

syn.: *Rhynchosia mildbraedii* Harms

Mostly woody viscid scrambler 1,8-7,5 m long or ± erect shrub 0,6-1,5 m tall; stems covered with dense short glandular hairs, later glabrescent, reddish and often fissured.

Ravine forest; bushland; grassland with scattered trees; thickets; scrub; sometimes on termite mounds; *Brachystegia* woodland; cultivations; waste ground; rain-forest with *Albizia, Macaranga, Croton, Ocotea;* forest edge; often forming masses over shrubs; riverine fringes; rocky places; *Julbernardia, Brachystegia, Isoberlinia* and chipya woodlands; *Terminalia* and *Combretum, Albizia* woodlands; mushitu; bamboo associations around dambos; sometimes very widespread; 110-2250 m alt.

S. Africa, Botswana, Namibia.

R. salicifolia Hauman

Undershrub with several erect stems, rigid 20-40 cm tall, 1,5 mm Ø, striate, pubescent, arising from a woody rootstock.

Savanna.

Only known from the type.

R. schimperi Hochst. & Steud. ex Boiss. – Icon.: Bull. Bot. Surv. India 12: 109, 1972.

syn.: *Glycine schimperi* Hochst. & Steud., nom.; *Rhynchosia arenaria* Blatter & Hallb.; *R. cliffordii* Hutch. & E. A. Bruce

Prostrate or spreading shrub or subshrub to 60 cm long with trailing side branches, ± herbaceous, shortly grey tomentose.

Stony or sandy ground; 25-1640 m alt.

Arabia; India (Rajasthan), Pakistan.

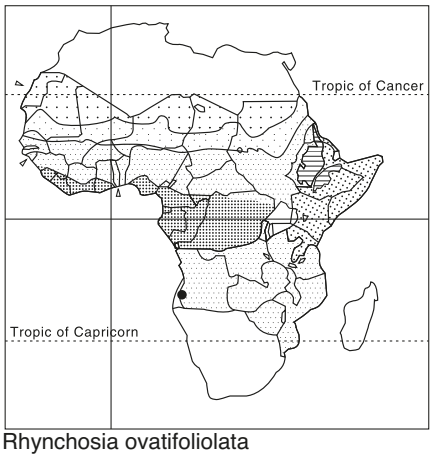
Clearly differs from *R. minima* by its short inflorescences (1-7 flowers) and the characteristic leaflet shape.

R. scutulaefolia Bak. f.

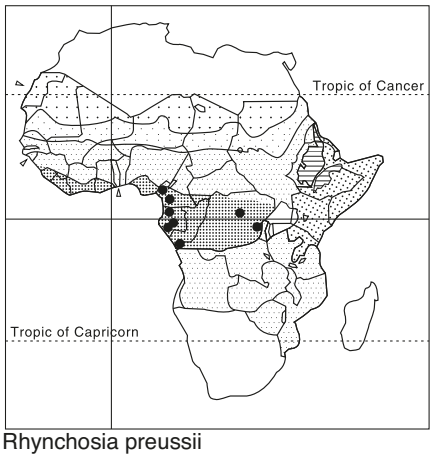
Plant with twining short, puberulous stems from a woody rhizome; roots creeping; flowers with puberulous pale yellow standard and carina, wings bright purplish-carmin.

Common on gravelly ground.

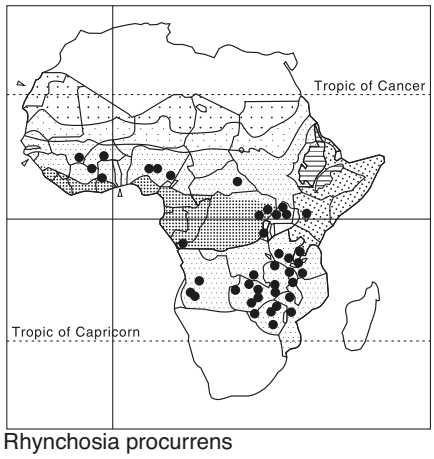
Near *R. nervosa* Benth., *R. monophylla* Schltr.



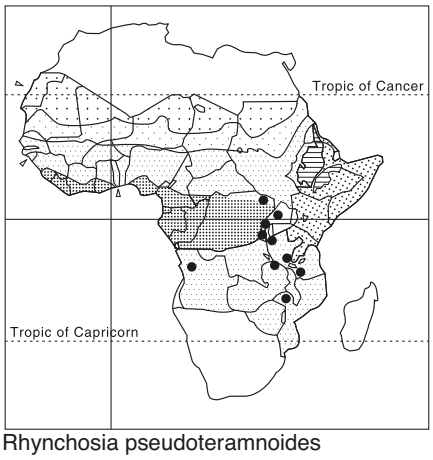
Rhynchosia ovatifoliolata



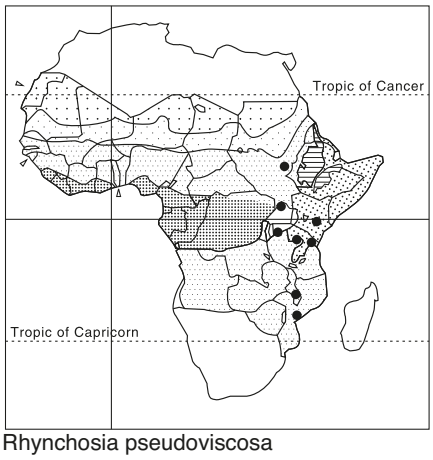
Rhynchosia preussii



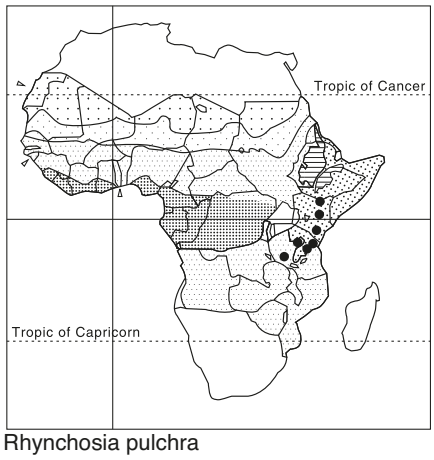
Rhynchosia procurrens



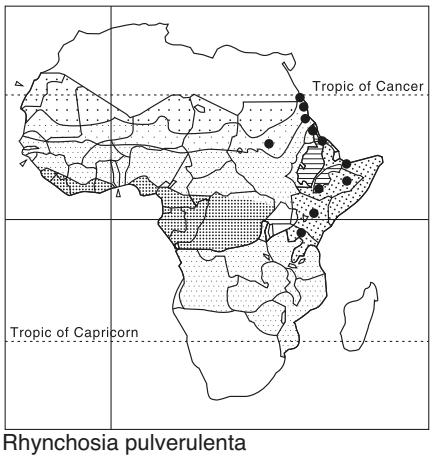
Rhynchosia pseudoteramnoides



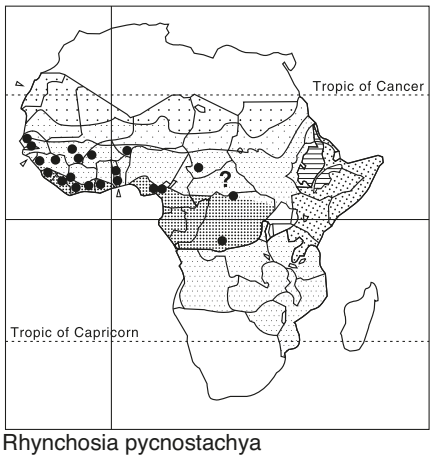
Rhynchosia pseudoviscosa



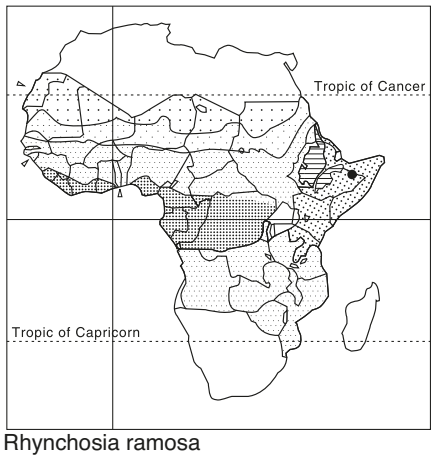
Rhynchosia pulchra



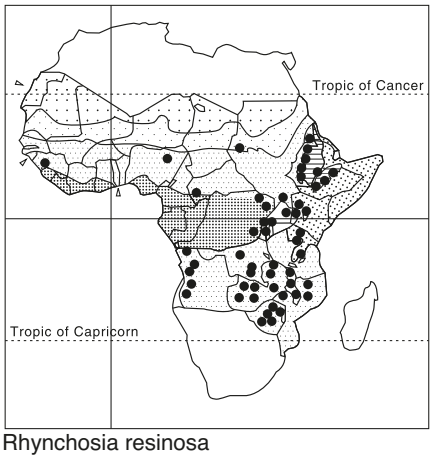
Rhynchosia pulverulenta



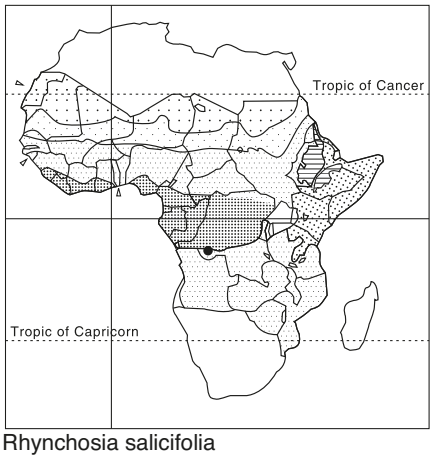
Rhynchosia pycnostachya



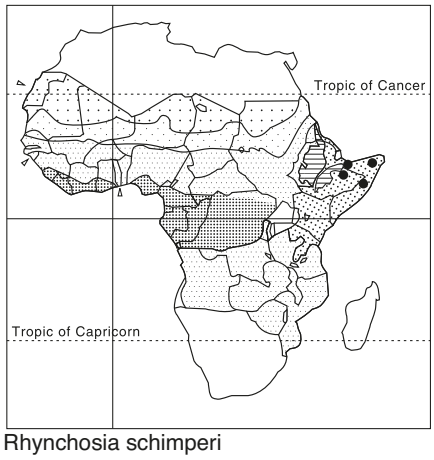
Rhynchosia ramosa



Rhynchosia resinosa



Rhynchosia salicifolia



Rhynchosia schimperi

R. sordida (E. Mey.) Schinz
bas.: *Orthodanum sordidum* E. Mey.
syn.: *Rhynchosia orthodanum* Benth. ex Harv.
Perennial erect herb, subshrub or shrub 0,4-1,8 m tall; whole plant silvery silky with appressed hairs, particularly at apices of shoots, but leaves glabrescent; inflorescences shorter than leaves.
Miombo woodland, wooded open grassland; thickets; 800-1000 m alt.
E S. Africa, Swaziland.

R. speciosa Verdc.
Subshrub with woody branches; stems densely covered with tubercular-based glandular hairs; mature pod unknown.
Rock-crevices on mountain summit; 2700 m alt.
Only one specimen of this magnificent plant collected in 1959; near *R. clivorum, R. tricuspidata;* exists perhaps on Mt. Kulal.

R. splendens Schweinf.
Shrub, erect with branches 0,6 m tall, entirely silvery-tomentose; pod unknown.
Ecology unknown (? wooded grassland); ± 1000 m alt.
Only known from the type collected in 1865.
Perhaps identical with *A. albissima,* further material needed.

R. stipata Meikle
Climber with slender stems, densely covered with pale spreading ferruginous hairs; adult pod unknown.
Twining over quartzite crags; 1500-2100 m alt.

R. stipitata Verdc. – Icon.: Kew Bull. 55: 143, 2000.
Climber 1,4-2 m long; stems pale to dark, wiry, with short whitish deflexed pubescence; pod with stipe 5-9 mm long.
Brachystegia spiciformis woodland; *Baikiaea* mutemwa thicket and other woodland on Kalahari sand; *Isoberlinia, Brachystegia, Uapaca* woodland on dambo edge; *Strychnos, Acacia, Ochna, Combretum, Grewia* open grassy woodland; riverine woodland; valley grassland; 1050-1350 m alt.
Botswana.

R. stipulosa A. Rich.
syn.: *R. viscosa* (Roth) DC. var. *stipulosa* (A. Rich.) Verdc.
Sticky robust climber; stems pubescent and also with long yellow bristly hairs.
Woodland; wooded grassland; 1000-1800 m alt.
With its large stipules (10-15x4-5 mm) and flowers (standard ± 14-15 mm long) probably very near *R. luteola* or conspecific (in this case Richard's name has priority).

R. sublobata (Schumach.) Meikle
bas.: *Glycine sublobata* Schumach.
syn.: *Rhynchosia melanosperma* Klotzsch; *R. macinaca* A. Chev., nom.; *R. katangensis* De Wild.
Perennial prostrate or climbing herb to ± 2 m long from a long stout woody rootstock; stems slender, glabrescent to densely pubescent.
Grassland; grassland with scattered trees; bushland; woodland; abandoned cultivations; humid and shady places; sandy soils; banded vegetation; laterite; clearings; dambo and seasonally swampy grassland beside rivers; riverine thickets; heavy black clay soils; pan margins; rocky hill slopes; disturbed ground at roadsides; open palm-groves at banks of river; 0-1800 m alt.
Namibia, Botswana, S. Africa; Comoro Islands; Madagascar; Yemen.

R. swynnertonii Bak. f.
Climbing herb or liane to 3 m long; stems with rather tangled appressed, pale brown hairs; leaflets discolorous; ripe seeds not seen. Very characteristic species.
Grassland with scattered shrubs; 700-1500 m alt.
Endemic to a limited area on the Zimbabwe/Mozambique border (Vumba Mt., Nyanga Mts.).

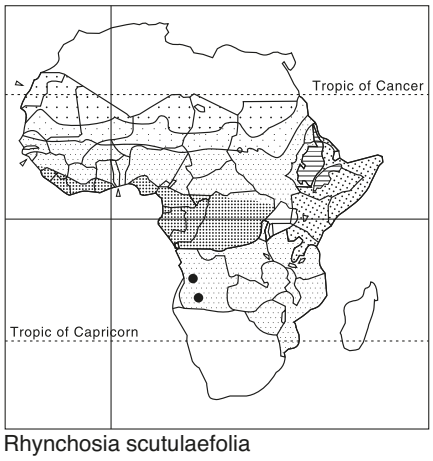
R. teixeirae Torre
Plant with prostrate stems, hispid-pubescent; ripe pod unknown.
Rock crevices; 1800 m alt.
Only known from the type collected in 1956.

R. teramnoides Harms
Slender twiner; stem pubescent or glabrous; ? mature pod unknown?
Ecology unknown.
Not in Chad (Tibesti = *R. totta)*.

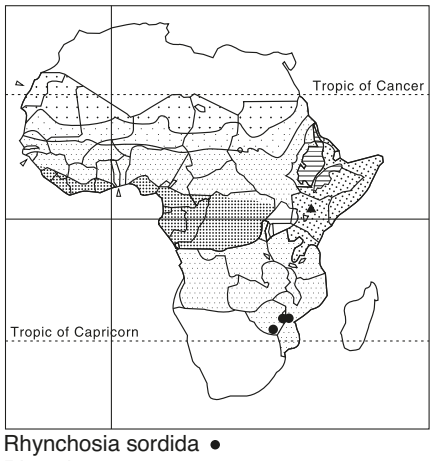
R. torrei Verdc., Fl. Zambes. 3(5): 178, 2001.
Subshrub 1,5-2 m tall; upper parts, inflorescences, pods densely covered with yellow, probably sticky, tubercular-based setae 2 mm long; stems dark brown, lower parts not setose, but woolly-pubescent, hairs ± in longitudinal lines.
Humid places on mountain slopes; 1300 m alt.
Only known from Serra Namuli (Gurué, Mozambique), and from the type collected in 1941.

R. totta (Thunb.) DC.
bas.: *Glycine totta* Thunb.
syn.: *Dolicholus venulosus* Hiern; *Rhynchosia teramnoides* sensu Maire, Bull. Soc. Hist. Nat. Afrique N. 34: 135, 1943, non Harms
Climber or twiner or ascending herb 0,2-1 m long and more with slender ramose stems from a tuberous rootstock; stems glabrescent to densely covered with long silvery or ferruginous appressed or spreading hairs.
Rocky places; sporadic in shortly-bushy pastures with various species of *Crotalaria;* granitic screes; sometimes abundant in *Acacia seyal* zone; open woodland of *Acacia, Combretum,* etc. with *Themeda* grassland; contact dolerite-paragneiss grassland; grassland with *Diplorhynchus, Euclea,* etc., mostly on serpentine and pyroxenite; floodplain grasslands; *Acacia* thickets; dambos; wooded grassland with scattered trees; various woodlands including mopane, *Baikiaea, Hyphaene-Combretum* and others, on heavy alluvium and sandy soils; ± 10-2800 m alt.

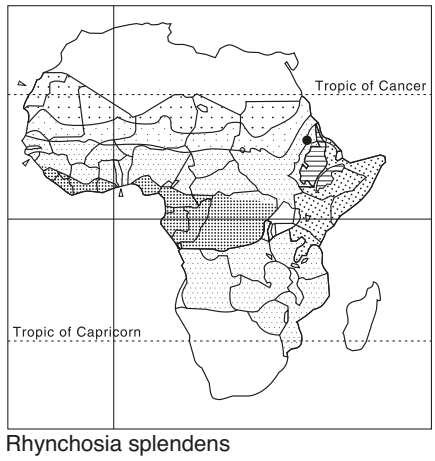
R. totta is a very variable complex (see varities below); intermediates between the varieties exist.
Botswana, Namibia, S. Africa, Swaziland; Yemen.
Comprises 4 vars.: – var. **totta** [syn.: *R. rigidula* DC.; *R. humilis* Eckl. & Zeyh.; *Copisma paniculatum* E. Mey.; *C. pilosum* E. Mey.; *Rhynchosia pilosa* (E. Mey.) Steud.; *R. paniculata* (E. Mey.) Steud.; *Dolicholus totta* (Thunb.) O. Kuntze (with long list of vars., subvars. and forms); *Rhynchosia nervosa* var. *petiolata* Burtt Davy; *R. totta* var. *pilosa* (E. Mey.) Bak. f.]; – var. **elegantissima** (Schinz) Verdc. [bas.: *R. elegantissima* Schinz]; – var. **elongatifolia** Verdc.: – var. **fenchelii** Schinz [syn.: *R. filicaulis* Welw. ex Bak.; *R. hirsuta* Schinz, 1888, non Eckl. & Zeyh., 1836; *Dolicholus venulosus* Hiern; *Rhynchosia venulosa* (Hiern) K. Schum.; *R. cinnamomea* Schinz; *R. remota* Conrath; *R. mollis* Burtt Davy, 1932, non DC. 1825; *R. totta* var. *venulosa* (Hiern) Verdc.; *R. airica* Bruneau de Miré & H. Gillet; *R. tibestica* Bruneau de Miré, H. Gillet & Quézel; *R. ? lynesii* Bak. f. & Martin].



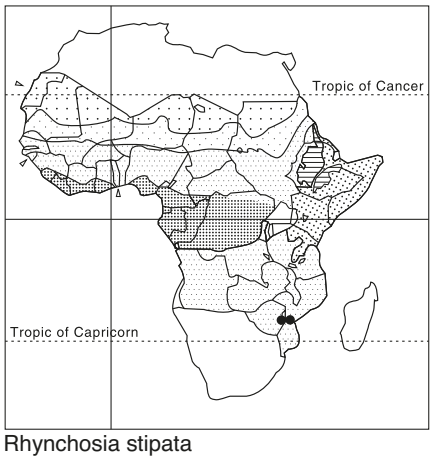
Rhynchosia scutulaefolia



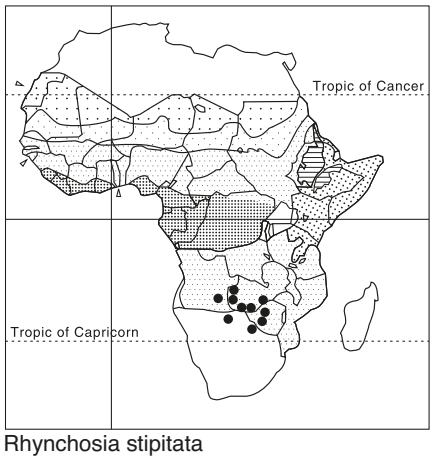
Rhynchosia sordida ●
Rhynchosia speciosa ▲



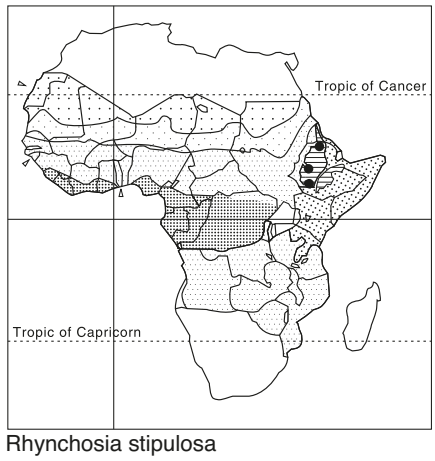
Rhynchosia splendens



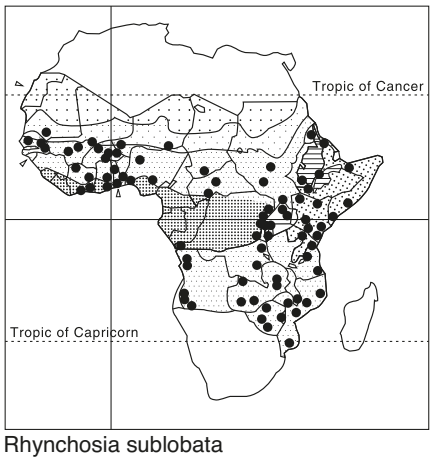
Rhynchosia stipata



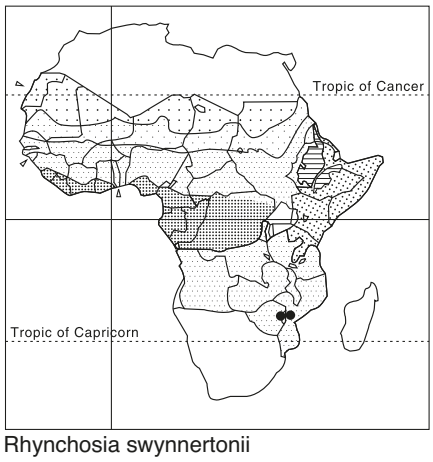
Rhynchosia stipitata



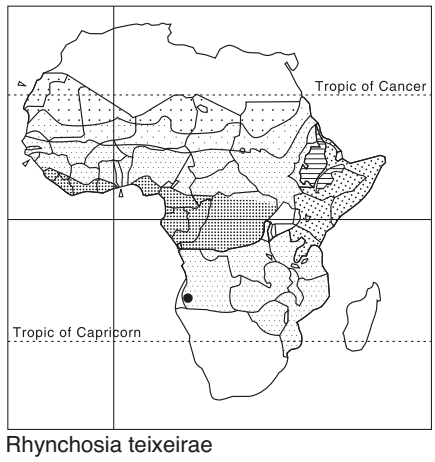
Rhynchosia stipulosa



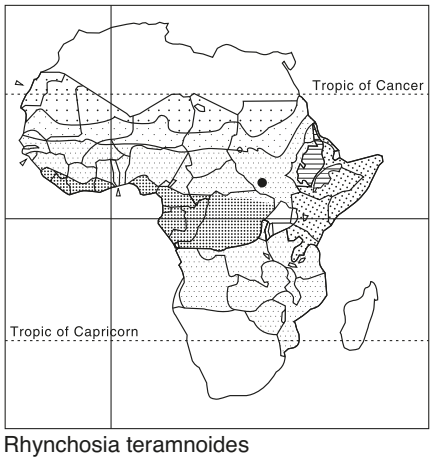
Rhynchosia sublobata



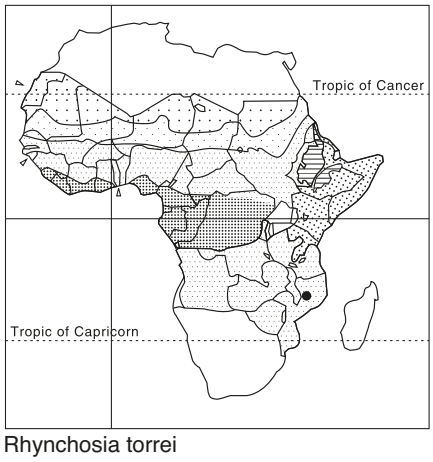
Rhynchosia swynnertonii



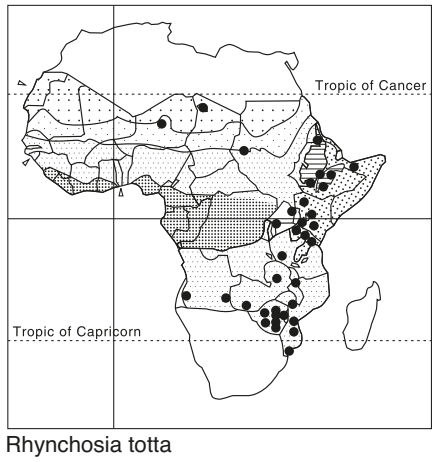
Rhynchosia teixeirae



Rhynchosia teramnoides



Rhynchosia torrei



Rhynchosia totta

R. tricuspidata Bak. f.

Erect or somewhat scrambling sticky shrub 0,6-1,8 m tall ; stems pubescent, and when young also with dense longer yellow tubercular-based glandular hairs ; smelling of balsam.

Exposed mountain tops and granite hills ; evergreen forest edges ; montane grassland on shallow soil ; rocky outcrop in *Loudetia* grassland ; 700-2550 m alt.

Comprises 2 subspp.

Related to or identical with *R. speciosa* but very little material is yet available.

R. usambarensis Taub.

Perennial climbing herb 0,3-1,8 m long from a woody rootstock ; stems with spreading ferruginous or yellow hairs and shorter appressed white pubescence.

Forest edges ; bushland ; riverine thicket ; ? rather dry woodland ; grassy rocky places ; 1000-2400 m alt.

Comprises 2 subspp. (one with 2 vars.) : – var. **obtusifolia** Verdc. of subsp. **usambarensis** in scarcely distinguishable from the Himalayan **R. falconeri** Bak., and one sheet of the four available of the Himalayan plant is itself almost identical with some specimens of the South African **R. hirsuta** Eckl. & Zeyh.

Rwanda ?

R. velutina Wight & Arn.

Perennial climbing or prostrate herb ± 60 cm long, less often somewhat shrubby ; stems pubescent or velvety.

Over bushes near the coast ; sandy beaches and dunes ; coral rocks ; less often inland ; *Brachystegia* woodland on sandy soil ; *Acacia-Commiphora* bushland ; 0-30(-360) m alt.

Comoros ; Madagascar (W: Ambongon) ; India : Madras.

Comprises 2 vars.: – var. **velutina ;** – var. **discolor** (Bak.) Verdc. [syn.: *R. discolor* Klotzsch 1861, non Mart. & Gal. 1843].

R. verdcourtii Thulin

Perennial, climbing or trailing, sometimes ± woody herb with up to at least 2 m long branches from a woody rootstock ; stems angular or ridged, pubescent and with longer usually glandular-based hairs to ± 1 mm long and gland-dots.

Grassland ; deciduous bushland and woodland ; edge of swamp ; forest ; 800-1450 m alt.

R. viscosa (Roth) DC., *excl.* var. *stipulosa* (A. Rich.) Verdc. (= **R. stipulosa)**.

bas.: *Glycine viscosa* Roth

Perennial climbing or trailing viscid herb 1,5-2,5 m long ; stems pubescent and also with longer glandular-based hairs.

Forest edges ; bushland ; grassland ; cultivated land ; wooded thickets ; marshy places ; clearings ; riverine vegetation (bushy margins of palm-groves along river banks) ; sometimes coastal ; savannas ; near sea-level-1200 m alt.

W Madagascar ; Comoros, Mascarenes ; India (widespread), Sri Lanka ; Rodrigues ; Mauritius (? cultivated). – Somalia ?

Comprises 2 subspp., subsp. **viscosa** with 2 vars.

R. wildii Verdc. – Icon.: Kew Bull. 55 : 139, 2000.

Straggling much-branched aromatic sticky shrub 0,8-1,2 m tall ; young branches densely pubescent and with numerous yellow tubercular-based hairs ; older stems pale grey, glabrescent, minutely fissured ; mature seeds unknown.

Andropogon grassland with *Acacia nigrescens, Combretum, Bolusanthus, Diospyros, Pterocarpus ;* dry watercourses ; on pebbles ; poorest stony places ; arid sandstone ; rich alluvium ; 300-1200 m alt.

R. zernyi Harms

Scrambler to 2 m long ; stems pubescent and also with longer spreading hairs ; seeds unknown.

Edge of *Brachystegia* woodland ; chipya woodland ; dambo fringes ; grassland on rocky hillsides ; 1500-1750 m alt.

* * *

See also list of insufficiently known species in Enum. 2 : 114, 1992, at the end of the species list ; and to be added *Rhynchosia cyanosperma* Bak. f. fa. *acuta* Baker (Miles 19, Nigeria).

SYNONYMS :

Rhynchosia acuminata Eckl. & Zeyh. = **Rhynchosia caribaea**
affinis De Wild. = **R. insignis** subsp.
airica Bruneau de Miré & H. Gillet = **R. totta** var. **fenchelii**
"albidiflora" sensu J. Blake (Kenya) = **R. hirta** (for *R. albiflora)*
albiflora (Sims) Alston = **R. hirta**
albomarginata Chiov. = **R. albissima**
antennulifera Baker = **Eminia**
arenaria Blatter & Hallb. = **Rhynchosia schimperi**
aureovillosa Hauman, incl. var. *humbertii* Hauman = **R. ferruginea**
benguellensis Torre = **Pseudeminia**
borianii Schweinf. = **Pseudoeriosema borianii** subsp. **borianii**
breviracemosa Hauman = **Rhynchosia viscosa** subsp. **viscosa** var.
buramensis Hutch. & E. A. Bruce = **R. elegans** var. **elegans**
cajanoides Guill. & Perr. = **Eriosema psoraleoides**
calycina Guill. & Perr. = **Rhynchosia pycnostachya**
chrysadenia Taub. = **R. densiflora** subsp.
cienkowskii Schweinf. = **Tephrosia lupinifolia**
cinnamomea Schinz = **Rhynchosia totta** var. **fenchelii**
cliffordii Hutch. & E. A. Bruce = **R. schimperi**
clivorum S. Moore
var. *adjoensis* Hauman = **R. clivorum** subsp. **pycnantha**
var. *caudata* Meikle = **R. clivorum** subsp. **pycnantha**
var *fulvida* Meikle = **R. clivorum** subsp. **pycnantha**
var. *pycnantha* (Harms) Verdc. = **R. clivorum** subsp. **pycnantha**
comosa Baker = **Pseudeminia**
confertiflora A. Rich. = **Pseudarthria**
confusa Burtt Davy = **Rhynchosia fleckii**
congestiflora Schinz = **R. caribaea** var. **caribaea**
cyanosperma Baker = **R. hirta**
debilis G. Don = **R. densiflora** subsp.

desertorum Harms = **R. fleckii**
discolor Klotzsch = **R. velutina**
elachistantha Chiov. = **R. pulverulenta**
elegantissima Schinz = **R. totta** var.
fagelioides Taub. ex Engl. = **R. pseudoviscosa**
faginea Guill. & Perr. = **Flemingia**
ficifolia Benth. ex Harv. = **Neorautanenia**
filicaulis Welw. ex Baker = **Rhynchosia totta** var. **fenchelii**
fischeri Harms = **R. densiflora** subsp. **chrysadenia**
flagellaris Bak. = **R. minima** intermediates var. **prostrata** – var. **nuda**
flavissima Baker **= R. malacophylla**
var. *macrocalyx* Chiov. = **R. minima** var. **macrocalyx**
floribunda Baker = **R. procurrens** subsp.
floribunda sensu Meikle F. W. T. A. = **R. procurrens** subsp. **latisepala**
friesiorum Harms = **R. ferruginea**
gazensis Bak. f. = **R. caribaea** var. **caribaea**
gibba E. Mey. = **R. caribaea** var. **caribaea**
glomerata Guill. & Perr. incl. var. *albida* Guill. & Perr. = **Eriosema**
glomerulans Fiori = **Rhynchosia densiflora** subsp. **chrysadenia**
glutinosa Harms = **R. nyasica** var. **nyasica**
gorsii Berh. = **R. orthobotrya**
grantii Baker = **Pseudoeriosema borianii** subsp. **borianii**
hermannii Bak. f. = **Rhynchosia elegans** var. **elegans**
hirsuta Schinz = **R. totta** var. **fenchelii**
hockii De Wild., incl. var. *grandifolia* Hauman = **R. minima** var. **prostrata**
holubii Hemsl. = **Eminia**
hookeri G. Don = **Rhynchosia malacophylla**
humilis Eckl. & Zeyh. = **R. totta** var. **totta**
imbricata Baker = **R. nyasica** var. **nyasica**
imbricata sensu Hauman = **R. orthobotrya**
ischnoclada Harms = **R. minima** var. **prostrata**
karaguensis Harms = **R. orthobotrya**
katangensis De Wild. = **R. sublobata**
kerstingii Harms = **R. nyasica** var. **nyasica**
klotzschii Cufod. = **R. velutina** var. **discolor**
longepedunculata A. Rich. = **Eriosema**
lynesii Bak. f. & Martin = **Rhynchosia** ? **totta** var. **fenchelii**
macinaca A. Chev. = **R. sublobata**
maitlandii Bak. f. = **R. minima** var. **macrocalyx**
manobotrya Harms = **R. goetzei** var. **goetzei**
melanosperma Klotzsch = **R. sublobata**
memnonia (Delile) DC. = **R. minima** var. **memnonia**
fa. *pulverulenta* (Stocks) A. Terracc. = **R. pulverulenta**
var. *candida* (Welw. ex Hiern) Bak. f. = **R. candida**
var. *discolor* Baker = **R. velutina** var. **discolor**
var. *prostrata* Harv. **= R. minima** var. **prostrata**
mendoncae Torre = **Pseudeminia**
mildbraedii Harms = **Rhynchosia resinosa**
mollis Burtt Davy = **R. totta** var. **fenchelii**
moninensis Harms = **R. luteola** var. **luteola**

muxiria (Bak.) Torre = **Pseudeminia**
nervosa Benth. ex Harv.
var. *pauciflora* Harv. = **Rhynchosia fleckii**
var. *petiolata* Burtt Davy = **R. totta** var. **totta**
nuda DC. = **R. minima** var. **nuda**
oligantha Harms = **R. fleckii**
oreophila Harms = **R. clivorum** subsp. **pycnantha**
orthodanum Benth. ex Harv. = **R. sordida**
paniculata (E. Mey.) Steud. = **R. totta** var. **totta**
pilosa (E. Mey.) Steud. = **R. totta** var. **totta**
polystachya A. Rich., non E. Mey = **Eriosema jurionianum**
procurrens (Hiern) K. Schum.
var. *rhodesica* Bak. f. = **Rhynchosia procurrens** subsp. **floribunda**
prostrata Suess. = **R. monophylla**
pseudocomosa in herb., unpubl. = **Pseudeminia comosa**
pycnantha Harms = **Rhynchosia clivorum** subsp. **pycnantha**
remota Conrath = **R. totta** var. **fenchelii**
reptans Suess. = **R. monophylla**
resinosa (Hochst. ex A. Rich.) Baker
var. *latisepala* Hauman = **R. procurrens** subsp. **latisepala**
var. *schliebenii* (Harms) Hauman = **R. procurrens** subsp. **procurrens**
rhodesica Bak. f. = **R. goetzei** var. **goetzei**
rhombifolia Blatter & Hallb. = **R. pulverulenta**
rigidula DC. = **R. totta** var. **totta**
rivae Schweinf. = **R.** ? **ferruginea**
schliebenii Harms = **R. procurrens** subsp. **procurrens**
schoelleri Schweinf. = **R. minima** var. **prostrata**
schweinfurthii Harms = **R. densiflora** subsp. **chrysadenia**
var. *stuhlmannii* (Harms) Bak. f. = **R. densiflora** subsp. **stuhlmannii**
sennaarensis Schweinf.
var. *flavissima* Schweinf = **R. malacophylla**
var. *macrocalyx* (Chiov.) Cufod. = **R. minima** var. **macrocalyx**
sericosemium Harms = **R. luteola** var. **luteola**
sp. C sensu F. T. E. A. = **R. verdcourtii**
sphaerocephala Baker = **Dolichos sericeus** subsp. **sericeus**
stenodon Harms = **Rhynchosia elegans** var. **elegans**
stuhlmannii Harms = **R. densiflora** subsp.
subaphylla Baker f. = **R. insignis** subsp. **insignis**
teramnoides sensu Maire, non Harms = **R. totta**
tibestica Bruneau de Miré, H. Gillet & Quézel = **R. totta** var. **fenchelii**
tomentosa (Roxb.) Baill. = **R. hirta**
totta (Thunb.) DC.
var. *pilosa* (E. Mey.) Bak. f. = **R. totta** var. **totta**
var. *venulosa* (Hiern) Verdc. = **R. totta** var. **fenchelii**
venulosa (Hiern) K. Schum. = **R. totta** var. **fenchelii**
verdickii De Wild. = **R. luteola** var.
violacea (Hiern) K. Schum. = **R. viscosa** subsp.
viscosa (Roth) DC.
var. *stipulosa* (A. Rich.) Verdc. = **R. stipulosa**
viscosa sensu Brenan = **R. orthobotrya**

RHYNCHOTROPIS / *2*

? Pod unknown in 1 species.

Rhynchotropis marginata (N. E. Br.) J. B. Gillett

Perennial herb or subshrub with a branched woody rootstock ; leafy shoots woody at base, 20-40 cm tall, with 1-foliolate linear leaves (2-5-7 x 0,2-0,3 cm) ; flowering shoots 5-15 cm tall, without normal leaves and appearing before the leafy ones ; flowers blue, pinkish or white ; ovary with 3-5 ovules ; pod unknown ?

Dry open woods.

R. poggei (Taub.) Harms

syn.: *R. dekindtii* Harms

Perennial herb with a branched woody rootstock ; stems leafy, several, 20-50 cm tall, 2-3 mm Ø, striate, angled ; leaves linear-elliptic, 4-15 x 0,3-1 cm ; inflorescences terminal or in leaf axils ; flowers purple ; pods 5-6-seeded.

Open woodland, on dry sandy soils ; sandy clearings.

Variable in width of leaves.

SYNONYM :

Rhynchotropis curtisiae Johnst. = **Microcharis microcharoides** var. **microcharoides**

ROBYNSIOPHYTON / *1*

Monospecific genus.

Robynsiophyton vanderystii R. Wilczek – Icon.: Fl. Zambes. 3(7) : 67, 2003.

Annual or short-lived perennial herb or subshrub with erect pilose stem 10-30 cm tall and often longer spreading to weakly ascending lower branches, from a taproot ; leaves 3-foliolate ; flowers small, pale yellow in small ± sessile heads.

Short grassland on sandy soil, often in damp places ; 1150-1350 m alt.

ROTHIA / *1*

Rothia hirsuta (Guill. & Perr.) Bak.

bas.: *Xerocarpus hirsutus* Guill. & Perr.

syn.: *Lotononis desertorum* Dummer ; *Amphinomia desertorum* (Dummer) A. Schreiber ; *Westonia hirsuta* (Guill. & Perr.) O. Kuntze

Annual herb with shortly erect stem developing longer slender procumbent to prostrate branches with long hairs from the base 10-40 cm long ; leaves 3-foliolate ; corolla small, white or yellowish, often marked reddish.

Short grassland, disturbed places ; sand, sunny lawn (W Africa) ; uncommon weed of cultivated ground, often on dry sandy soil (E Africa) ; damp meadows at river, sparingly in shortly grassy pastures flooded in the rainy season (Angola) ; 0-1800 m alt., 700-2600 m in Ethiopia.

Variable in shape of leaflets.

Namibia, NE S. Africa.

In sterile state resembling *Lotononis platycarpa.*

SCHEFFLERODENDRON / *4*

A poorly known genus of 4 closely related species : *S. gabonense* without records on pods, seeds, ecology, and only type known ; *S. gilbertianum,* no flowers seen and only type known.

Schefflerodendron adenopetalum (Taub.) Harms

bas.: *Millettia (?) adenopetala* Taub.

Deciduous tree 10-15 m ; bole to 30 cm Ø with brown little-fissured bark ; young branchlets, leaf petiole and rachis covered with brown hairs and glands ; leaflets 5-7 ; corolla glandular ; pod falcate, inflated, woody, dehiscent.

Gallery forest.

S. gabonense Pellegr.

Deciduous tree ; twigs, leaves (beneath) and inflorescences densely reddish-brown hairy ; corolla white, glandular ; pod and seeds unknown.

Ecology unknown.

Known only from the type collected in 1930 (Le Testu 8022).

S. gilbertianum J. Léonard & J.-M. Latour

Deciduous tree 25-30 m ; bole to 40 cm Ø and 1,3 m in girth, slightly widened at base ; bark rugose, reddish-brown, fissured, scaly ; twigs, leaves and inflorescences densely reddish-brown hairy, later glabrescent ; leaflets 7-11, with a strap-like tip 0,5-1,5 cm long ; flowers unknown ; pod woody, obliquely ridged, warty.

Forest on firm ground with *Antiaris welwitschii, Piptadenia africana, Canarium schweinfurthii, Millettia drastica* etc., said to be common.

Known only from the type collected in 1946 (Léonard 659).

S. usambarense Harms

Deciduous tree 15-30 m ; bole somewhat tortuous, to 70 cm Ø, slightly fluted at base ; bark fissured, greenish-grey with brown spots, flaking off in irregular patches ; young twigs, leaf-rachides and leaflet-undersides covered with short crisped dark brown hairs disappearing at maturity ; leaflets 7-12, with a strap-like tip 0,5-1,5 cm long ; corolla white or pink, pubescent ; pod woody, with oblique striae, rusty tomentose outside and inside.

Low-land rain-forest, swampy forest ; 800-1100 m alt.

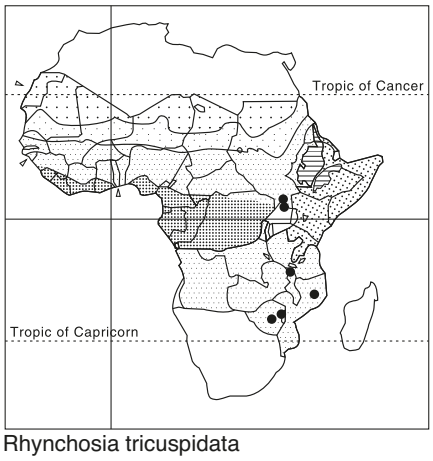
Comprises 2 vars. (var. **macrophyllum** Pellegr. in Gabon and Cameroon).

Plants cultivated at Yangambi (Zaire).

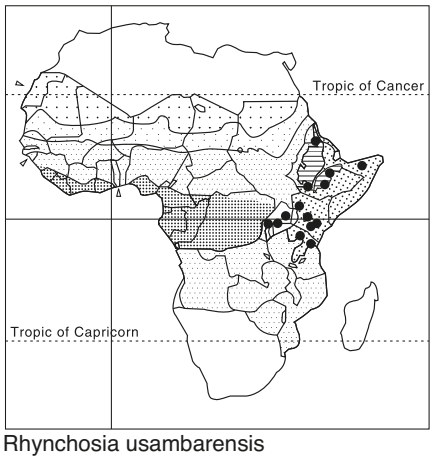
Very close to **S. adenopetalum,** its var. **macrophyllum** approaching the latter.

SYNONYM :

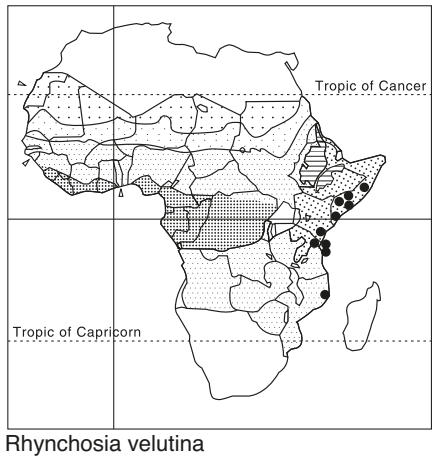
Schefflerodendron gazense Bak. f. = **Craibia brevicaudata** subsp. **baptistarum**



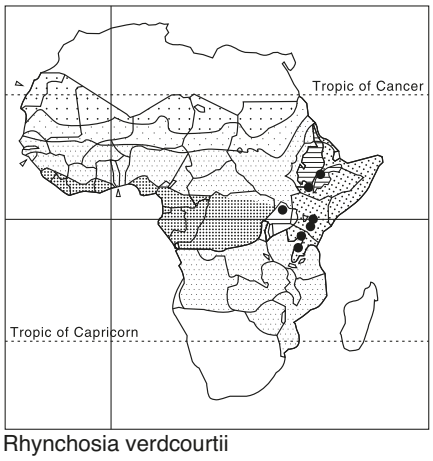
Rhynchosia tricuspidata



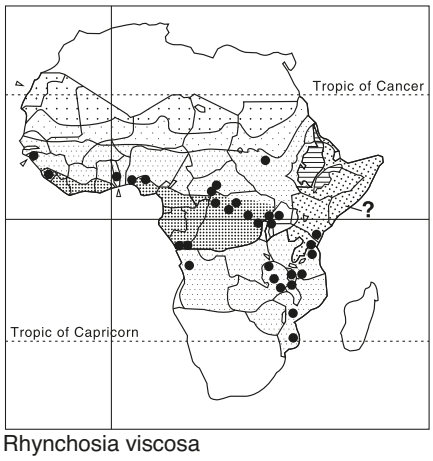
Rhynchosia usambarensis



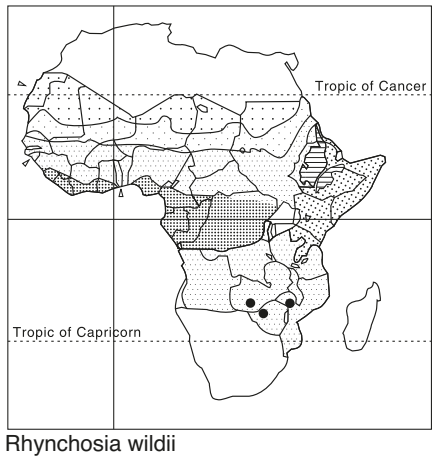
Rhynchosia velutina



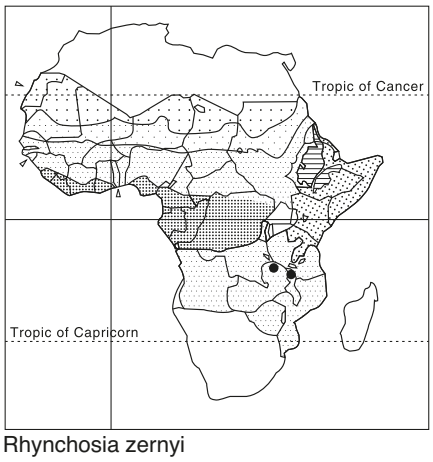
Rhynchosia verdcourtii



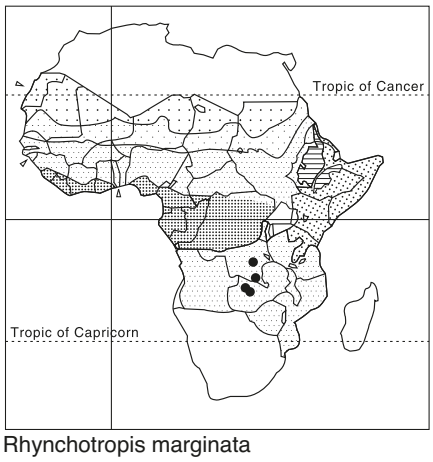
Rhynchosia viscosa



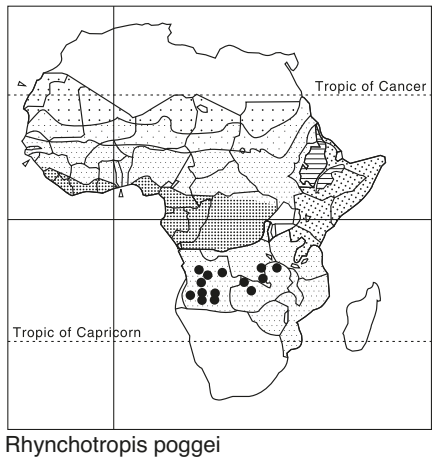
Rhynchosia wildii



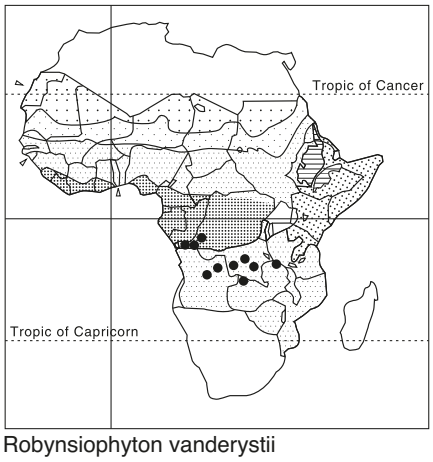
Rhynchosia zernyi



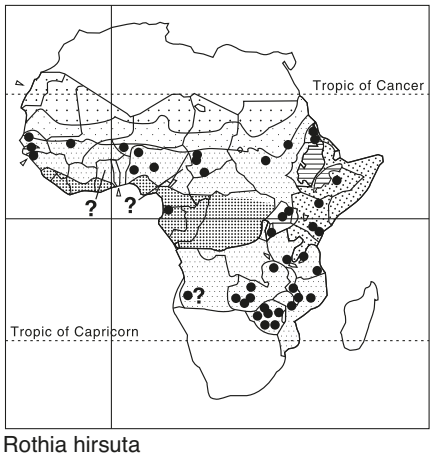
Rhynchotropis marginata



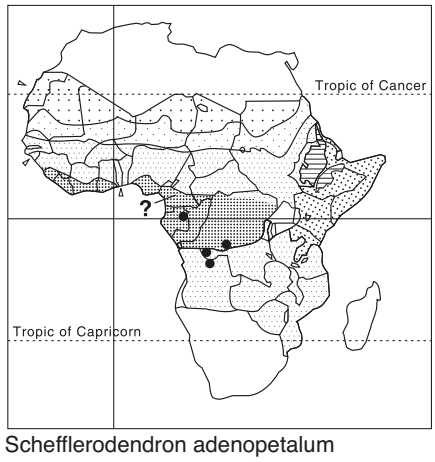
Rhynchotropis poggei



Robynsiophyton vanderystii



Rothia hirsuta



Schefflerodendron adenopetalum

[SCORPIURUS]

[Scorpiurus muricatus L.]

Annual herb with glabrous or pubescent decumbent stems to 80 cm long ; pod contorted, with tubercles or spines (Ethiopian material).

Probably introduced in Ethiopia : as a weed in grassland, on roadsides, in cultivations on black cotton soil ; 1500-3200 m alt.

Native of E and S Mediterranean region, Egypt, Sinai, Arabia, Iraq, Iran.

Not mapped.

SECURIGERA / *1*

About 12 species, mainly in the Mediterranean Region. So far only one species known from tropical Africa (cf. S. Fici in Fl. Medit. 1: 181, 1991).

Securigera somalensis (Thulin) Lassen

bas.: *Coronilla somalensis* Thulin

Annual ± glabrous herb with decumbent stems 25 cm long ; minute club-shaped multicellular hairs on young branches, leaf-rhachides and peduncles ; umbels 1-2 flowered ; corolla small, yellow, as long as callyx ; pod erect, straight, 5-angled, with 7 segments.

Shallow soil over limestone ; 1150-2050 m alt.

Closely related to *C. cretica* L. (with *pink* flowers) from E Mediterranean Region.

SESBANIA / *28*

ABOU-AL-ENAIN, M. M. & al. (1998). Karyological Studies in Some African Species of the Genus Sesbania (Fabaceae). *Cytologia* 63 : 1-8.

BERHAUT, J. (1952). Les Sesbania du Sénégal. *Bull. Soc. Bot. France* 99 : 297-301.

FORNI-MARTINS, E. R. & M. GUERRA (1999). Longitudinal differentiation in chromosomes of some Sesbania Scop. species (Fabaceae). *Caryologia* 52 : 97-103.

LOUTFY, M. M. (1999). SEM of seed coat surface characters and the taxonomic relationship in the genus Sesbania Scop. (Leguminosae-Papilionoideae). *Taeckholmia* 19 : 53-61.

PHILLIPS, E. P. & J. HUTCHINSON (1921). A revision of the African species of Sesbania. *Bothalia* 1: 40-56.

Sesbania bispinosa (Jacq.) W. F. Wight, incl. var. *micrantha* (Chiov.) J. B. Gillett

bas.: *Aeschynomene bispinosa* Jacq.

syn.: *Aeschynomene aculeata* Schreb., non *Sesbania aculeata* (Willd.) Poir. ; *Coronilla aculeata* Willd., nom. illegit. ; *Sesbania aculeata* (Willd.) Pers., nom. illegit. ; *S. aculeata* var. *micrantha* Chiov.

Erect annual or biennal, slightly woody herb, 0,6-3 m tall ; stems glabrous, or sparsely pilose when young, usually sparsely aculeate ; pod straight-sided, never truly torulose.

Marshes, ditches, river margins ; also a weed in cultivations on alluvial land, especially in rice fields ; often in saline areas ; floodplains, seasonally inundated depressions, sandbanks of brackish lagoons ; occasionally in open miombo woodland (Fl. Zambes. area) ; on grey or black sandy soils, riverine alluvium ; 0-1100 m alt. (to 300 m only in Fl. E. Africa-area ; 1100 m in Zimbabwe).

Variable species ; stunted, depauperate or young plants with reduced leaves and inflorescences have been named var. *micrantha.*

Namibia, S. Africa, Botswana, Swaziland, Lesotho ; Madagascar, Comoros, Mascarenes, Mauritius, Seychelles ; Iraq ; Oman ; SE Asia ; Fiji Isl., tropical America.

Probably introduced (as a weed) in much of the range.

S. brevipedunculata J. B. Gillett

Annual herb 1-2,5 m tall ; stems glabrous, aculeate, much-branched.

Granitic soil ; black clays ; swampy ground, damp grassland, sandy river-banks ; 900-1630 m alt.

Botswana, S. Africa.

S. cinerascens Welw. ex Bak. emend. E. P. Sousa, non Cronq., Fl. Congo Belge 5 : 79, 1954 (cf. **S. macrantha** var. **levis)**.

syn.: *S. kapangensis* Cronquist

Short-lived suffrutescent perennial herb ± 1,2-4 m tall ; stems pithy, glabrous or less commonly densely shortly woolly particularly on the young branches ; virgately branched ; degree of pubescence very variable.

Thickets near river ; swampy places ; peaty soil or mud ; flooded dambos, periodically inundated marshes, river and lake margins ; 900-1500 m alt.

Caprivi Strip, Namibia, Botswana.

The French botanist H. Gillet has collected his specimen 897 in Chad, Ennedi, mare d'Aoué (17°12' N / 22°01' E) ; it is pehaps the same locality as that cited by the Bristish botanist J. B. Gillett for the specimen Hutchinson 130 (Aouei ± 17° N / 23° E) under the name *S. cinerascens ;* but the H. Gillet specimen is perhaps *S. sesban* subsp. *punctata.*

S. coerulescens Harms ("caerulescens" sensu auctt. plur.).

syn.: *S. hockii* De Wild.

Annual or biennal herb or subshrub 2,5-5 m tall ; stems pithy, glabrous, unarmed, marked with dark green or brown vertical lines or dashes. When flowering, this species is at once distinguished from all others by the large (18-30 mm long) *blue* flowers.

Swampy places ; wet vleis especially after burning ; peaty or sandy soils ; occasionally as a component of *Brachystegia* woodland ; lake shores, river-banks, bogs, swampy grassland ; 1200-1750 m alt.

Forms with white flowers exist.

Namibia.

S. dalzielii E. Phillips & Hutch.

Annual herb 0,5-2 m tall ; branches weak, angular when young, slightly pubescent, at length striate.

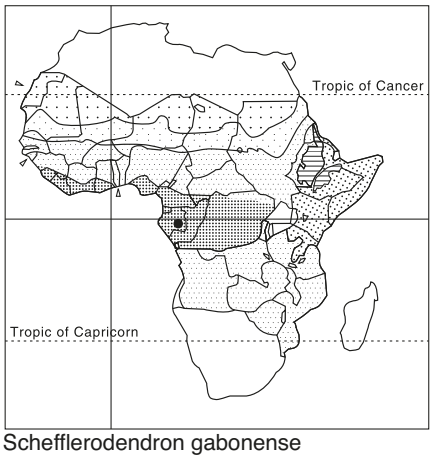
Marshy places ; pools ; river banks ; meadows with *Vossia cuspidata, Echinochloa stagnina.*

Very close to *S. microphylla.*

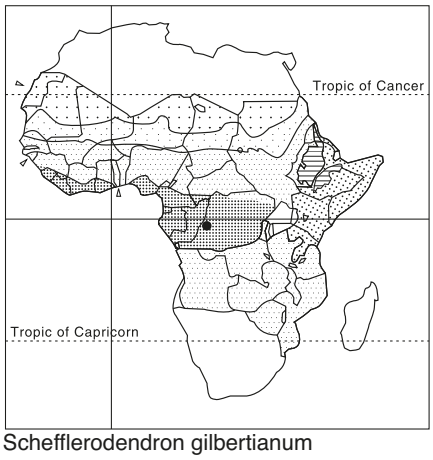
S. dummeri E. Phillips & Hutch., *excl.* syntype Dummer 225, P (= *S. macrantha).*

Slender annual or biennal, softly half-woody herb, 3-5 m tall ; branchlets glabrous except when quite young, nearly terete, sometimes sparsely aculeate.

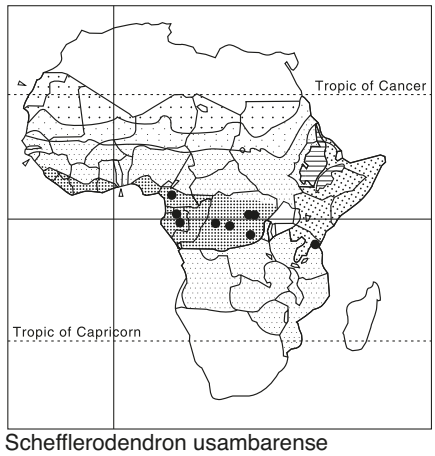
Swampy places, often river-banks ; 100-2000 m alt.



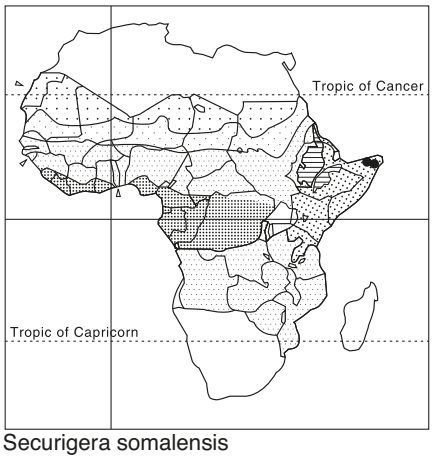
Schefflerodendron gabonense



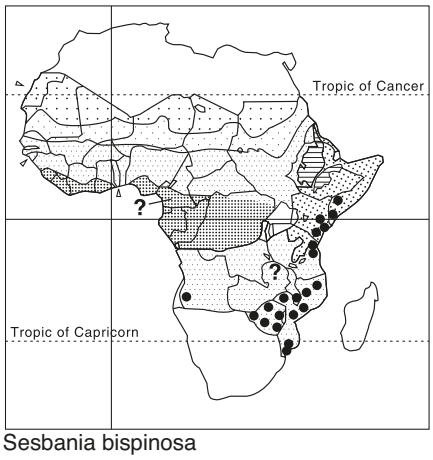
Schefflerodendron gilbertianum



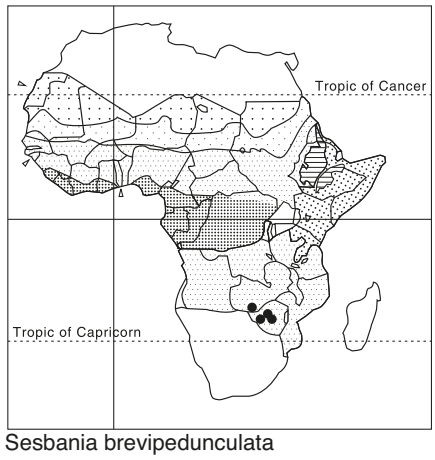
Schefflerodendron usambarense



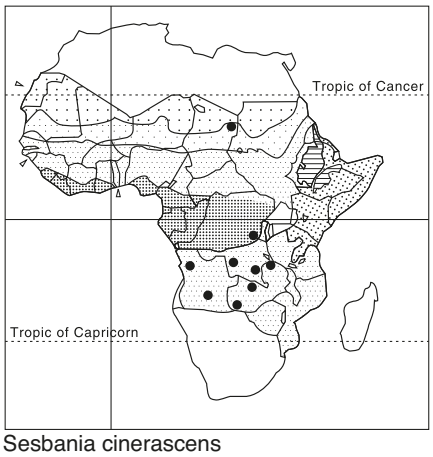
Securigera somalensis



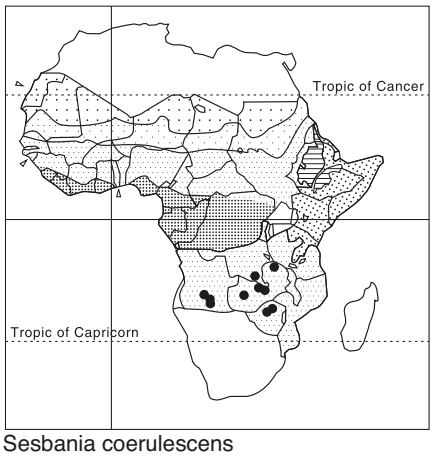
Sesbania bispinosa



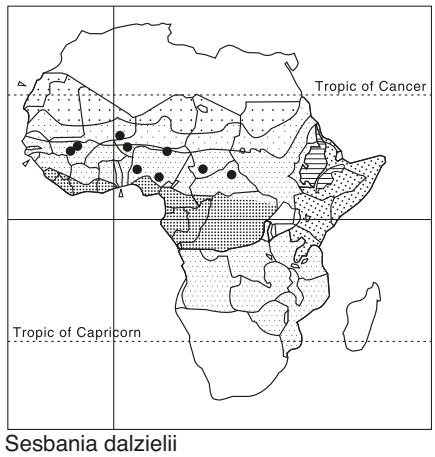
Sesbania brevipedunculata



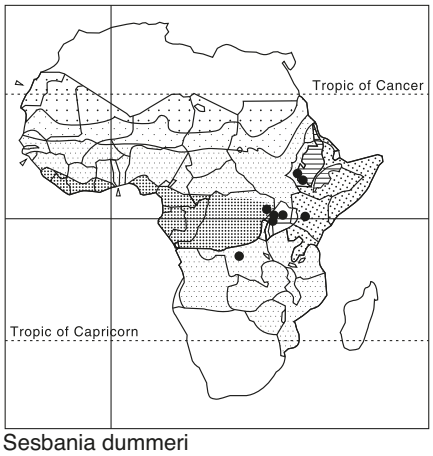
Sesbania cinerascens



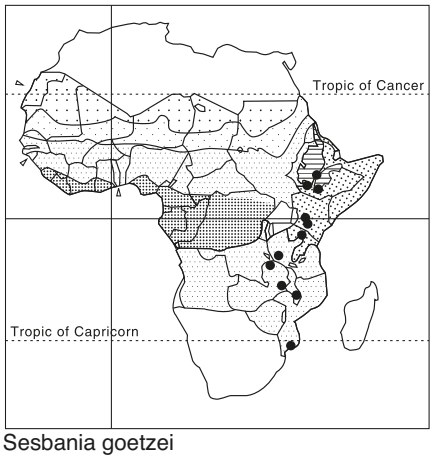
Sesbania coerulescens



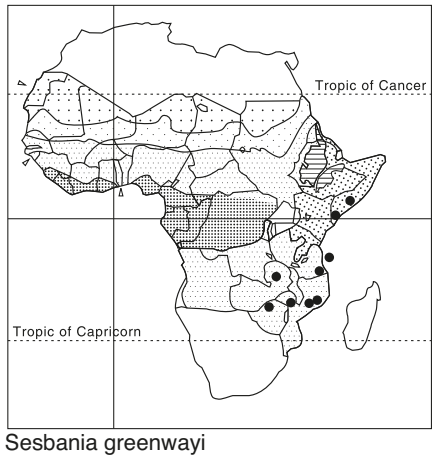
Sesbania dalzielii



Sesbania dummeri



Sesbania goetzei



Sesbania greenwayi

S. goetzei Harms, *excl.* var. *glabra* Chiov. (= *S. keniensis)*.

Softly woody bush or small tree 3-6 m tall, the trunk 5-12 cm Ø; young stems densely pubescent, never aculeate.

Land liable to flood beside ± alkaline lakes; sometimes forming pure stands or thickets; lower parts of valley which are flooded for long periods; coastal sandy beaches; lake-shores; 0-1900 m alt.

Comprises 2 subspp.: – subsp. **goetzei;** – subsp. **multiflora** J. B. Gillett. Intermediates occur.

[S. grandiflora (L.) Poir.]

bas.: *Robinia grandiflora* L.

Fast-growing, short-lived tree to 7 m; stems tomentose, unarmed; leaves to 30 cm long.

Native of Asia. Grown as an ornamental, for forage, firewood etc. Naturalized in tropical Africa.

S. greenwayi J. B. Gillett

Erect slightly woody annual herb 1-5,5 m tall; stems glabrous or sparsely pilose when young, rarely with a few small prickles.

Seasonally flooded land; abandoned rice fields (locally dominant as a pioneer), on brown or black cotton soils; wooded grassland; banks of lake; heavy clay and alluvial soils; depression dried out after seasonal flooding; 0-1000 m alt.

Grows with extraordinary rapidity.

S. hepperi J. B. Gillett

Herb slightly woody at the base (1-)2-2,2(-4) m tall, rarely decumbent and very slender; stems glabrous or sparsely pilose.

Probably temporarily flooded area; 190-± 1000 m alt.

S. hirtistyla J. B. Gillett

Half-woody, erect herb 1(-3) m tall; stems sparsely pilose.

Damp soil; abandoned native cultivation; sometimes fairly common; swampy grassland; irrigated rice-fields (rather troublesome weed); 0-600 m alt.

Comprises 2 vars.

S. keniensis J. B. Gillett

syn.: *S. goetzei* Harms var. *glabra* Chiov.

Softly woody shrub or tree, branched from near the base, 2-7 m tall; stem to 10 cm Ø; branchlets glabrous or almost so, rarely somewhat aculeate.

By streams and in marshy places; also at the edges of evergreen forest; leached soils or beside fresh water (not beside ± saline lakes as its nearest relative **S. goetzei)**; 1200-2400 m alt.

S. leptocarpa DC., excl. var. *confaloniana* Chiov. (= *S. sesban* subsp. *sesban* var. *nubica).*

syn.: *S. filiformis* Guill. & Perr. in sched.; *S. arabica* Hochst. ex E. Phillips & Hutch.) p. maj. p.; *S. mossambicensis* Klotzsch

Slender, glabrous annual herb 0,3-3 m tall; stems finely grooved; sometimes slightly aculeate and confused with *S. bispinosa* except by the fruit.

Seasonal pool margins; swamp; weed in cotton fields; irrigated farmland; sometimes in stands; sand banks; coastal dunes; riverine forest margins; sandy soil; 40-1250 m alt.

Cape Verde Isl.; Yemen.

Comprises 2 vars.: – var. **leptocarpa;** – var. **minimiflora** (J. B. Gillett) G. P. Lewis (bas.: *S. mossambicensis* subsp. *minimiflora* J. B. Gillett).

Not in Zaire (= **S. microphylla)**; not in Ghana (Morton GC 9915 = **S. sudanica)**.

S. macrantha Welw. ex E. Phillips & Hutch.

Softly woody herb or tree 1-6 m tall, glabrous throughout except for the calyx-margin and a few hairs on the stipules; stems usually aculeate (var. **levis** non-aculeate).

Swamps or lake margins; damper parts of *Julbernardia-Brachystegia* woodland; damp sandy soils or deep ferrugineous clays; in bushy places and moist thickets by streams; grassy valley; sometimes cultivated (part of the wide distribution must be due to this fact); 750-2300 m alt.

S. Africa.

Comprises 2 vars.: – var. **macrantha;** – var. **levis** J. B. Gillett (syn.: *S. cinerascens* sensu auctt., et Cronquist in Fl. Congo Belge 5 : 79, 1954, p. maj. p., typo solo excepto).

Var. **levis** often confused with *S. coerulescens* in fruit, but sutures of pod of equal width in the former, and lower suture of pod wider than the upper one in *S. coerulescens.*

S. melanocaulis Bidgood & Friis – Icon.: Nord. J. Bot. 18 : 210-211, 1998.

Shrub or tree to 4 m tall with one to several little branched woody stems to ± 7 cm Ø with smooth almost completely black, purplish black or dark purplish brown bark; young stems pilose or pubescent or sometimes sparsely so, soon becoming glabrescent or glabrous.

Edges of and in clearings in montane forest; patches of evergreen bushland in farmland where the forest has been cleared; 1500-2000 m alt. – Also cultivated.

"… it would appear from the distribution of forest tree species… and the occurrence of endemic species associated with forest margins and clearings, that there has been a long history of co-existence of forest, evergreen bushland and open country" in the area concerned (Bidgood & Friis, o.c.: 212). Endemic species associated with this mosaic are, e.g., *Cirsium dender, Dombeya kefaensis, Guizotia arborescens.*

Very frequently around houses, at home-gardens, in hedges; it is a good example of local domestication of an endemic taxon (the most well known case being the domestication of *Coffea arabica)*; other examples are: *Millettia ferruginea, Erythrina brucei.*

Near *S. sesban.*

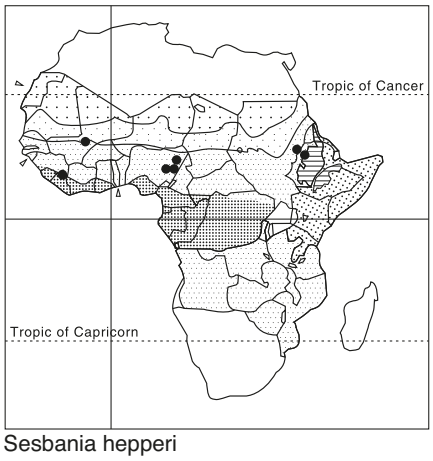
S. microphylla Harms ex E. Phillips & Hutch.

Erect annual slightly woody herb 1-2,5 m tall, glabrous except for the rather woolly margin of the calyx and few caducous hairs on the very young stems and leaves; rarely with a few scattered prickles.

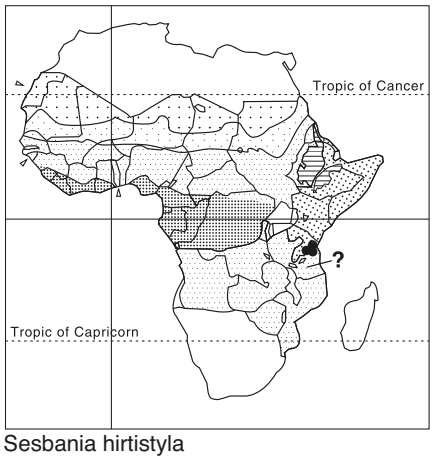
Swampy areas often in water; hollows; river banks; black alluvial clays; lake-side sands; 600-1400 m alt.

A great deal of variation (flower colour and size, shape of fruit) especially in the basin of the upper Zambezi (new material collected in ± 1968-1988 does not greatly clarify the taxonomy of this species). Collecting and field studies needed.

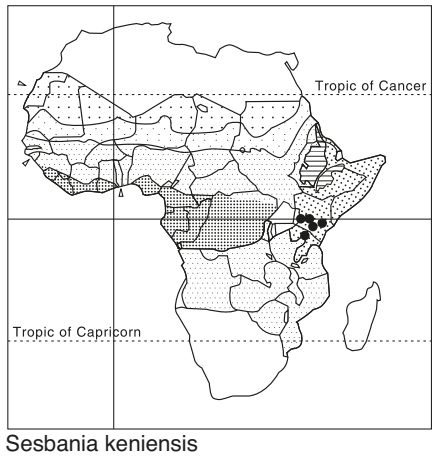
Namibia, Botswana, Caprivi Strip.



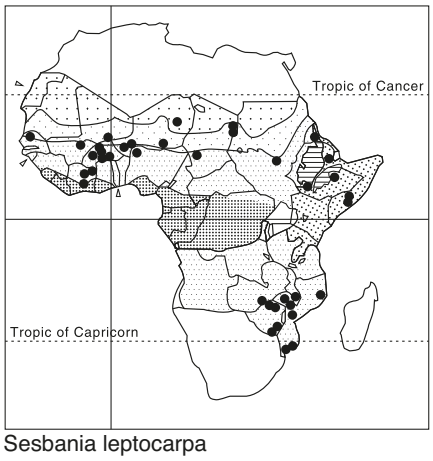
Sesbania hepperi



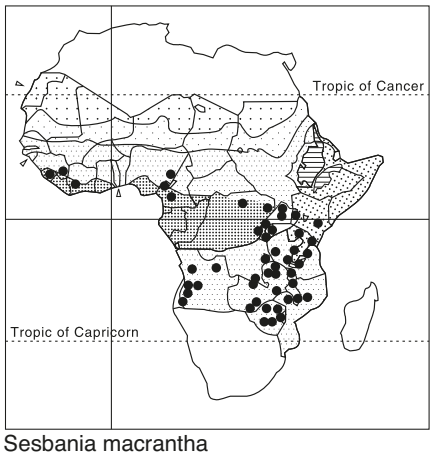
Sesbania hirtistyla



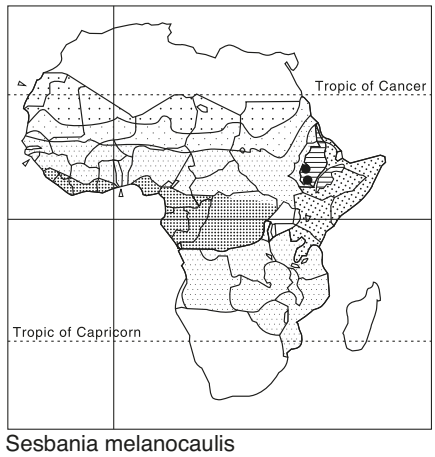
Sesbania keniensis



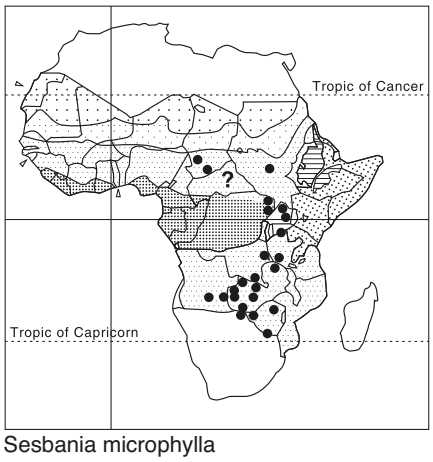
Sesbania leptocarpa



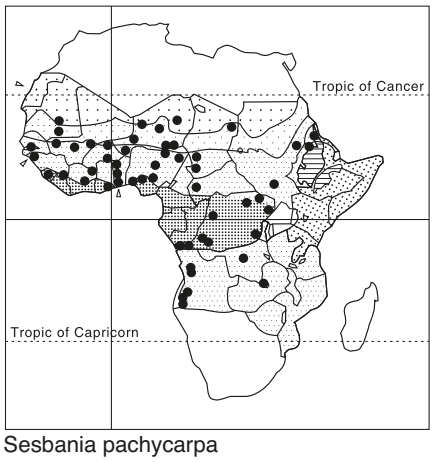
Sesbania macrantha



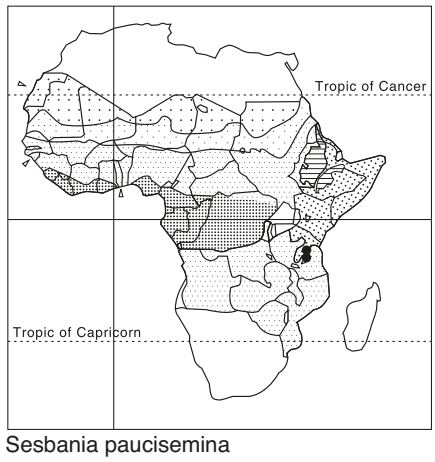
Sesbania melanocaulis



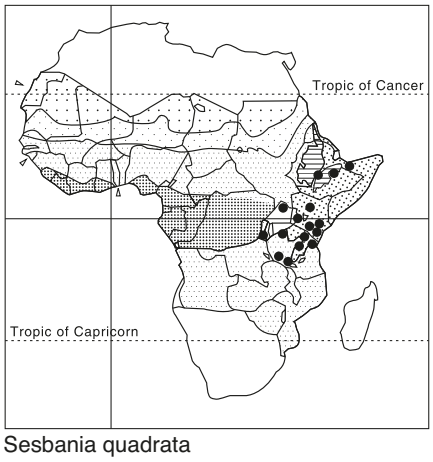
Sesbania microphylla



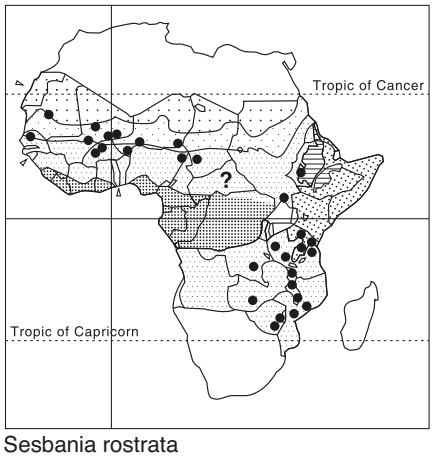
Sesbania pachycarpa



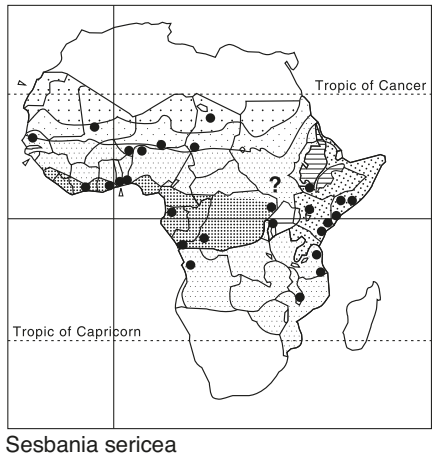
Sesbania paucisemina



Sesbania quadrata



Sesbania rostrata



Sesbania sericea

S. dalzielii and *S. wildemanii* seem to be very close (perhaps to be better treated as subspecies of *S. microphylla ;* fide G. P. Lewis in Fl. Zambes.). In S part of range overlapping with *S. leptocarpa* var. *minimiflora.*

S. pachycarpa DC. emend. Guill. & Perr.; H. Merlier, Adventices tropicales, 4 pp. + 1 sheet B 801-803, Acta Publications Paris, 1987.

syn.: *S. sinuo-carinata* Ali

Erect semi-woody annual or biennal herb 1-2,5 m tall, glabrous throughout except for a few scattered hairs on the very young leaves, woolly hairs on the margin of the calyx and the pubescent tip of the style ; stems sometimes sparsely aculeate.

Temporary swamps ; *Sorghum* and *Arachis* fields ; river-sides ; humid places ; sandy-clayey hollows ; roadsides ; deep soil on plateau ; damp sandy thickets ; ?near sea-level to 1200 m alt.

Cape Verde Islands ; Namibia.

Comprises 2 subspp.: – subsp. **pachycarpa ;** – subsp. **dinterana** J. B. Gillett

S. paucisemina J. B. Gillett

Erect annual herb to 1-1,5 m tall ; stems almost glabrous, sometimes sparsely aculeate ; branches lax spreading ; stems and branches dull maroon tinged.

Deciduous open woodland, usually, but not always, on alluvial flats ; black cotton soil ; sand and clay admixed, probably saline with *Boscia, Cordia, Acacia, Grewia, Salvadora ;* reddish sandy soil, rocky outcrops with *Acacia, Adansonia, Sterculia, Commiphora, Combretum, Caesalpinia* (rather atypical habitat for a *Sesbania)*; 780-1130 m alt.

[S. punicea (Cav.) Benth.]

bas.: *Piscidia punicea* Cav.

syn.: *Daubentonia punicea* (Cav.) DC.

Shrub or small tree 1-4(-5) m tall ; young stems glaucous green to dark brown, often longitudinally ribbed ; older stems with greyish black cracked bark ; flowers red, decorative ; leaves, flowers and seeds very poisonous to livestock.

Native to S. America, grown as an ornamental ; escaped from gardens in tropical Africa, also reported as a weed of aquatic areas (Fl. Zambes.).

S. quadrata J. B. Gillett

Erect annual softly woody herb, 1-3 m (base of main stem 2 cm Ø) tall, the lateral branches not again branched ; stems glabrous.

Alluvium in water course ; riverine forest ; locally abundant or in rare colonies ; waterhole ; black heavy soil ; seasonally swampy plains ; grassy plains with scattered *Acacia spirocarpa* which are very dry for most of the year but swampy for short periods in the rains ; etc ; 200-1600 m alt.

S. rostrata Bremek. & Oberm.

syn.: *S. hirticalyx* Cronquist

Erect robust softly woody annual or biennial herb 1-3 m tall, not aculeate ; stems pithy, to 15 mm thick, sparsely pilose at first, later glabrescent with vertical rows of pustules above the leaf-axils which produce curious warty outgrowths on older stems.

Marshes ; edges of shallow ponds ; apparently always local and nowhere abundant ; flood-plains ; muddy river-banks ; lightly

wooded (mopane) grassland ; growing in up to 1 m of water, mud or thin peat overlying clay ; rice-fields ; dunes near River Niger in Mali ; clayey pool margins ; 500 (and probably less) – 2400 m alt.

Botswana ; Namibia (Okavango area ; not Caprivi Strip) ; Madagascar.

S. sericea (Willd.) Link – Neotype : Ferguson in Thwaites C.P. 3850, Sri Lanka.

bas.: *Coronilla sericea* Willd.

syn.: *Aeschynomene pubescens* Vahl ex DC., nom. in syn.; *Emerus pubescens* (DC.) Schumach. & Thonn.

Annual or biennial erect much branched, slightly woody herb to subshrub 1-3 m tall ; stem 2,5 cm Ø, pubescent throughout except for the flower and fruit, silky when young ; angles of stems often with minute prickles which are smaller than those of species usually described as aculeate and often hidden among the hairs.

Marshy ground ; old rice-fields ; swampy meadows ; pool ; lagoon sides ; sands ; moist places ; temporarily flooded areas ; river banks ; lakes ; with *Typha ;* 0-850 m alt.

São Tomé ; S Arabia ; Seychelles ; Sri Lanka (introduced) ; West Indies, northern S. America (possibly introduced).

This plant certainly owes part of its wide distribution to man ; it seems probable that *S. sericea* is native only in Africa (fide J. B. Gillett, 1963).

S. sesban (L.) Merrill

bas.: *Aeschynomene sesban* L.

syn.: *Sesbania aegyptiaca* Poir. (“ *Sesban aegyptiacus* “).

Shrub or short-lived tree, copiously branched, 1-8 m tall, with a trunk to 12 cm Ø ; stems sometimes tinged pinkish or bluish, laxly to densely spreading pubescent, sometimes glabrescent or, less often, almost totally glabrous.

Swampy land by riverine forest ; sandy lake shores and river banks ; sometimes away from water ; 30-2200 m alt.

Caprivi Strip, Namibia, Botswana, S. Africa, Swaziland ; Yemen.

Comprises 2 subspp.: – subsp. **punctata** (DC.) J. B. Gillett (Senegal – Sudan) ; – subsp. **sesban,** with 3 or ? 4 vars.: – var. **sesban** and var. **bicolor** (Wight & Arn.) F. W. Andr. with weak separating characters between them ; – var. **zambesiaca** J. B. Gillett, perhaps a synonym of var. **nubica** Chiov. [syn.: *S. leptocarpa* DC. var. *confaloniana* Chiov.; *S. confaloniana* (Chiov.) Chiov].

Sometimes cultivated. Subsp. **sesban** var. **sesban** is probably native in some parts of Indonesia ; also cultivated elsewhere in the tropics ; subsp. **sesban** var. **bicolor** is probably native as well as cultivated in India ; also cultivated in other tropical regions.

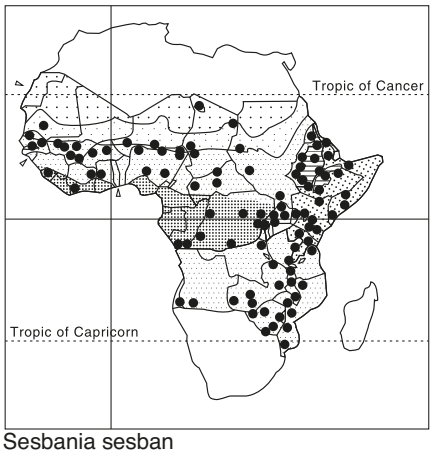
Flowers usually needed for correct identification, as fruiting specimens with long narrow pods can be difficult to separate from *S. cinerascens.*

S. somalensis J. B. Gillett

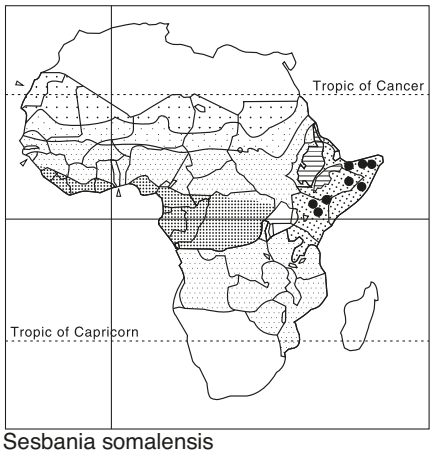
Erect branching semi-woody herb 0,5-1,5 m tall, the stems almost glabrous, usually aculeate.

Rocky water course with ± perennial water ; *Acacia spirocarpa* woodland ; red soils ; sun-baked mud at edge of dry pan in *Acacia-Commiphora* open scrub ; ± 300-1020 m alt.

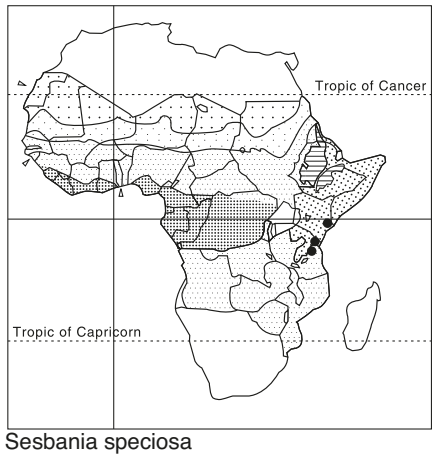
Confused with *S. bispinosa.*



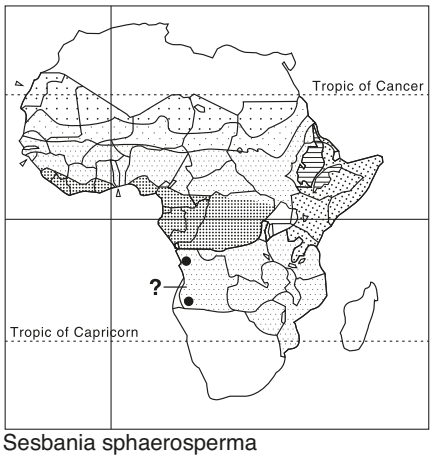
Sesbania sesban



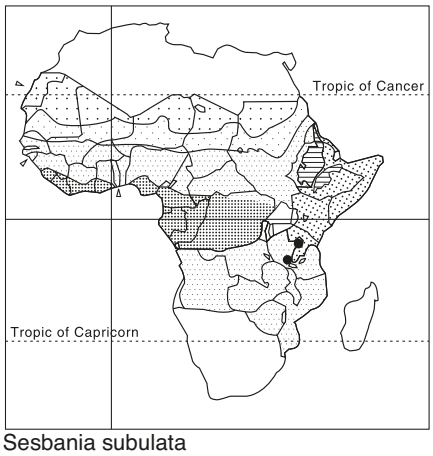
Sesbania somalensis



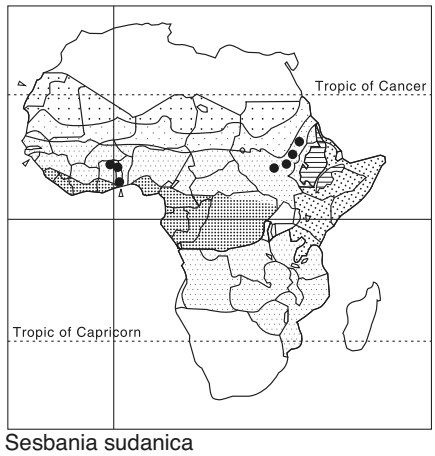
Sesbania speciosa



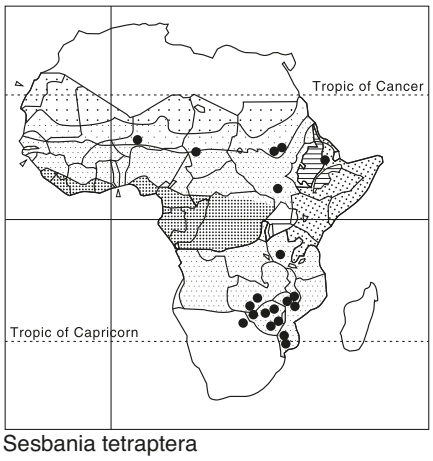
Sesbania sphaerosperma



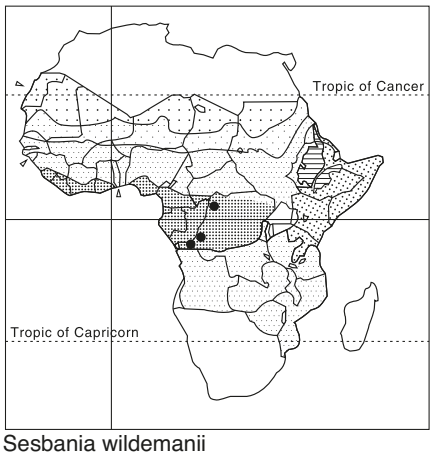
Sesbania subulata



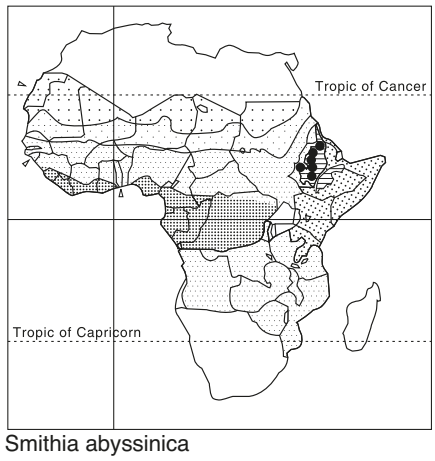
Sesbania sudanica



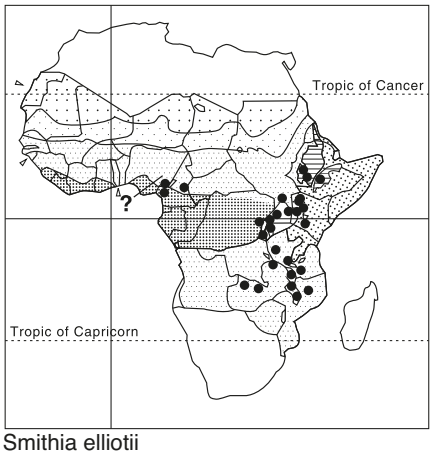
Sesbania tetraptera



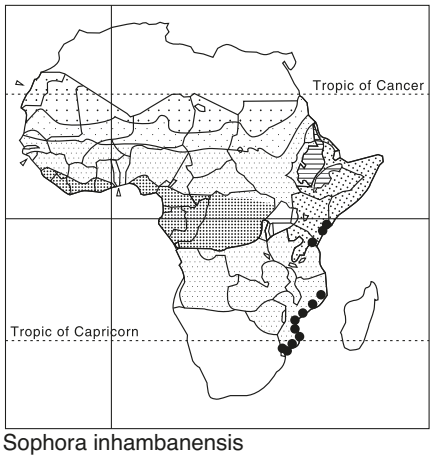
Sesbania wildemanii



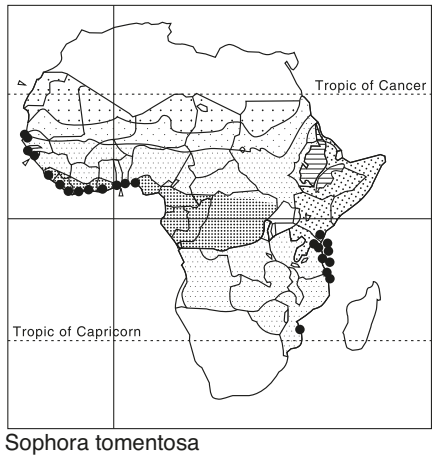
Smithia abyssinica



Smithia elliotii



Sophora inhambanensis



Sophora tomentosa

SESBANIA

S. speciosa Taub.

syn.: *S. pubescens* DC. var. *grandiflora* Vatke ; *S. hildebrandtii* Taub. ex Engl., nom.

Erect bushy herb 1-3 m tall, not aculeate, sparsely or densely coarsely pubescent throughout, except for the flower, silky when young.

Swamps, ditches, river-banks ; <100 m (normally).

Considerable variation in flower size.

Cultivated as a green manure in S India.

Very local and seems to be decreasing ; not collected native since 1934.

S. sphaerosperma Welw.

syn.: *S. sphaerocarpa* Hiern ; *S. pterocarpa* Welw. ex Romariz, nom. subnud. ; *Emerus sphaerospermus* (Welw.) O. Kuntze

Slender undershrub or shrub ; stems not uncommonly woody at the base and persisting for years, 1-2 m tall, patently branched ; stem branches sparingly muricate.

Frequent in dry hilly situations ; moist bushy areas ; places flooded in the rainy season ; damp thickets at river ; 160 m alt.

Namibia (750-1200 m alt.).

S. subalata J. B. Gillett

Erect herb, to 3 m tall, laxly branched ; stems glabrous, tinged maroon or slightly purplish-grey, sometimes sparsely aculeate near the leaf-bases ; pod thick at the sutures, less at the centre, thus appearing almost winged, to 23 cm long, 2,5-3 mm wide.

Sandy river banks ; edges of cultivation in mixed dry scrub or in, red sandy soil near stream, water slightly saline ; 1050-1230 m alt.

S. sudanica J. B. Gillett

Erect herb sometimes subwoody, 1-5 m tall ; stem glabrous.

Acacia-tall grass open forest zone ; grassland ; moist depressions with *Oryza* in broad-leaved deciduous woodland ; low lying clay soil near river ; swampy places ; roadside gutter ; savanna and savanna forest.

Comprises 2 subspp.

Near *S. hepperi.*

Disjunct W-E area.

S. tetraptera Hochst. ex Bak.

syn.: *S. kirkii* E. Phillips & Hutch. ; *S. hamata* E. Phillips & Hutch.

Erect annual or biennial herb, 1-4 m tall ; stems sparsely pilose when young, glabrous later, sometimes aculeate ; pod 8-23 cm long with the sutures expanded into 4 wings each 4-6 mm wide, the wings darker.

Temporarily flooded grassland ; clayey black hollow with drying crack ; clayey-sandy or sandy places ; riverside pans ; dry limestone ; mixed and *Colophospermum* woodland ; 90-1600 m alt.

S. Africa, Botswana.

Comprises 2 subspp.: – subsp. **tetraptera ;** – subsp. **rogersii** (E. Phillips & Hutch.) G. P. Lewis (bas.: *S. rogersii* E. Phillips & Hutch.), occurring in SW part of range and at higher altitudes, only overlapping in S Malawi.

Occasionally cultivated.

SESBANIA TETRAPTERA

J. B. Gillett writes (1963) that *S. rogersii* "is closely related to *S. tetraptera,* but seems sufficiently distinct"; and he underlines "the extraordinary distribution in a series of well-separated localites on a North-South axis"; it would seam highly likely that this species has been distributed by birds on migration.

With *S. rogersii* treated as a subsp. of *S. tetraptera* the species is now known also in S Chad and S Niger ; the area of the species becoming more sudano-zambezian with a gap.

S. wildemanii E. Phillips & Hutch. ("wildemannii").

Annual herb to 1,5 m tall (or more ?) ; stems striate, puberulous in the upper part.

Probably in marshy places.

Very close to *S. microphylla.*

SYNONYMS :

Sesbania aegyptiaca Poir. = **Sesbania sesban**

arabica Hochst. ex E. Phillips & Hutch. p.p. = **S. hepperi, S. leptocarpa**

arabica Hochst. ex Steud., nom. nud. = **S. leptocarpa**

aculeata (Willd.) Pers. = **S. bispinosa**

var. *micrantha* Chiov. = **S. bispinosa**

cinerascens sensu Cronquist 1954 = **S. macrantha** var. **levis**

confaloniana (Chiov.) Chiov. = **S. sesban** subsp. **sesban** var. **nubica**

dalzielli sensu Hepper 1958 p.p. = **S. sudanica** subsp. **occidentalis**

dummeri E. Phillips & Hutch. syntype Dummer 225 = **S. macrantha**

filiformis Guill. & Perr. = **S. leptocarpa**

goetzei Harms var. *glabra* Chiov. = **S. keniensis**

hamata E. Phillips & Hutch. = **S. tetraptera**

hildebrandtii Taub. ex Engl. = **S. speciosa**

hirticalyx Cronquist = **S. rostrata**

hockii De Wild. = **S. coerulescens**

kapangensis Cronquist = **S. cinerascens**

kirkii E. Phillips & Hutch. = **S. tetraptera**

leptocarpa sensu Cronquist 1954 (pl. congol.) = **S. microphylla**

leptocarpa sensu Hepper 1958 p.p. = **S. sudanica** subsp. **occidentalis**

leptocarpa DC. var. *confaloniana* Chiov. = **S. sesban** subsp. **sesban** var. **nubica**

mossambicensis Klotzsch = **S. leptocarpa**

subsp. *minimiflora* J. B. Gillett = **S. leptocarpa** var. **minimiflora**

pachycarpa sensu auctt. = **S. pachycarpa, S. rostrata**

pterocarpa Welw. ex Romariz = **S. sphaerosperma**

pubescens DC. = **S. sericea**

var. *grandiflora* Vatke = **S. speciosa**

punctata DC. = **S. sesban** subsp. **punctata**

punctata auctt. = **S. sesban** subsp. **sesban** var. **nubica**

rogersii E. Phillips & Hutch. = **S. tetraptera** subsp.

sinuo-carinata Ali = **S. pachycarpa**

sphaerocarpa Hiern = **S. sphaerosperma**

SMITHIA / *2*

A genus of c. 30 species, mainly in Asia and Madagascar (Verdcourt in *Kew Bull.* 24 : 15-17, 1970 ; in *Kirkia* 9 : 445-447, 1974 ; Fl. Zambes. 3(6) : 138-140, 2000).

Pod folded like a concertina, included in the persistent accrescent calyx, articulate, breaking transversely into 1-seeded indehiscent segments ; stipules spurred.

Smithia abyssinica (A. Rich.) Verdc.

syn.: *S. sensitiva* sensu Bak. in Fl. Trop. Afr. 2 : 152, 1871, non Ait.; *S. erubescens* sensu auctt., e.g. Dewit & Duvign. in Fl. Congo Belge 5 : 345, 1954, non (E. Mey.) Bak. f.; Enum. 2 : 116, 1992.

Erect glabrous annual herb 30-70 cm tall ; flowers yellow in condensed umbellate inflorescences with persistent spurred bracts.

Swampy grassland, small swamp in low bush in valley on black clay, waste ground, roadsides ; 1800-2450 m alt.

Very close to S. *sensitiva* Ait. (S & SE Asia to Australia ; introduced in Madagascar, S. Africa).

S. elliotii Bak. f. – Icon.: Du Puy & al., Legum. Madag.: 657, 2002.

syn.: *S. rosea* R. Vig.

Decumbent perennial herb with decumbent stems 0,4-1,8 m long, bristly to glabrescent, forming adventitious roots ; flowers purplish, blue or pink in subumbellate inflorescences with caducous bracts, not spurred.

Swampy ground, swamps, streamsides, ditches, moist dambos, edge of rain-forest and swamp forest ; mostly in coarse grass and dense herbage ; near waterfalls ; seepage meadow on edge between upland rain-forest with *Albizia, Macaranga, Croton, Protea* and grassland with *Loudetia arundinacea* (Sudan, Imatong Mts) ; 1170-2700 m alt. (var. **elliotii)**. – Grassland, rocky slopes and outcrops ; 1600-2200 m (var. **sparse-strigosa** Verdc.).

Variable in indumentum of calyx (densely covered with long yellow bristly hairs in var. **elliotii ;** with sparse short not bristly tubercle-based hairs in var. **sparse-strigosa** from Zaire-Burundi-Uganda-SW Ethiopia).

Madagascar (var. **elliotii)**.

Comprises 2 vars.

Smithia erubescens (E. Mey.) Bak. f. in NE S. Africa, Swaziland.

SYNONYMS :

Smithia aeschynomenoides Welw. ex Bak. = **Kotschya**
africana (Endl.) Taub. = **K. africana** var. **africana**
bequaertii De Wild. = **K. africana** var. **bequaertii**
bernieri Baill. = **Aeschynomene uniflora**
bingilensis Pellegr., nom. = **Kotschya ochreata**
burttii Bak. f. = **K. capitulifera** var. **capitulifera**
capitulifera Bak. = **K. capitulifera**
carsonii Bak. = **K. carsonii**
chamaecrista Benth., incl. var. *genuina* R. Vig. and var. *stipulata* R. Vig. = **K. africana** var. **bequaertii**
congesta Bak. = **K. recurvifolia** subsp. **recurvifolia**
drepanophylla Bak. = **K. recurvifolia** subsp. **recurvifolia**

elaphroxylon (Guill. & Perr.) Baill. = **Aeschynomene**
erubescens sensu Fl. Congo Belge = **Smithia elliotii** var. **sparse-strigosa**
eurycalyx Harms = **Kotschya**
eylesii nom. in sched. = **K. speciosa**
goetzei Harms = **K. goetzei**
grandidieri Baill. = **Aeschynomene elaphroxylon**
harmsiana De Wild. = **Kotschya carsonii** subsp. **carsonii**
kotschyi Benth. = **K. africana** var. **africana**
lutea Portères = **K. lutea**
megalophylla Harms = **Humularia welwitschii** var. **lundaensis**
micrantha Harms = **Kotschya micrantha**
mildbraedii Harms = **Kotschya aeschynomenoides**
nodulosa Bak. = **Aeschynomene**
ochreata Taub. = **Kotschya**
oubanguiensis Tisser. = **K. oubanguiensis**
platyphylla Brenan = **K. platyphylla**
princeana Harms = **K. princeana**
prittwitzii Harms = **K. prittwitzii**
recurvifolia Taub. = **K. recurvifolia**
reflexa Portères = **K. carsonii** subsp.
ringoetii De Wild. = **K. africana** var. **ringoetii**
riparia R. E. Fries = **K. africana** var. **bequaertii**
rosea R. Viguier = **Smithia elliotii** var. **elliotii**
rubrofarinacea Taub. = **Aeschynomene**
ruwenzoriensis Bak. f. = **Kotschya aeschynomenoides**
scaberrima Taub. = **K. scaberrima**
schweinfurthii Taub. = **K. schweinfurthii**
setosissima Harms = **K. carsonii** subsp. **carsonii**
speciosa Hutch. = **K. speciosa**
sphaerocephala Bak. = **K. aeschynomenoides**
stolonifera Brenan = **K. stolonifera**
strigosa Benth. = **K. strigosa**
var. *vanderystii* Bak. f. = **K. stolonifera**
strobilantha Welw. ex Bak. = **K. strobilantha**
thymodora Bak. f. = **K. thymodora**
trochainii Berhaut = **Aeschynomene crassicaulis**
uguenensis Taub. = **Kotschya uguenensis**
uniflora A. Chev. = **K. uniflora**
volkensii Taub. = **K. aeschynomenoides**
welwitschii Taub. = **Humularia**

SOPHORA / *3*

A cosmopolitan genus of c. 50 species in warm regions. A few are cultivated as street trees or garden ornamentals in tropical Africa.

HEATH, P. V. (1994). Commentary on the proposal to conserve Sophora Linné. *Calyx* 4 (4) : 134.

Sophora inhambanensis Klotzsch – African Pagoda Tree.

syn.: *S. nitens* Benth. ex Harv. 1862, non Schumach. & Thonn. 1827, nom. illegit.

Evergreen shrub 1-2 m tall ; all parts (silvery or) golden pubes-

cent ; foliage yellow-green ; leaflets cuneate at base ; flowers yellow ; pod 1-3-seeded, narrowed between the seeds.

Sandy foreshores, sand dunes ; on the inland margin of the coastal plain with high dune cordons (Maputaland's Licuati forest and thicket, in Veld & Flora 89 : 56-61, 2003) ; near sealevel.

S. Africa (Natal) ; W Madagascar.

S. tomentosa L.

Evergreen shrub 1-3 m tall ; foliage silvery-grey puberulous to tomentose ; leaflets rounded at both ends ; flowers yellow ; pod 4-8-seeded, narrowed between the seeds. The seeds are able to float for a long time ; sea-dispersed.

Sandy foreshores just above high water mark, often as a pioneer colonist (sand-binder) ; mangrove (subsp. **occidentalis)** ; near sealevel.

Madagascar, Seychelles, Comoros, Sri Lanka to China, Polynesia ; E Australia (subsp. **tomentosa).** – S. Tomé ; E S. America, Caribbean (subsp. **occidentalis)**.

Comprises 2 subspp.: – subsp. **tomentosa** [syn.: *Sorindeia gondotii* Briq. p.p., lecto excl.] in E Africa (and Asia-Australia) having leaflet undersurface with dense matted indumentum ; subsp. **occidentalis** (L.) Brummitt in W Africa (and S. America, West Indies), with leaflets tomentellous, glabrescent below. – G. P. Yakovlev (Jakovlev) in Trudy Leningradskogo Chimiko-farmacevticeskogo Instituta 21, Voprosy farmakognozii 4 : 53-55, 1967, divides the species into 5 subspp., viz. – subsp. *tomentosa* (syn.: *S. heptaphylla* Blanco) ; – subsp. *australis* Yakovl. (type from Queensland) ; – subsp. *occidentalis* [syn.: *S. crassifolia* J. St.-Hil.; *S. littoralis* Schrad.; *S. arenicola* Nees ; *S. nitens* Schumach. & Thonn.; *Zanthyrsis paniculata* Raf.] with fa. *longifolia* Yakovl. (type from Florida) ; – subsp. *havenensis* (Jacq.) Yakovl. (in C. America), incl. *S. tomentosa* fa. *polyphylla* (Urb.) Yakovl. [syn.: *S. polyphylla* Urb.], *S. tomentosa* fa. *aurea* Yokovl. (type from Florida ; – subsp. *longiflora* Yakovl. (type from W. Indies, St. Thomas).

Disjunct distribution in Africa.

S. velutina Lindl. subsp. **zimbabweensis** J. B. Gillett & Brummitt

Shrub c. 2,5 m tall, much-branched from the base ; leaflets densely-appressed pubescent beneath ; flowers creamy white ; only young pod known ?

Woodland on a hillside on rather stony red soil, in association with *Podranea, Capparis tomentosa, Catha edulis, Combretum* spp., *Acacia nilotica, Brachystegia spiciformis, Dichrostachys cinerea, Vernonia cistifolia, Leonotis nepetifolia, Rhynchosia resinosa, Plumbago zeylanica, Clematis brachiata.*

Subsp. **velutina** (syn.: *S. glauca* Lesch. ex DC., non Salisb.; *Edwardsia madraspatana* Wight ; *Sophora bakeri* C. B. Clarke ex Prain ; *Indigofera mairei* Léveillé ; *Sophora cavaleriei* Léveillé) with a disjunct distribution : W and E-C India, Nepal ? to SW China, Indonesia (Soemba, Timor), very different from subsp. **zimbabweensis.**

Native or introduced ? Known from only 2 isolated populations near Zimbabwe ruins. This area "stands some 150 m higher than the surrounding parts of the Fort Victoria district, and consequently has a higher rainfall (102-112 cm mean per annum) as well as fairly frequent winter mists" (Brummitt & Gillett in Kirkia 5 : 263, 1966).

SYNONYMS:

Sophora aurea Ait. = **Calpurnia**

bakeri C. B. Clarke ex Prain = **Sophora velutina** subsp. **velutina**

cavaleriei Léveillé = **S. velutina** subsp. **velutina**

nitens Harv. = **S. inhambanensis**

nitens Schumach. & Thonn. = **S. tomentosa** subsp. **occidentalis**

occidentalis L. = **S. tomentosa** subsp.

oligophylla = **Angylocalyx**

somalensis Chiov. = **Millettia usaramensis** subsp. **usaramensis**

sylvatica Burch. = **Calpurnia aurea** subsp.

SPATHIONEMA / *1*

Spathionema kilimandscharicum Taub.

syn.: *Vigna macrantha* Harms

Climbing or scrambling subshrub 2-10 m long ; stems becoming woody, at first pubescent, later glabrescent ; leaves often fasciculated on short branchlets, often appearing after flowering and fruiting ; leaflets 3, ovate, 1-5,5 cm long ; flowers large, scented, greenish-cream to mauve to purple.

Very mixed deciduous bushland with *Acacia, Terminalia orbicularis, Commiphora, Sesamothamnus,* etc.; also *Acacia* semi-desert grassland ; rocky places ; 250-1470 m alt.

May occur in Somalia and adjoining parts of Ethiopia, but not yet recorded there.

SPHENOSTYLIS / *6*

Sphenostylis briartii (De Wild.) Bak. f.

bas.: *Vigna briartii* De Wild.

syn.: *V. matengoana* Harms ; *V. homblei* De Wild.; *Sphenostylis wildemaniana* Bak. f.

Perennial trailing or climbing herb to 1 m long from a slender rootstock ; stems slender, branched, glabrous or sparsely puberulous.

Brachystegia woodland, grassland ; moist ground ; swampy riversides ; open vegetation on rocky sandy soil ; grassland with scattered trees ; 450-1965 m alt.

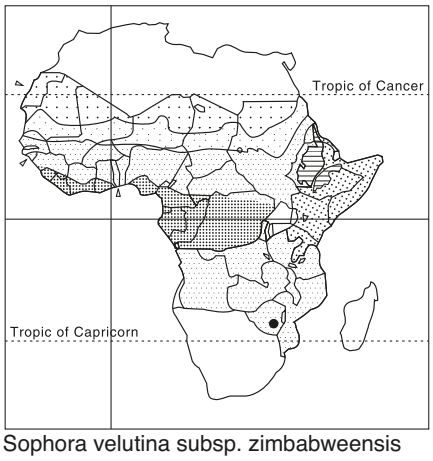
S. erecta (Bak. f.) Hutch. ex Bak. f. – Icon.: Econ. Bot. 46 : 267, 1992.

bas.: *Dolichos erectus* Bak. f. 1894, non De Wild. 1913.

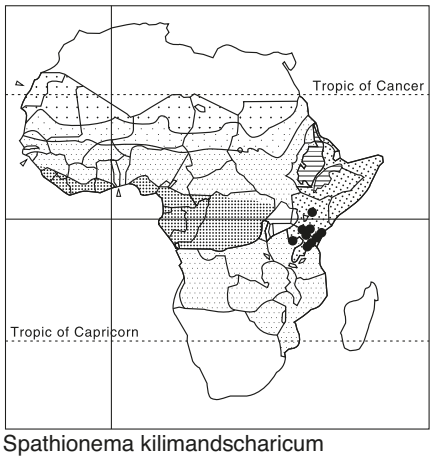
syn.: *Sphenostylis homblei* De Wild.; *S. ringoetii* De Wild. (both of subsp. **erecta)**.

Perennial climbing, prostrate or erect subshrub or herb 0,15-6 m long or tall from a woody rootstock to 22 × 0,9 cm, producing a red exudate ; stems glabrous or puberulous or pubescent when young, often flowering when entirely leafless ; flowers yellow inside, flushed maroon outside. Sometimes forming carpets.

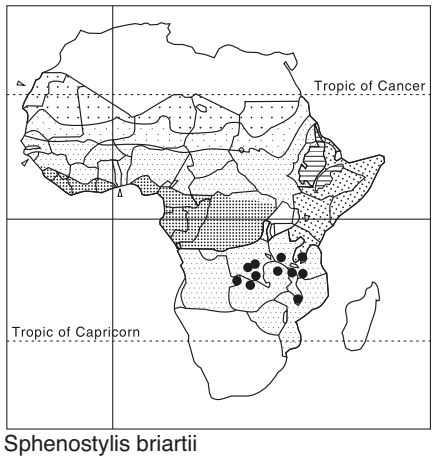
Usually appearing after fire ; miombo and chipya woodlands with grassy areas ; mixed deciduous woodland ; *Acacia* woodland ; woodland margins ; open bushland ; riverine vegetation ; on furrow edges ; rocky hillsides of sandstone and granite ; *Acacia campylacantha* woodland with *Hyparrhenia* grassland patches ;



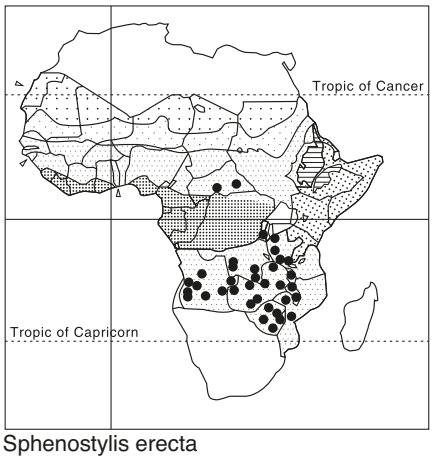
Sophora velutina subsp. zimbabweensis



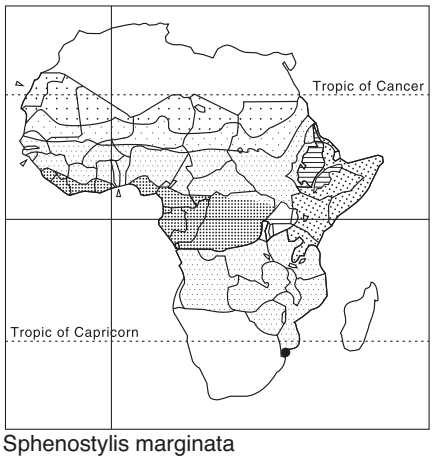
Spathionema kilimandscharicum



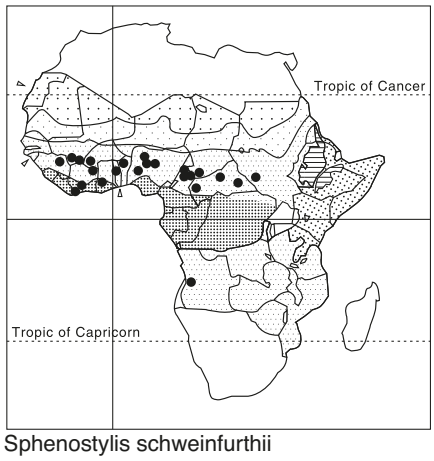
Sphenostylis briartii



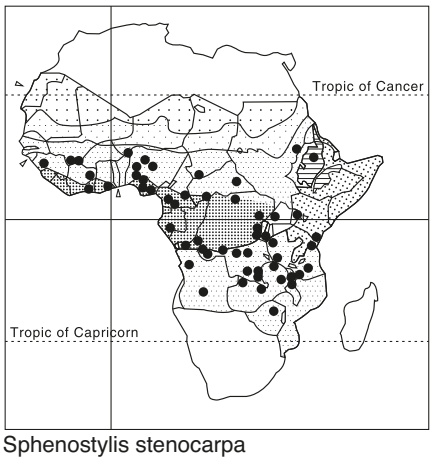
Sphenostylis erecta



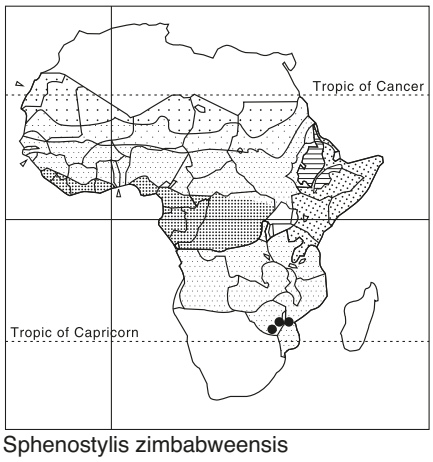
Sphenostylis marginata



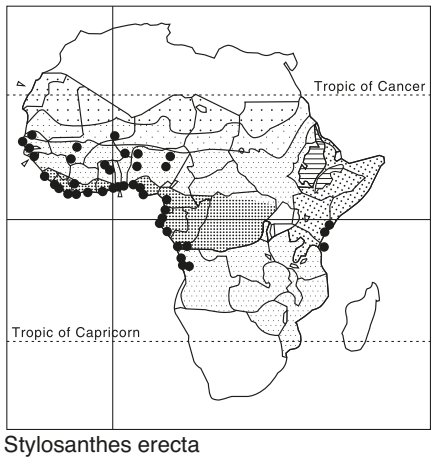
Sphenostylis schweinfurthii



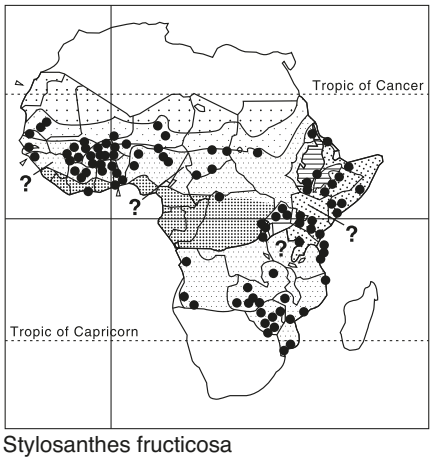
Sphenostylis stenocarpa



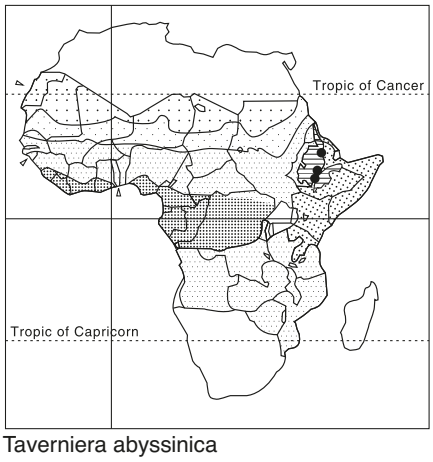
Sphenostylis zimbabweensis



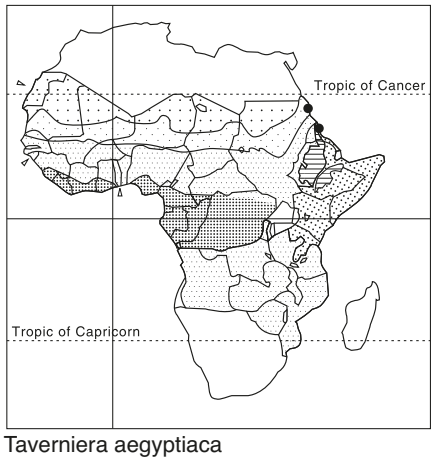
Stylosanthes erecta



Stylosanthes fructicosa



Taverniera abyssinica



Taverniera aegyptiaca

roadsides ; *Eucalyptus* plantations ; savanna with *Andropogon* on metamorphic schist ; thicket ; grassland ; *Brachystegia* woodland ; 330-1800 m alt.

Comprises 2 subspp.: – subsp. **erecta** [syn.: *S. marginata* subsp. *erecta* (Bak. f.) Verdc.]; – subsp. **obtusifolia** (Harms) Potter & Doyle [bas.: *S. obtusifolia* Harms ; syn.: *S. gossweileri* Bak. f.; *S. marginata* sensu Wilczek, Fl. Congo Belge 6 : 278, 1954, non E. Mey.; *S. marginata* E. Mey. subsp. *obtusifolia* (Harms) Verdc. sensu stricto].

S. marginata E. Mey. – Icon.: Verdoorn, Fl. Pl. Africa 39 : tab. 1521, 1968.

Trailing or semiscandent suffrutescent herb 0,6-1,5 m long or tall from a woody rootstock ; stems ± glabrous, or young parts densely pubescent.

Rocky hillside ; sandy soil ; 500 m alt.

S. Africa.

S. schweinfurthii Harms – Icon.: Econ. Bot. 46 : 265, 1992.

Erect undershrub 0,9-1,5 m tall ; stems simple, the younger ones armed with almost prickly hairs above, long-pilose below, the adult stems almost glabrous ; flowers large, yellow.

Open savanna ; high terrace (perhaps along river bed) ; hollows, to 1700 m alt.

Comprises 2 subspp. (disjunct area).

S. stenocarpa (Hochst. ex A. Rich.) Harms, incl. var. *latifoliolata* (De Wild.) De Wild. – Icon.: Econ. Bot. 46 : 268, 1992.

bas.: *Dolichos stenocarpus* Hochst. ex A. Rich.

syn.: *Vigna ornata* Welw. ex Bak. incl. var. *latifoliolata* De Wild.; *V. katangensis* De Wild. 1902 ; *Sphenostylis katangensis* (De Wild.) Harms ; *S. congensis* A. Chev. – Icon.: Bull. Soc. Natl. Acclimat. France 60 : 423, fig. 2, 1913 ; *S. ornata* A. Chev., nom.

Perennial prostrate or climbing herb, 1-3 m long, from a tuberous rootstock ; stems often reddish, glabrous or sparsely puberulous, woody near the base ; flowers large (4 cm long), mauve-pink or purple.

Brachystegia woodland ; riparian and lakeshore bushland ; grassland ; roadsides ; often on rocky places and on termite mounds ; high terrace (perhaps along river bed) ; wooded savanna and open forest on sandy soil temporarily humid ; crack on hardpan ; old clearings ; also a weed ; 10-2000 m alt.

Wild and often cultivated (map : Econ. Bot. 46 : 271, 1992).

S. zimbabweensis Mithen

syn.: *S. marginata* subsp. *obtusifolia* p.p. sensu Verdcourt, Kew Bull. 24 : 293, 1970 ; *S. marginata* subsp. 1 of Drummond, Kirkia 8 : 227, 1972.

Climbing or procumbent herb to ± 1 m long, from a woody rootstock ; stems ± glabrous ; flowers large, purple.

Grassland ; grassland with scattered trees ; woodland margins ; 1200-1700 m alt.

SYNONYMS :

Sphenostylis calantha Harms = **Nesphostylis holosericea**

congensis A. Chev. = **Sphenostylis stenocarpa**

gossweileri Bak. f. = **S. erecta** subsp. **obtusifolia**

holosericea (Welw. ex Baker) Harms, incl. var. *hastifolia* (Baker) Bak. f. = **Nesphostylis holosericea**

homblei De Wild. = **Sphenostylis erecta** subsp. **erecta**

katangensis (De Wild.) Harms = **S. stenocarpa**

kerstingii Harms = **Nesphostylis holosericea**

marginata E. Mey.

subsp. *1* of Drummond = **Sphenostylis zimbabweensis**

subsp. *erecta* (Baker. f.) Verdc. = **S. erecta** subsp. **erecta**

subsp. *obtusifolia* (Harms) Verdc. = **S. erecta** subsp. **obtusifolia**

subsp. *obtusifolia* sensu Verdcourt = **S. zimbabweensis**

marginata sensu Wilczek = **S. erecta** subsp. **obtusifolia**

obtusifolia Harms = **S. erecta** subsp.

ornata A. Chev. = **S. stenocarpa**

ringoetii De Wild. = **S. erecta** subsp. **erecta**

wildemaniana Bak. f. = **S. briartii**

(STIZOLOBIUM) – See **MUCUNA**

STYLOSANTHES / *2*

A mainly S. American genus ; species poorly defined.

MA, Z. Y. & al. (2004). Molecular evidence that Stylosanthes angustifolia is the third putative diploid progenitor of the hexaploid S. erecta (Fabaceae). *Pl. Syst. Evol.* 248 :171-176.

VANDER STAPPEN, J. & al. (2002). Phylogenetic analysis of Stylosanthes (Fabaceae) based on the internal transcribed spacer region (ITS) of nuclear ribosomal DNA. *Pl. Syst. Evol.* 234 : 27-51.

Stylosanthes erecta P. Beauv., incl. var. *acuminata* Welw. ex Bak. in Oliv. and var. *guineensis* (Schumach. & Thonn.) T. Vogel – Icon.: D. J. Du Puy & al., Legum. Madag.: 664, 2002.

syn.: *S. guineensis* Schumach. & Thonn.; *Ononis coriifolia* Reichenb.

Woody perennial herb or subshrub, completely prostrate and forming mats, or more often erect 0,1-1,5 m tall or long ; stems much branched, glabrescent or with pubescence in a narrow longitudinal line alternating in position from internode to internode ; flowers dull yellow or orange marked orange-red, keel white or yellow ; articles of pod glabrous.

Sandy places, foreshore strand just above loose sand-dunes ; coastal meadows and marshes ; also roadsides ; sea-level.

Variable in shape of inflorescence, normally dense but elongated in W Africa ; and in pubescence of pod (sometimes pubescent in W Africa).

Madagascar.

An unnamed variant from E Africa grading with **S. fruticosa** is cited by Verdcourt l.c.

Fodder plant (cattle, horses) ; has also been grown in Zaire.

It seems that the species was once widespread and only small pockets are left in E Africa which are being reduced and blurred by hybridization with **S. fruticosa** (fide Verdcourt in Fl. Trop. E. Afr. Legum. 3, Papil. 1: 437, 1971).

Introduced in Centr. Afr. Rep. (Bambari).

STYLOSANTHES

S. fruticosa (Retz.) Alston – Icon.: Du Puy & al., l.c.

bas.: *Arachis fruticosa* Retz.

syn.: Enum. 2 : 117, 1992 ; *Stylosanthes suborbiculata* Chiov.; *S. erecta* var. *guineensis* sensu Hiern in Pl. Welw. 1: 238, 1896 p.p. quoad spec. Welw. 2125.

Woody perennial herb, mostly erect but sometimes prostrate, 0,1-1 m tall usually with a thick woody rootstock, but sometimes only a short-lived perennial ; stems silky-hairy ; flowers cream-white to orange marked red, wings and keel yellow or orange yellow, in dense inflorescences ; pod 1-2-jointed, densely pubescent.

Grassland, wooded grassland, *Colophospermum* and *Acacia* woodlands and miombo, *Themeda-Bulbine* savanna (Zaire, to 1700 m) bushland, scrub, sometimes river banks mostly on sandy soil, and often on rocky ground ; rocky grassland, forest edges ; wooded moist meadows, usually by ant-hills and sandy pastures among shrubs (Angola) ; old cultivations ; scree ; 0-2720 m alt. (1200-1900 m in Ethiopia, 0-1050 m in Somalia).

S. Africa, Namibia, Botswana, Swaziland ; Madagascar ; Arabia ; India, Sri Lanka.

S. suborbiculata described from S Somalia is a coastal dune form probably best treated as a subspecies, fide Thulin, Fl. Somal. 1: 427, 1993. It does not seem to be identical with the unnamed variant of **S. erecta** cited by Verdcourt.

Closely related to **S. erecta** (See note above).

Not yet reported from Malawi but expected there.

[S. guianensis (Aubl.) Sw.]

bas.: *Trifolium guianense* Aubl. (“guyanense” in illustration captions).

A perennial herb or subshrub 0,6-1,8 m tall, erect or spreading, coarsely hairy, with adventitious shoots from a woody rootstock ; stems pubescent in a vertical band ; flowers yellow ; pods 1-jointed glabrous or pubescent.

Extensively cultivated as a pasture legume and introduced into W Africa, Uganda (specimens sometimes named *S. erecta)*, E and SE Africa ; found as a weed on roadsides, in grassland, rice paddy banks, *Brachystegia* woodland.

Native of C America, from Mexico to N Argentina.

Not mapped.

[S. humilis Kunth]

Prostrate annual herb.

Native of Brazil.

Introduced into W Africa. Not mapped.

SWARTZIA

See **BOBGUNNIA** *(Caesalpiniaceae)*

TAVERNIERA / *8*

A genus of 15 species distributed from the Red Sea area, NE tropical Africa and Socotra to India.

This account is based on M. Thulin’s revision in Symb. Bot. Upsal. 15(1) : 43-95, 1985.

CHOI, B.-H. & H. OHASHI (2003). Genetic criteria and an infrageneric system for Hedysarum and related genera (Papilionoideae-Leguminosae). *Taxon* 52 : 567-576 [See p. 575].

Taverniera abyssinica A. Rich.

syn.: *Onobrychis simplicifolia* R. Br., nom. nud.

Shrub or shrublet to 2 m tall ; young stems brownish, finely sulcate, rather densely appressed pubescent ; old stems glabrescent with cracking bark ; leaves 1-foliolate ; flowers dark pink-purplish red, in 2-8-flowered racemes ; pod 1-3-segmented, pubescent and with short spines.

Bushland in rocky places, also on limestone ; 1675-2300 m alt.

ADDIS, G. (2003). Treatments promoting germination of Taverniera abyssinica A. Rich. seeds. *Seed Sci. & Technol.* 31: 579-586.

Closely related to *T. schimperi* (growing at lower alt.), and has been confused with it.

One of the 10 most often sold medicinal plants in Ethiopia.

T. aegyptiaca Boiss.

Subshrub or shrub, finely white-strigose, 0,4-1 m tall ; stems much-branched, greenish or pale brown, finely sulcate when young, later glabrescent ; leaves 1-foliolate, 3-10x3-10 mm ; racemes of 1-5 pink or purple flowers ; pod 2-5-segmented, pubescent and with spines (sometimes unarmed).

Sandy, often seasonally flooded saline ground ; 0-100 m alt.

Egypt, Sinai, Saudi Arabia (along the Red Sea).

Not in N Somalia (= *T. cuneifolia)*.

T. cuneifolia (Roth) Arn.

bas.: *Hedysarum cuneifolium* Roth

syn.: *Onobrychis cuneifolia* (Roth) DC.; *Hedysarum gibsonii* Graham ; *Taverniera glabra* Boiss.; *T. ephedroidea* Jaub. & Spach ; *T. stocksii* Boiss.; *T. nummularia* sensu auctt. p.p., e.g. Jafri, Fl. Karachi : 173, fig.170, 1966, non DC.

Shrublet with glabrous to sparsely pubescent stems 30-75 cm tall, with long internodes ; leaves 1-foliolate (occasionally 2-3-foliolate) ; racemes with 1-2(-10-20) pink or pale purple flowers ; pod 1-4-segmented, ± pubescent and with curved spines.

Along wadis on gravelly or rocky ground ; 130-240 m alt.

The disjunct Somali population seems to be an extreme form of the species, with few flowers per raceme and with larger pod-segments. Further studies needed.

Arabia, from the Persian Gulf area to Iran, India.

Similar to *T. aegyptiaca* in habit. Confusion seems to have been made.

T. lappacea (Forssk.) DC. – Icon.: L. Boulos, Fl. Egypt 1: 339, 1999.

bas.: *Hedysarum lappaceum* Forssk.

Small shrub or woody herb to 1 m tall, densely woolly pubescent throughout ; leaves 3-foliolate, small ; flowers small, yellowish, pink or purple in small racemes ; pod (1-)2(-3)-segmented, sessile, pubescent, spiny.

Coastal plains, semidesert, on sandy or gravelly, often seasonally flooded saline ground.

Along the coasts of the Red Sea and the Gulf of Aden ; SE Egypt ; Arabia ; Pakistan.

TAVERNIERA

T. longisetosa Thulin

Shrublet with densely appressed white pubescent stems when young, 30-90 cm tall, with short internodes; old stems with dark grey fissured bark; leaves 1-foliolate; racemes short with 2-4 pink flowers; pod 1-2 segmented, densely pubescent and with long (4-5 mm) spines.

Rocky limestone gully with *Acacia ankokib, Boswellia* spp., etc.; on gravelly or rocky ground; 20-450 m alt.

Related to *T. multinoda*.

T. multinoda Thulin

Shrub or shrublet with dark grey to greenish, finely sulcate and appressed white-pubescent stems when young, 0,5-1,8 m tall; old stems with whitish-brown fissured bark; internodes short; leaves 1- or 3-foliolate; racemes short with 1-6 flowers, pink, pinkish brown or yellowish flushed pink; pod 1-3-segmented, densely hairy and with small spines.

Along wadis, on gravelly or rocky ground, rocky slopes, usually on limestone; near sea-level- 600 m alt.

The most variable species in the genus: in number and pubescence of leaflets, in size of spines on the pod, in size of flowers. Occurrence of ± distinct local or regional races.

S Yemen, Oman.

Closly related to *T. sericophylla* Balf. f. (Socotra), *T. longisetosa.*

T. oligantha (Franch.) Thulin

Shrub, with pale brown, sulcate, sparsely appressed pubescent stems when young; old stems with brownish fissured and somewhat flaking bark; internodes rather long; leaves 1-foliolate; racemes short with 1-2 flowers; pod 2-segmented, pubescent, not spiny.

Only known from Djibouti; first collected in 1885-1886 (type gathering); second collection in 1986-87 (J.-P. Lebrun & al., Catalogue pl. vasc. Djibouti: 121, 1989); J. Andru & al., Pl. vasc. Djibouti, Fl. ill. 2: 389, 1994).

Steppe, on basalt mound; near the coast.

T. schimperi Jaub. & Spach, excl. var. *oligantha* Franch. (= *T. oligantha)*.

syn.: *T. floribunda* Schweinf.

Shrub or shrublet with pale brown, sulcate, sparsely appressed pubescent stems when young, to 2 m tall; leaves 1-(and 3-) foliolate; racemes 3-10-flowered; pod 1-3-segmented, finely pubescent and with short spines.

Deciduous bushland and woodland, on gravelly ground; c. 1000-1300 m alt. (in the Blue Nile Gorge).

In habit very similar to *T. glauca* Edgew. From S Yemen.

Not in Eritrea.

SYNONYMS:

Taverniera ephedroidea Jaub. & Spach = **Taverniera cuneifolia**

floribunda Schweinf. = **T. schimperi**

glabra Boiss. = **T. cuneifolia**

nummularia auctt., non DC. = **T. cuneifolia**

schimperi Jaub. & Spach var. *oligantha* Franch. = **T. oligantha**

stefaninii Chiov. = **T. lappacea**

stocksii Boiss. = **T. cuneifolia**

TEPHROSIA / *129*

"The genus Tephrosia is taxonomically a very difficult one,…" (Brummitt, 1968).

A large genus of about 300 species in the tropics and warm temperate regions.

In our area the pod is unknown in 8 species (= 6 %) and the mature pod in further 8 species (= 6 %; together 16 species = 12 %). No seeds have been seen in 3 species, and only immature seeds known in further 3 species (together = 6 species). Ten species (= > 7 %) are known only from the type gathering, and further 2 species only from 2 collections each. *T. hochstetteri* has not been collected since 1906.

Tephrosia acaciifolia Welw. ex Bak. – Icon.: Fl. Zambes. 3/3: 161, 2007.

syn.: *Cracca acaciifolia* (Welw. ex Bak.) O. Kuntze; *Tephrosia salicifolia* Schinz; *T. melanocalyx* Welw. ex Bak. in Oliver, Fl. Trop. Afr. 2: 106, 1871, non Bak. in Kew Bull. 1897: 258, 1897 (= *T. paniculata).*

Erect annual or short-lived perennial herb 0,6-1(-1,3) m tall with a taproot; stems simple to much branched with white or fulvous hairs, appressed or spreading; leaves unifoliolate.

Grassgrown ground at source of river; open short thicket-grown pasturage; sandy margins of forest; *Julbernardia, Combretum* wooded grassland; woodland, open ground; often at roadsides; rich grassy, somewhat sandy and stony meadows, along the border of forests in the neighbourhood of *Proteaceae* (Angola); 500-1500 m alt.

Varies in type of life form and habit (plants annual and much branched in lower and upper part in N part of range; perennial with numerous stems, simple or sparsely branched from a woody stock in SW and S part of range).

Needs further investigation.

Caprivi Strip, Namibia, S. Africa.

Near *T. lyallii* Bak. from Madagascar.

T. aequilata Bak., incl. var. *meyeri-johannis* (Taub.) Brummitt

syn.: *T. nyasae* Bak. f.; *T. zombensis* Bak.

Branching shrub 0,4-5 m tall, or rarely a tree; hairs on the stems white or fulvous, of two kinds -a: short and dense, -b: sparser, weak, spreading, to 3 mm long.

Wooded savannas; grassland; heathland; scrub; forest edges; descending into miombo woodland along streams; rocky grassland; *Philippia-Vaccinium-Hypericum-Halleria* zone; mountain slopes; 1000-2500 m alt.

S. Africa.

Widespread and fairly uniform on higher ground from southern Uganda, S Kenya, Tanzania and the eastern Congo to the extreme north of Zambia; restricted to the higher mountain masses further south, it shows considerable differentiation and comprises 6 subspp. (map: Bol. Soc. Brot., Sér. 2, 41: 354, 1968), however not retained in Fl. Zambes. 3/3: 187-189, 2007.

T. andongensis Welw. ex Bak.

syn.: *Cracca andongensis* (Welw. ex Bak.) O. Kuntze

Erect undershrub 0,6-0,9 m tall with ascending terete firm branches densely clothed with short spreading grey down; mature pod unknown.

Sandy thickets on bank of river.

Only known from the type collected in 1857.

T. anomala Thulin

Shrub; young stems ribbed, densely pubescent with short spreading white hairs; old stems glabrous, dark brown, lenticellate; fruit unknown.

Red, stony soil on hill with *Calliandra gilbertii;* ±300 m alt.

The slender, terete style with a recurved tip, and with long spreading hairs all around seems to be unique among the African species; perhaps a similarity is possible with American species; *Calliandra gilbertii* and *Bourreria lyciacea* from SW Somalia have close relatives in the neotropics.

T. anomala is known from an area rich in endemics, e.g., *Indigofera ancistrocarpa, I. ammophila.*

Only known from the type collected in 1986.

T. argyrolampra Harms; Neotype: Peter 38511.

Woody herb with erect stems, densely appressed light-brown pubescent, ± sericeous; leaflets densely appressed silvery hairy beneath, 3-5 to 10 cm long x 4 cm wide; pod unknown.

Grassland?; 1260-1400 m alt.

Closely related to *T. dasyphylla, T. muenzneri.*

T. argyrotricha Harms, incl. var. *burttii* (Bak. f.) J. B. Gillett; Gillett, Kew Bull. 13: 120, 1958.

syn.: *Cracca argyrotricha* (Harms) O. Kuntze; *Tephrosia burttii* Bak. f.

Annual or short-lived perennial herb 45-150 cm tall; stems erect, branched, densely appressed silvery hairy.

Brachystegia, miombo woodland; cultivated land; 800-1200 m alt.

Not in Zambia (specimen Richards 12591 is *T. decora)*.

T. athiensis Bak. f.

Perennial herb with short often decumbent shoots from a woody base; stems appressed silvery hairy.

Rocky grassland; 1600-2800 m alt.

Confused with *T. lurida* but near *T. noctiflora.*

T. aurantiaca Harms 1900, incl. subsp. *rufopilosa* J. Dewit, nom. illegit.; but excl. subsp. *hirsutostyla* J. Dewit (= *T. hockii* subsp. *hirsutostyla)*, subsp. *verdickii* (De Wild.) J. Dewit (= *T. verdickii)* and var. *brevifolia* J. Dewit (= *T. hockii)* and fa. *albescens* J. Dewit (= *T. hockii)*; Gillett, Kew Bull. 13: 115-117, 1958; non *T. aurantiaca* R.G.N. Young 1932, nom. illegit. (= *T. elongata* var. *lasiocaulos)*.

Erect perennial suffrutex, probably with annual erect stems from a woody rootstock; stems branched to bushy, densely rusty tomentose; mature pod unknown.

Grassland; miombo woodland; 1500-1800 m alt.

Not in Zaire.

T. berhautiana Lescot

Annual, erect herb, sometimes woody at the base 0,2-1,25 m tall; branches slender, slightly angular, with appressed scattered, white hairs; leaves unifoliolate.

Very open wooded savanna on ferruginous fine gravels; lateritic plateau; 110 m alt. – With *Burkea africana, Erythrophleum africanum, Hymenocardia acida* etc. and several *Lepidagathis: anobrya, heudelotiana, collina;* also in savannas with *Hyparrhenia, Schizachyrium* on beige soils well drained, nearly without fine gravels; hollow on sandstone.

T. bracteolata Guill. & Perr.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 331, 1968.

syn.: *T. fasciculata* Hook. f.; *T. concinna* Bak.; *T. nigerica* Bak. f.; *T. elongata* Hook. f. non E. Mey.; *Cracca bracteolata* (Guill. & Perr.) O. Kuntze; *Tephrosia kotschyana* Hochst., nom.

Erect, branched, annual herb 0,5-3 m tall from a taproot; hairs on stems appressed (var. **bracteolata)** or spreading (var. **strigulosa** Brummitt) to 1 mm long, white or fulvous; branches long, straight, thinly silky.

Grassland, woodland, chiefly in seasonally swampy places; banded vegetation; sands; sometimes abundant the first year in fallows; sandy-stony places with scanty bush, on poor soil; grassy bank by lake; banks by ditches and flood plains; 540-1700 m alt.

Cape Verde Isl.

Comprises 2 vars. (intermediates occur, although mostly geographically separated).

The specimen Gossweiler 4260 from Angola is *T. rigidula* (fide Brummitt).

T. brummittii Schrire

syn.: *T. incarnata* sensu Brummitt, Bol. Soc. Brot., Sér. 2, 41: 370, 1968, p.p. quoad specim. Mossambic.

Perennial spreading herb to 60 cm tall; stems 1-many, prostrate to ascending, branching from near the base, glabrous or sparsely pubescent-pilose, arising from a woody rootstock; mature pod unknown.

Coastal and lowveld vegetation, open grassland, coastal dunes, stream banks; forest margins; 0-450 m alt.

S. Africa, Swaziland.

Confused with *T. macropoda* var. *macropoda* (stipules different). They occur sympatrically, and problem plants exist where the areas overlap.

(T. burchelli Burtt Davy)

Annual or short-lived perennial herb with decumbent softly whitish-hairy stems 15-45 cm long.

Occurs in Botswana, S. Africa, Namibia, in grassland and deciduous bushland, on sandy soil.

Records from the Flora Zambes. area are doubtful.

T. caerulea Bak. f. subsp. **caerulea;** Brummitt, Bol. Soc. Brot., Sér. 2, 41: 290, 1968.

Usually perennial with a vertical woody stock and herbaceous robust, rather sparingly branched, erect stems to 1,4 m tall; stems conspicuously covered with long spreading often geniculate, brown hairs 1-2,5 mm long.

Open, tall grass, *Combretum* woodland fringing mukusi mutemwa on Kalahari sands; black clay soil on lake or river banks with *Hyparrhenia, Sporobolus; Hyphaene* sp. savanna; loam soil of thorn country; drier parts of dambo; sandy places; c. 300-1280 m alt.

Botswana. – Subsp. **otaviensis** (Dinter) A. Schreiber & Brummitt (bas.: *T. otaviensis* Dinter) in Namibia and Botswana.

[T. candida DC. 1825]

syn.: *Cracca candida* (DC.) O. Kuntze; *Robinia candida* Roxb., 1832.

Shrub 1-3 m tall, much-branched, bushy with greyish- or brown-tomentose stems.

Native of NE India; cultivated in tropical countries (fertilizing crop, ornamental, fish poison).

T. capitata Verdc.

Ramose shrub 2 m tall ; stems densely grey-hirsute.

Mountain ridge ; ± 1500 m alt.

Only known from the type collected in 1965.

T. cephalantha Welw. ex Bak.; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 383, 1968.

syn.: *Cracca cephalantha* (Welw. ex Bak.) O. Kuntze

Annual (or perennial ?) herb to 80(-100) cm tall, with a taproot ; stem solitary, erect or decumbent, ± ramose, strigulose to subsilky or glabrous when old.

Open forests ; savannas ; here and there in short thickets, woodland or bush, on sandy ground ; rare ; 900-1450 m alt.

Botswana, Namibia, Caprivi Strip.

Comprises 2 vars.: – var. **cephalantha ;** – var. **decumbens** Welw. ex Bak. emend. Brummitt (syn.: *T. hypargyrea* Harms).

T. cephalophora Harms

Stems several, to 30 cm tall, erect, from a short-lived woody rootstock, densely hispid with fulvous stiffly spreading hairs to 2 mm long ; seeds unknown.

Grassland ; open bush ; 1700-1900 m alt.

T. chimanimaniana Brummitt

Subshrub 0,3-2 m tall ; young branches densely brown or grey spreading pubescent or tomentose ; pod and seeds unknown.

Quartzite crags ; rock crevice in open grassland ; wet grass ; 1310-2135 m alt.

One of the 42 species (or more) endemic to the Chimanimani Moutains (vide Kirkia 4 : 125-157, 1964).

T. chisumpae Brummitt – Icon.: Fl. Zambes. 3/3 : 203, 2007.

Subshrub ± 1,6 m tall, with numerous erect stems, very ramose at the apex, from a perennial many-headed woody rootstock.

Open grassy woods ; Kalahari sand woodland and sand-banks by permanent pools ; *Guibourtia, Ricinodendron, Brachystegia spiciformis* woodland on Kalahari sand.

T. cordata Hutch. & Burtt Davy

Softly shrubby much branched ?annual or perennial plant with ascending stems, woody below, soon glabrescent, sometimes reaching 2,5 m tall.

Ecology unknown in Mozambique.

S. Africa (Transvaal), Swaziland (forest margins and grassy places).

Recorded from Mozambique sine loc., on the basis of one specimen (Schlechter s.n., now destroyed).

T. cordatistipula J. B. Gillett

Procumbent herb ; stems reddish, sparsely appressed pilose ; stipules widely ovate, unsymmetrically cordate, 8 × 5 mm.

Granite outcrops ; 1100 m alt.

Species isolated from its nearest allies *T. cordata, T. macropoda* (E. Mey.) Harv. from S. Africa.

T. coronilloides Welw. ex Bak.; Gillett, Kew Bull. 13 : 120, 1958.

syn.: *T. longana* Harms ; *T. pallens* (Ait.) Pers. var. *angolensis* Bak. f.; *Cracca coronilloides* (Welw. ex Bak.) Hiern

Diffuse, copiously branched-distorted erect shrub with a rather woody taproot, 25-45 (-60-75) cm tall ; stems rather densely brown-pubescent.

Frequent in sandy bushy places on river banks ; Kalahari sand woodland ; 1150 m alt.

Near *T. decora.*

The specimen Welwitsch 2081 from Angola is *T. uniflora.*

T. curvata De Wild.

syn.: *T. lessertioides* Bak.; *T. wittei* Bak. f.

Perennial plant ; stems erect, branched, 0,4-1 m tall, sparsely strigulose with yellowish hairs, arising from a stout woody rootstock.

Deciduous woodland ; grassland ; on sandy or stony ground ; 750-1500 m alt.

T. dasyphylla Welw. ex Bak.; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 373-381, 1968.

Suffrutex with ± unbranched herbaceous stems, spreading or ascending, densely fulvous tomentose, to 40(-50)cm tall, from a woody rootstock.

Grassland ; deciduous, miombo woodland ; fringing forest ; forest edges ; 1000-2010 m alt.

Comprises 4 subspp.: – subsp. **dasyphylla** [syn.: *T. luembensis* De Wild.; *T. subfalcato-stipulata* De Wild.]; – subsp. **amplissima** Brummitt ; – subsp. **butayei** (De Wild. & T. Durand) Brummitt ; – subsp. **youngii** (Torre) Brummitt – Intermediates between subspp. **amplissima** and **dasyphylla** exist.

T. argyrolampra Harms is a good species, not a syn. of *T. dasyphylla.*

T. decora Bak.; Gillett, Kew Bull. 13 : 119, 1958.

syn.: *T. delicata* Bak. f.; *Cracca decora* (Bak.) Hiern

Annual or short-lived perennial herb with spreading branches (15-)30-80(-100) cm tall ; stems densely or, in their lower parts, sparsely fulvous strigulose.

Cultivations ; roadsides, etc. in deciduous woodland area ; bushy places at the margins of forests ; in the shade of ravines of hygrophyte gallery ; often on sandy soils ; 720-1800 m alt.

T. deflexa Bak.

Woody erect undershrub 0,3-0,8 m tall, ± thinly silky-pubescent ; pods strongly reflexed ; with long dense terminal inflorescence of white or pink flowers.

Humid places.

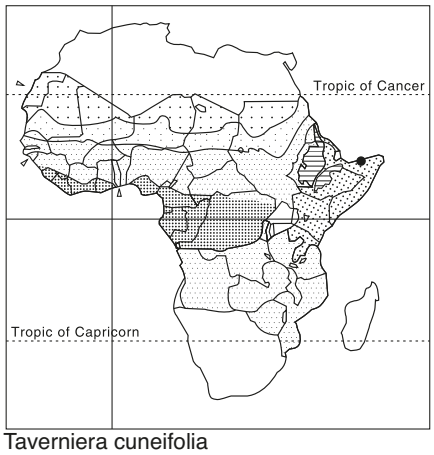
T. densiflora Hook. f.

Undershrub, erect, with grey-pubescent striate, stiff branches, ± 0,9 m tall.

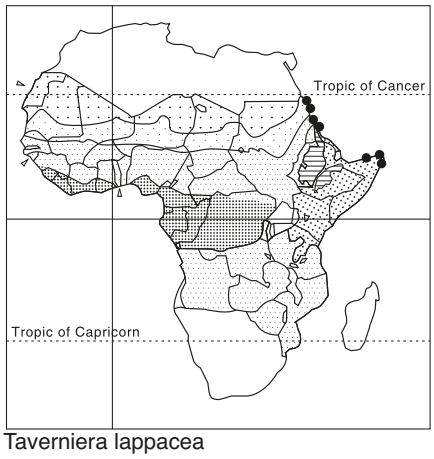
Amongst rocks by streams ; beige sand.

Also cultivated (fish-poison).

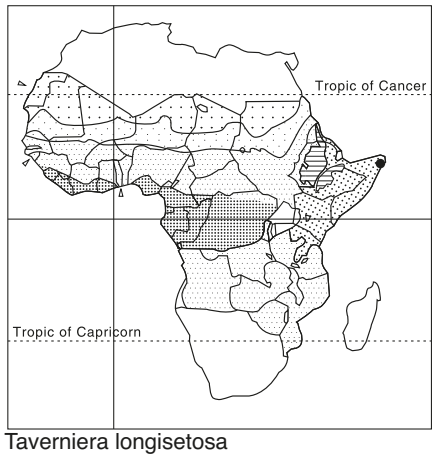
Closely related to *T. vogelii.*



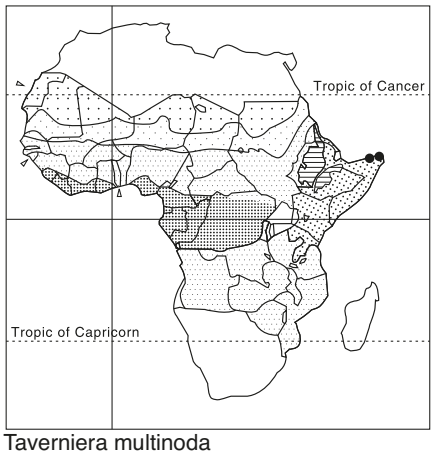
Taverniera cuneifolia



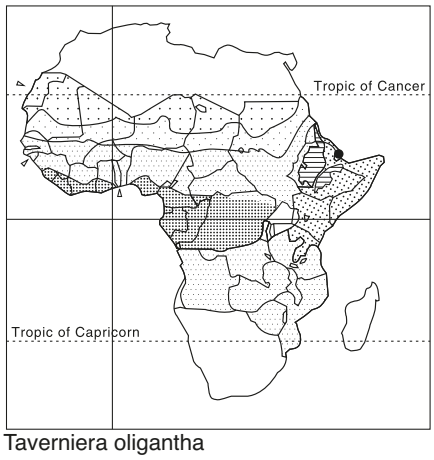
Taverniera lappacea



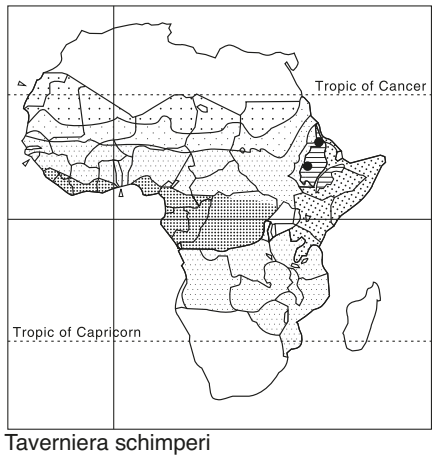
Taverniera longisetosa



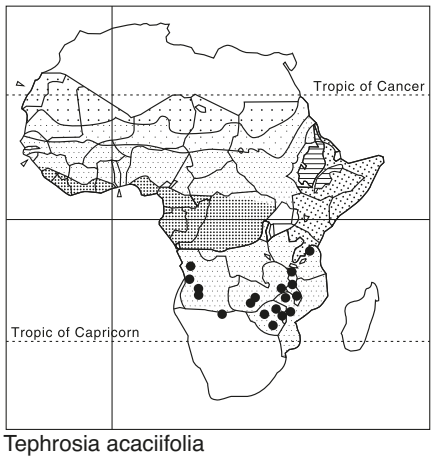
Taverniera multinoda



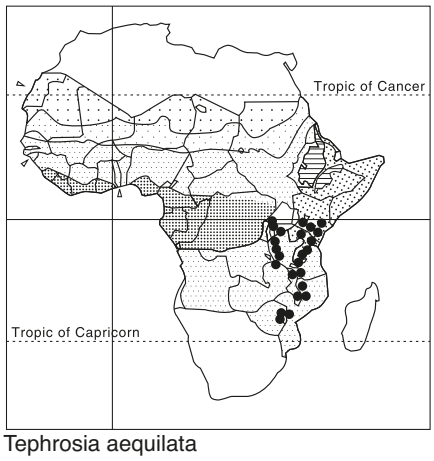
Taverniera oligantha



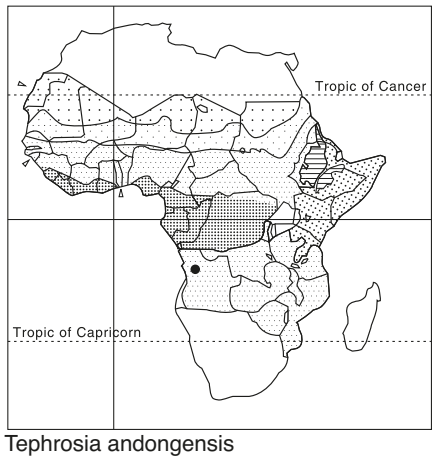
Taverniera schimperi



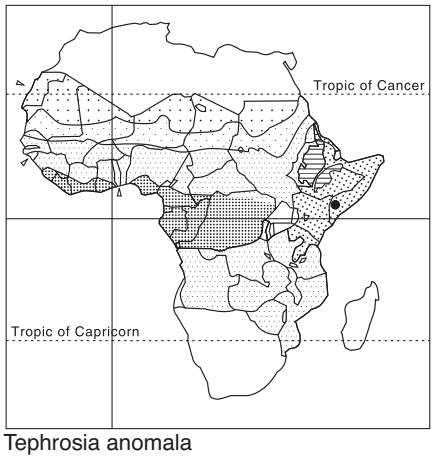
Tephrosia acaciifolia



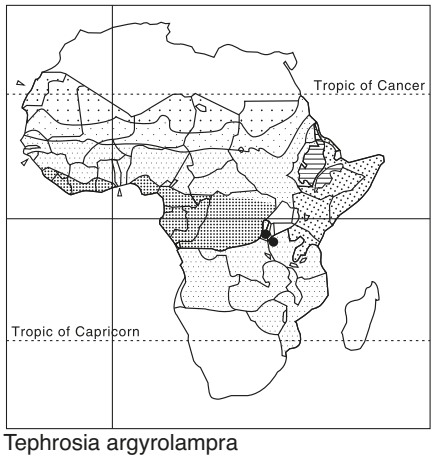
Tephrosia aequilata



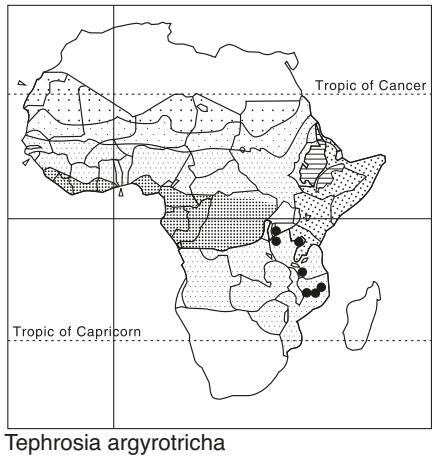
Tephrosia andongensis



Tephrosia anomala



Tephrosia argyrolampra



Tephrosia argyrotricha

T. dichroocarpa Steud. ex A. Rich. emend. Bak. f.

Shrubby perennial herb 60 cm tall, erect, copiously clothed upwards with ascending brown-silky hairs.

Rocky places; roadsides; 2250-2400 m alt.

Not in Sudan (= *T. interrupta)*.

T. disperma Welw. ex Bak.

syn.: *Cracca disperma* (Welw. ex Bak.) O. Kuntze

Diffuse prostrate annual herb with copiously branched finely grey-downy stems <30 cm long; stems slender, several in all directions.

On sand-hills along the sea-coast.

T. djalonica A. Chev. ex Hutch. & Dalziel

Prostrate herb with slender striate nearly glabrous stems.

Ecology unknown.

Only known from the type collected in 1907.

T. dregeana E. Mey.

syn.: *T. dinteri* Schinz; *T. brachyloba* E. Mey.; *Cracca dregeana* (E. Mey.) O. Kuntze; (all of var. **dregeana)**.

Suffruticose perennial plant, much branched, rigid flexuoso-erect, 10-60 cm tall; branches 4-angled, thinly appresso-puberulous, from a woody rootstock; sometimes a slender copiously branched diffuse annual herb with ascending stems 30 cm or more tall with a little fine grey pubescence (var. **capillipes)**, with a long slender taproot.

Combretum apiculatum, Terminalia pruinoides, Sclerocarya savanna on shallow sand overlying limestone; river beds; very common on grassy hills; in rather poor exposed fields; rare in dry sandy places; 800 m alt.

Namibia; S. Africa.

Comprises 2 vars.: – var. **dregeana;** – var. **capillipes** (Welw. ex Bak.) Torre [syn.: *Cracca capillipes* (Welw. ex Bak.) O. Kuntze].

T. drepanocarpa Bak.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 236, 238, 1968.

syn.: *Cracca drepanocarpa* (Bak.) Hiern

Decumbent perennial herb with long trailing hispid or pilose stems, ascending towards the apex; pod *curved,* ± 2,5 × 5 mm (can be distinguished from *T. purpurea* subsp. *leptostachya* var. *pubescens* only by the fruit); habit of a *Vicia.*

Grassland; roadsides; exposed sandy pastures, inundated; around ant hills; sometimes frequent; 1130-1800 m alt.

T. dura Bak.; Bot. Mag. 19: 241, 2002 – Icon.: o.c.: 243, 244.

syn.: *T. decorticans* Taub.

Slender, ramose shrub 0,5-3 m tall; branches virgate, cylindrical for the most part with an inconspicuous though dense indumentum of minute appressed, hyaline, simple hairs; young shoots densely appressed-hairy, older twigs and branches glabrous, with pale to medium brown, rather thin and smooth, longitudinally cracking bark; the bright red corolla may remind one, at first glance, of some *Dracula* or *Masdevallia* orchids; the surprising shape of the corolla is caused by a few modifications of the typical papilionaceous flower: flag, unusually long and narrow; the wings of similar length as the flag are spreading; the keel is only half of the wings' length.

Gravelly ground near the coast, often at mouth of tugs; 0-120 m alt.

S Yemen. – One of the first known species with a localised, disjunct distribution on both sides of the Gulf of Aden (see Bot. Jahrb. Syst. 106: 541-562, 1986).

Rarely collected since 1893, 1894.

T. elata Deflers; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 338-343, 1968.

Annual or short-lived perennial herb to 2 m tall; stems usually strongly ridged, with closely appressed hairs or with rather conspicuous, soft, spreading hairs; inflorescence axis usually spreading pubescent (subsp. **elata)**; or stems smooth, minutely and closely appressed-pubescent; inflorescence axis appressed-pubescent (subsp. **heckmanniana)**.

Comprises 2 subspp., with 2 vars. each: – subsp. **elata,** with var. **elata** [syn.: *T. rigida* Bak. 1871, non Spanoghe 1841; *T. bequaertii* De Wild.; *T. mbogaensis* De Wild.], and var. **tomentella** Brummitt, both in N part of range, and Yemen (subsp. **elata)**.

– Grassland; rocky places; dry stream beds; bushland; seasonally wet places; waste ground; footpath sides; edges of plantations; 300-2000 m alt.
– Subsp. **heckmanniana** (Harms) Brummitt, with var. **heckmanniana** [bas.: *T. heckmanniana* Harms; syn.: *T. emarginato-foliolata* De Wild.; *T. multinervis* Bak. f.] and var. **abercornensis** Brummitt in S part of range. – Deciduous, miombo woodland, mushitu fringes, fringing bushland with long grass; disturbed places; 450-1750 m alt.

Subsp. **heckmanniana** var. **abercornensis** seems to be intermediate between var. **heckmanniana** and **T. nyikensis.**

T. elegans Schumach.

syn.: *T. harmsii* Hochr., Annuaire Conserv. Jard. Bot. Genève 2: 101, 1898, syn. nov.; type: P. Beauv., G!

Erect annual or short-lived perennial shrubby herb, with a taproot, 0,3-1,5 m tall; stems ramose, densely silvery or fulvous, the hairs appressed, rather long; leaves silvery beneath and green above.

Grassland, especially on shallow soil; humid places; wooded savanna; often on sandy soil; 100-1200 m alt.

Also cultivated.

T. elongata E. Mey. 1835, non Hook. f. 1849; Brummitt, Bol. Soc. Brot., Sér.2, 41: 268, 1968.

Perennial suffrutex with a woody rootstock and herbaceous annual shoots to 0,5 m tall (rather more in Malawi); stems erect or decumbent, appressed strigulose.

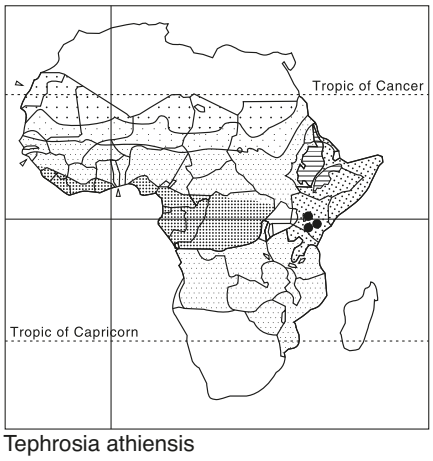
Grassland with *Pteridium* on poor bauxite soil; open woodland with *Pterocarpus, Peltophorum;* 200-2130 m alt.

S. Africa, Botswana, Swaziland.

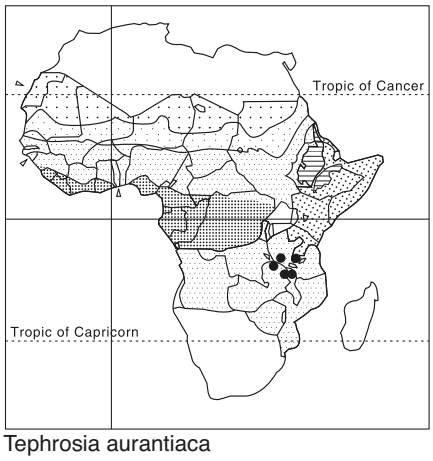
Comprises 3 vars.: – var. **elongata** [syn.: *T. elongata* E. Mey. var. *pubescens* Sond. 1850, nom. illegit., non H. M. L. Forbes 1948, nom. illegit.; *T. elongata* E. Mey. var. *glabra* Sond.; *T. sambesiaca* Taub.; *T. dissitiflora* Bak.; *T. coriacea* Benth. in sched.; *T. ensifolia* Harv. in sched.]; – var. **lasiocaulos** Brummitt [syn.: *T. aurantiaca* Young 1932, nom. illegit., non Harms 1900]; – var. **tzaneensis** (H. M. L. Forbes) Brummitt [bas.: *T. tzaneensis* J. M. L. Forbes].

Often confused with *T. longipes* or *T. lurida.*

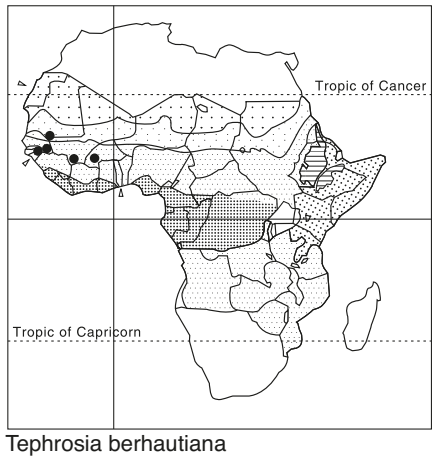
Probably also in Zambia (cf. Gillett in Fl. Trop. E. Afr., Legum., Papil.: 169, 1971).



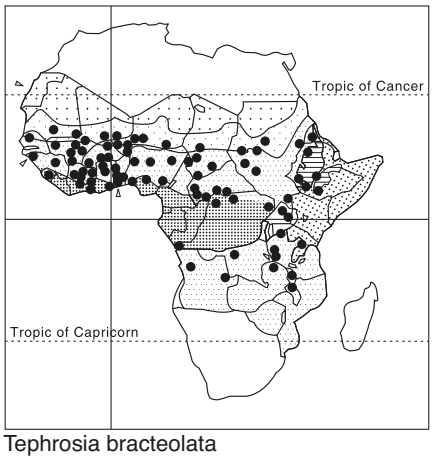
Tephrosia athiensis



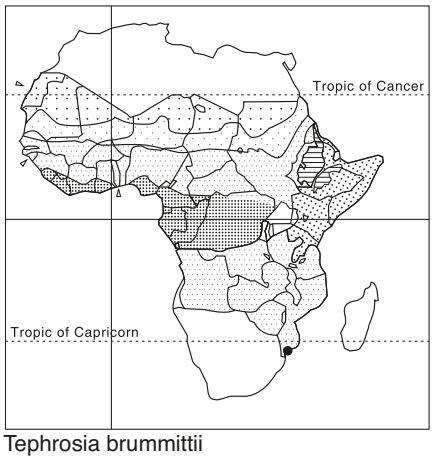
Tephrosia aurantiaca



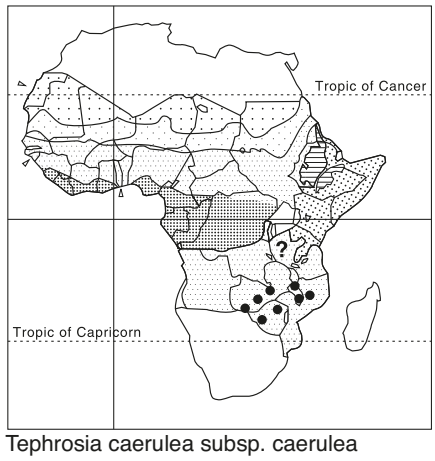
Tephrosia berhautiana



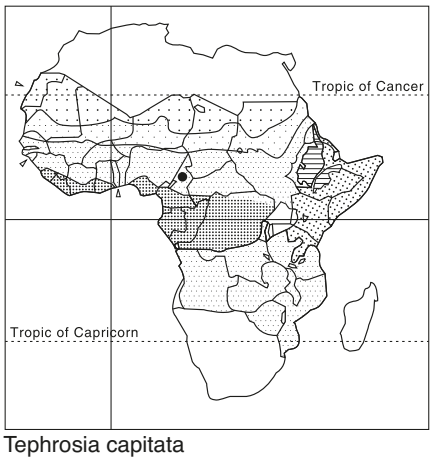
Tephrosia bracteolata



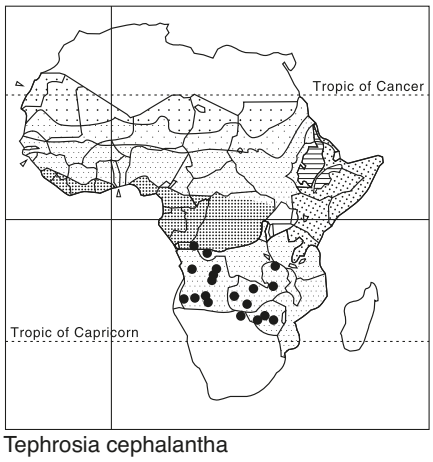
Tephrosia brummittii



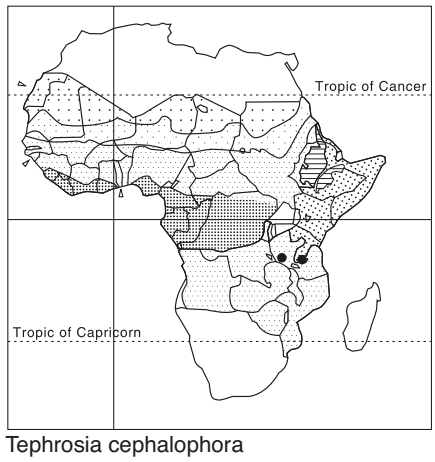
Tephrosia caerulea subsp. caerulea



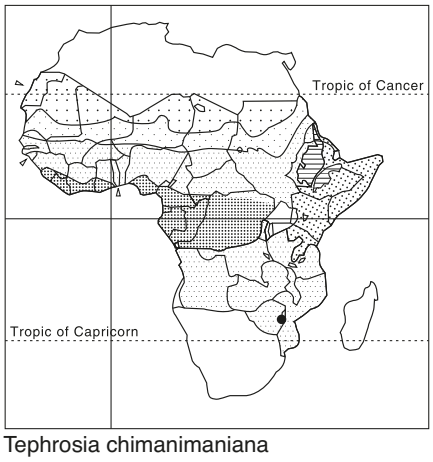
Tephrosia capitata



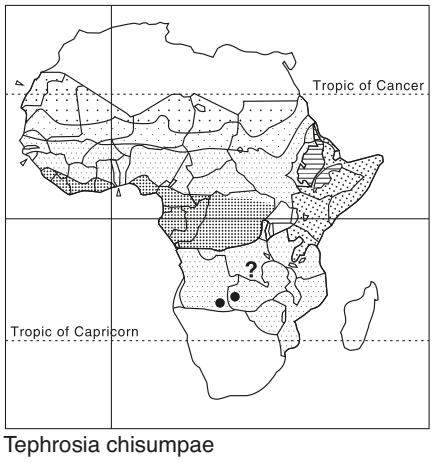
Tephrosia cephalantha



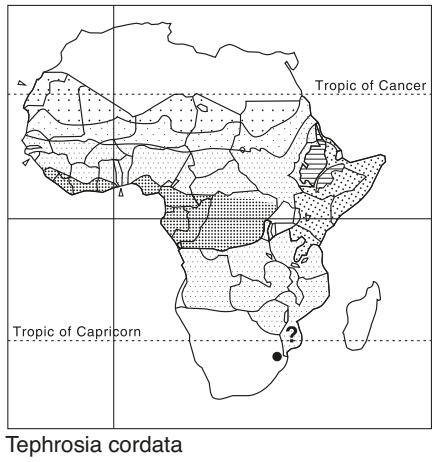
Tephrosia cephalophora



Tephrosia chimanimaniana



Tephrosia chisumpae



Tephrosia cordata

T. emeroides A. Rich.
syn.: *T. ustulata* Taub. ex Harms
Softly woody stiffly erect perennial herb 0,5-2,5 m tall ; hairs on stems appressed ± 0,3 mm long.
Evergreen bushland and thickets ; wooded grassland ; thickets ; 1200-2800 m alt.

T. euchroa I. Verdoorn
Suffrutex or short-lived perennial herb ? 25-100 cm tall, much branched, erect, or branches decumbent, forming a low bush, with a stout taproot ; branches cano-pubescent, glabrescent ; the silvery-grey colour of the bush and the pinkish-red flowers suggested the specific name.
Ecology unknown in Zimbabwe.
NE S. Africa (rocky places, low veld bush, Mopane-veld ; 450-1400 m alt.).
Near *T. noctiflora.*

T. euprepes Brummitt
Slender annual herb with a slender long taproot ; stems slighty ramose at the base, 20-50(-90) cm tall, usually with spreading, brown, scattered or dense hairs ; leaves few in number, restricted to lower part of plant.
Kalahari sand ; scrub mopane on basalt ; mopane savanna and scrub on basalt soil ; hillside ; 600-1370 m alt.
N Botswana.

T. faulknerae Brummitt
Ramose, annual or biennial (perhaps perennial) herb or bush ± 1,5 m tall ; young stems with dense, grey or brown, ascending or appressed hairs.
Abundant in woods by roadsides ; woodland ; plantations.
Near *T. reptans.*

T. festina Brummitt
Shrub to 5 m tall ; young branches shortly grey- or brown-tomentose.
Road kopje in montane grassland, on granite substrate ; 1525-1830 m alt.
Near *T. grandibracteata.*

T. filiflora Chiov.
Prostrate or ascending perennial to ± 20 cm long, densely pubescent.
Dunes near the coast ; to ± 100 m alt.
Variable ; closely related to *T. purpurea.*

T. flava Thulin – Nord. J. Bot. 24 : 513, 2007. – Icon.: ibid.: 516 ; Fl. Somalia 3 : 575, 2006.
Shrublet to c. 20 cm tall ; stems, leaves and calyx densely appressed white-hairy ; stipules 1,5-5 mm long, persistent, becoming rigid ; with bright yellow flowers (unique colour in Somalian species) ; mature seeds unknown.
“Rocky limestone slopes ; shallow soil over limestone” ; 100-220 m alt.
Very distinctive by the yellow flowers and glabrous pods. Known from only 3 collections.

T. forbesii Bak.
Perennial (or biennial ?) herb ; stems ascending, slender, to 0,4(-1) m long, branching, with short grey or fulvous pubescence ; leaves unifoliolate.
Sandflats ; coast ridge grassland ; forest remnant ; ridge woodland ; fresh-water swamp ; mixed tree savanna on sandstone ; sandy ground by roadsides ; to 300 m alt.
S. Africa (subsp. **interior)**. – Not in Zimbabwe.
Comprises 3 subspp.: – subsp. **forbesii** (syn.: *T. junodii* De Wild.) ; – subsp. **inhacensis** Brummitt ; – subsp. **interior** Brummitt

T. fulvinervis Hochst. ex A. Rich.
Annual herb to 1 m tall ; stems appressed brownish pubescent.
Grassland ; woodland ; ± 1100-1700 m alt.

T. glomeruliflora Meisn. subsp. **meisneri** (Hutch. & Burtt Davy) Schrire – Treated as **T. meisneri** in Fl. Zambes. 3/3 : 195, 2007.
bas.: *T. meisneri* Hutch. & Burtt Davy
syn.: *T. incarnata* Brummitt p.p., excl. specim. ex Mozambique (= **T. brummittii)**.
Annual or short-lived perennial herb to 1,3 m tall ; stems erect, ± branched, very sparsely pubescent above, glabrous below, smooth ; mature seeds unknown.
Mountain forest margins ; 975-1950 m alt.
S. Africa (Transvaal, Natal).
Subsp. **glomeruliflora** in S. Africa (Natal).

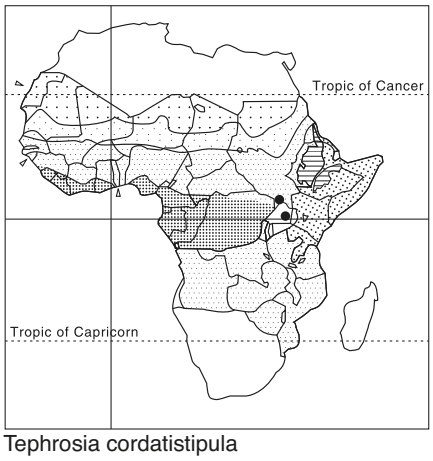
T. gobensis Brummitt
Subshrub, slightly woody, 30-40 cm tall ; branches densely appressed pilose or with ascending grey hairs.
Shallow soil overlying basaltic rocks.
Swaziland (230-460 m alt.).

T. gossweileri Bak. f.
Stems usually simple, sarmentose ascending, fuscous-red hairy arising from a perennial rootstock ; leaves unifoliolate ; pod unknown.
In open “mumua” thickets.
Closely allied to *T. acaciifolia* and *T. manikensis.*

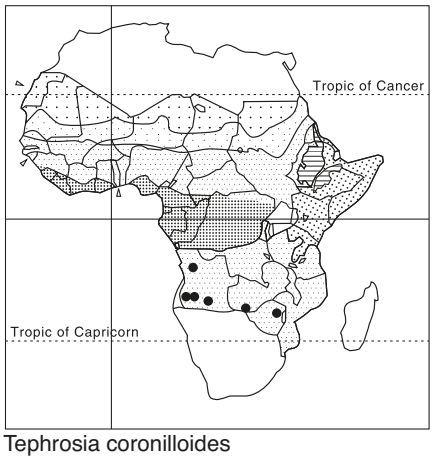
T. gracilipes Guill. & Perr.
Annual, slender herb 0,25-0,4 m tall, thinly appressed grey-silky hairy ; stems erect, very diffuse, the branches slender, ascending, angular.
Lateritic plateau ; fine gravels ; sandy soil ; sandstone hill.

T. grandibracteata Merxm.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 366, 1968 – Icon. : Fl. Zambes. 3/3 : 194, 2007.
Shrub to 3(-5) m tall ; young branches shortly and closely appressed-golden-brown-pubescent.
Open grassland ; destroyed forest ; forest edge ; evergreen forest edge ; *Anthospermum, Hypericum lanceolatum* scrub ; 1760-2250 m alt.

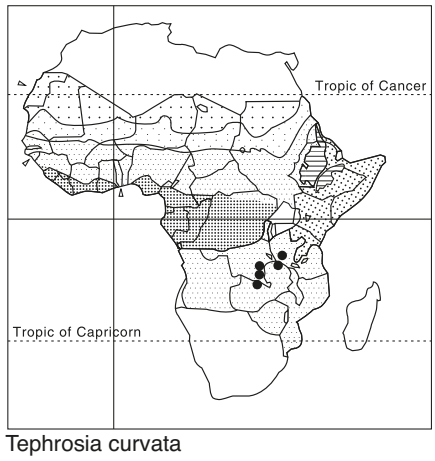
T. heterophylla Vatke
Perennial herb to 50 cm tall ; leaves 1-foliolate ; stems whitish appressed-pubescent or with a denser, partly ferrugineous indumentum with ± spreading hairs (in S Ethiopia).
Woodland ; dry bushland ; usually on rocky ground in limestone areas ; 700-1650 m alt.
Yemen ; Oman.



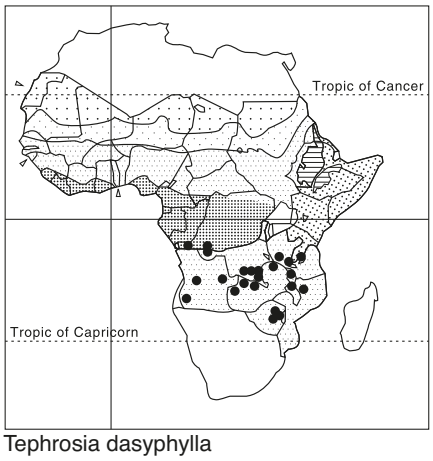
Tephrosia cordatistipula



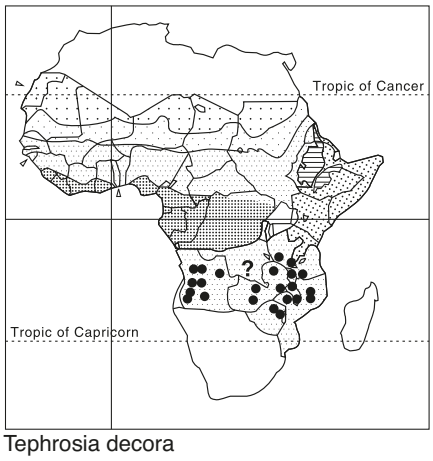
Tephrosia coronilloides



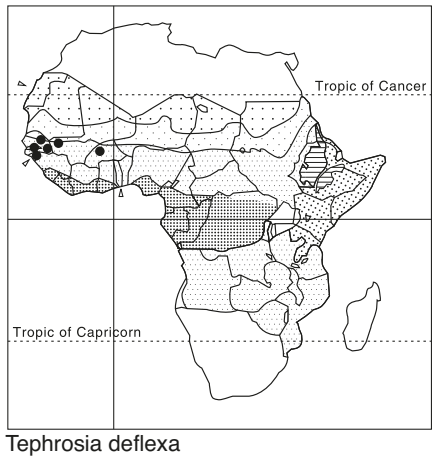
Tephrosia curvata



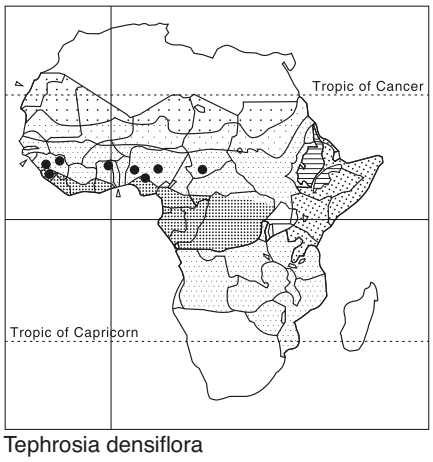
Tephrosia dasyphylla



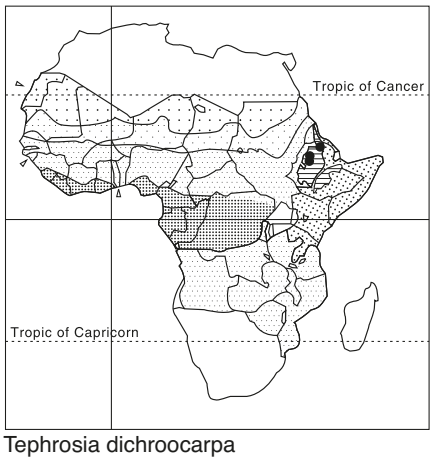
Tephrosia decora



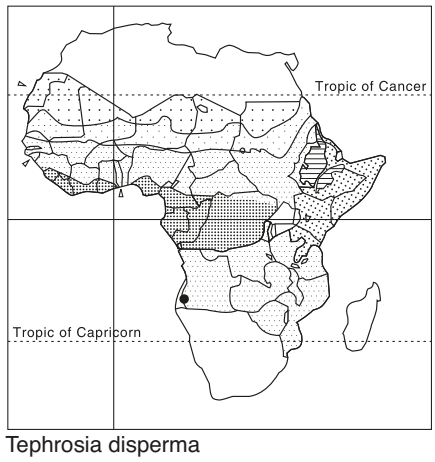
Tephrosia deflexa



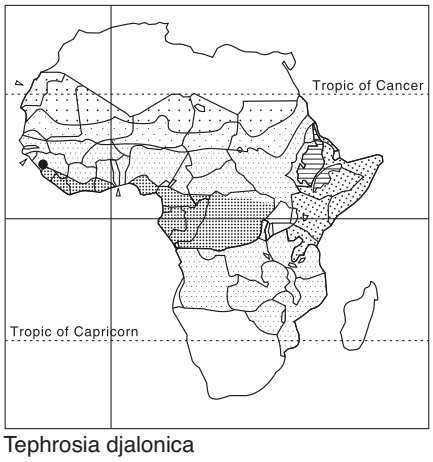
Tephrosia densiflora



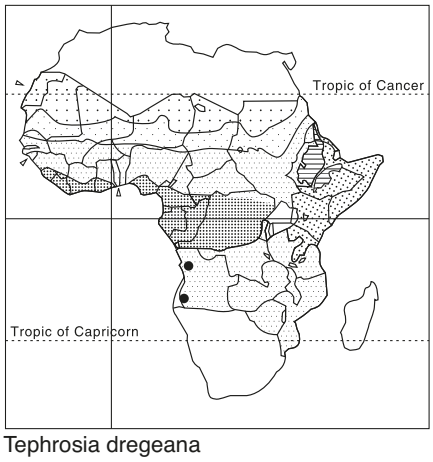
Tephrosia dichroocarpa



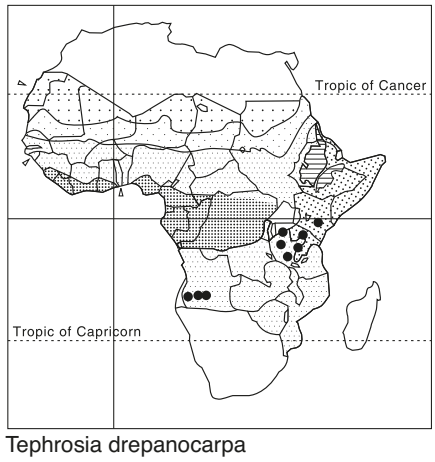
Tephrosia disperma



Tephrosia djalonica



Tephrosia dregeana



Tephrosia drepanocarpa

T. hildebrandtii Vatke, incl. var. *depauperata* Chiov.

syn.: *T. orientalis* Bak. f.

Short-lived perennial herb with a taproot, to 1 m tall ; hairs on stems rather sparse, appressed or spreading, white ; leaves unifoliolate.

Grassland ; semi-evergreen bushland ; 1100-1900 m alt.

T. hochstetteri Chiov.

Annual or short-lived perennial herb to 80 cm tall ; stems spreading brownish pubescent.

Probably grassland ; 1600-1800 m alt.

Not collected since 1906.

T. hockii De Wild.

syn.: *T. aurantiaca* Harms subsp. *hockii* (De Wild.) J. Dewit, incl. var. *brevifolia* J. Dewit, nom. illegit., and fa. *albescens* J. Dewit, nom. illegit.

Perennial suffrutex from a stout, woody rhizome ; stems ± many, herbaceous (annual ?), erect, ± unbranched, 30-75 cm tall, strigulose to villous-puberulous.

Wooded savanna ; dambo margin ; woodland ; 1200-1450 m alt.

Comprises 2 subspp.: – subsp. **hockii** [syn.: *T. lutea* R. E. Fries ; *T. rhizomatosa* De Wild.; *T. aurantiaca* Harms subsp. *lutea* (R. E. Fries) J. Dewit and f. *cinerea* J. Dewit and fa. *fulvescens* J. Dewit]; – subsp. **hirsutostylosa** (J. Dewit) J. B. Gillett

T. holstii Taub.

syn.: *T. rivae* Harms ; *T. kassneri* Bak. f.

Perennial or annual bushy herb, to 80 cm tall ; hairs on stem usually spreading and yellowish, ± 0,5 mm long ; leaves 1-foliolate.

Grassland ; forest margins ; swampy ground ; 1200-2450 m alt.

T. huillensis Welw. ex Bak.

syn.: *Cracca huillensis* (Welw. ex Bak.) O. Kuntze

Diffuse moderately branched lax perennial herb 30-60 cm tall ; stems flexuous, densely clothed with fine spreading tawny hairs.

Wooded meadows around lake ; bushy pastures ; 900-1800 m alt.

Comprises 2 vars.

T. humilis Guill. & Perr.; Gillett, Kew Bull. 13 : 130, 1958.

syn.: *T. platycarpa* sensu Fl. W. Trop. Afr., Ed. 2, 1(2) : 529, 1958 *excl.* specim. Batten Poole 152, Lely 584, Olorunfemi FHI 24362.

Annual erect herb 25-30 cm tall or more.

Grassy savanna ; sand ; slopes with blocks ; in iron-rich soils (Senegal).

Near (and often confused with) *T. platycarpa, T. nana.*

T. interrupta Hochst. & Steud. ex Engl.; Gillett, Kew Bull. 13 : 127, 1958 ; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 328, 1968.

Softly woody branching shrub 1-5 m tall ; young stems brown pubescent.

Grassland ; open grassy places ; scrub and forest margins ; rocky outcrops ; stream sides ; rain-forest with *Albizia, Macaranga, Croton, Ocotea ;* ericaceous scrub ; scrub in ravines ; miombo woodland ; damp places ; 1050-3000 m alt.

Comprises 3 subspp.: – subsp. **interrupta** [syn.: *Dolichos genistiformis* Chiov.]; – subsp. **elongatiflora** J. B. Gillett [syn.: *T. elongatiflora* Harms in sched.]; – subsp. **mildbraedii** (Harms) J. B. Gillett [syn.: *T. atroviolacea* Bak. f.; *T. doggettii* Bak. f.; *T. nyikensis* Bak. p.p., excl. lectotypum sec. Cronquist 1953, 1954].

Not in Angola (= *T. tundavalensis)*.

T. iringae Bak. f.

syn.: Enum. 2 : 118, 1992.

Stems minutely appressed pubescent, to 40 cm tall, from a woody perennial rootstock ; mature seeds unknown.

Grassland ; 1600-1900 m alt.

Not in Zaire (“ *T. iringae* “ specim. Germain 6802 = *T. linearis ;* 7052 = *T. reptans)*.

T. kalamboensis Brummitt & J. B. Gillett

Erect herb ± 60 cm tall ; stems, leaf-rhachides and undersurface of leaflets densely covered with short silvery appressed hairs ; mature pod unknown.

Deciduous woodland ; 1350 m alt.

Only known from the type collected in 1965.

T. karkarensis Thulin

Shrublet, to 40 cm tall, densely branched ; stems greenish, somewhat sulcate, pubescent with short appressed to spreading hairs ; leaves 1-foliolate.

Common on limestone slopes with *Commiphora* spp., *Acacia cheilanthifolia, Mimusops angel, Boswellia sacra, Wellstedia socotrana, Teucrium polium, Psilotrichum virgatum, Echiochilon* sp.; 300-800 m alt.

Resembling *T. heterophylla ;* nearest relative is **T. virgata** H. M. L. Forbes from S. Africa.

The type (Thulin & Warfa 5455) collected in 1985 (incl. specimens in flower, grown from seeds of the holotype). – A flowering specimen (Thulin & Warfa 4700) first determined as *Ptycholobium biflorum* subsp. *biflorum* by Thulin from Somalia (Nord. J. Bot. 8 : 465, 1989) is in fact *Tephrosia karkarensis ;* their flower structures are very similar, but fruits different.

T. kasikiensis Bak. f.; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 347, 1968 ; Fl. Zambes, 3/3 : 166-167, 2007.

Erect plant to 1 m tall perhaps annual or biennial ; hairs on stems and leaf-rhachides usually appressed (subsp. **kasikiensis)** or grey-spreading (subsp. **chinsaliana)**.

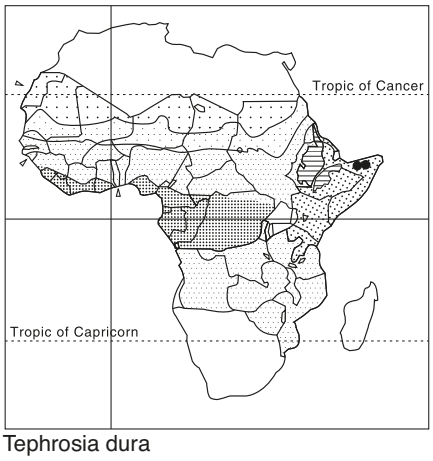
Mountain and riverine forest margins ; 1525-2100 m alt.

Comprises 2 subspp. (or perhaps more : groups a, b, c, sensu Brummitt, l.c.). Subsp. *chinsaliana* Brummitt known only from the type collected in 1956.

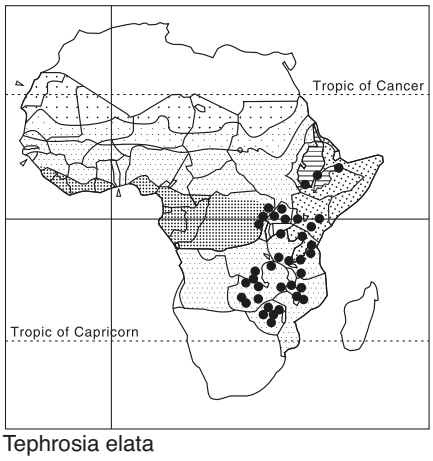
T. katangensis De Wild.

Perennial plant probably with a rhizome ; several stems, 40 cm tall, with spreading, short or long or intermixed short and long hairs ; pod unknown.

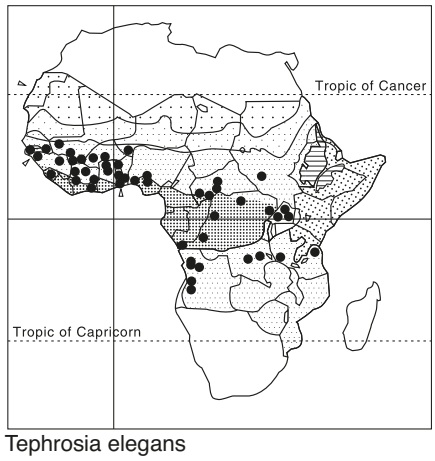
Ecology unknown.



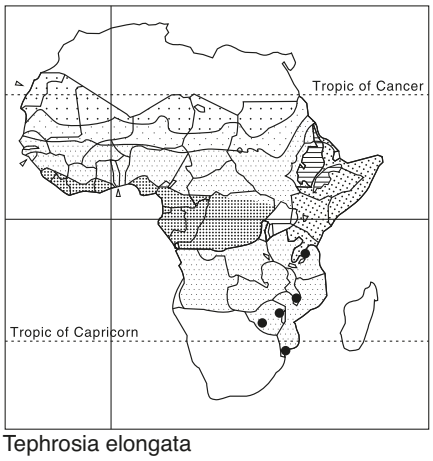
Tephrosia dura



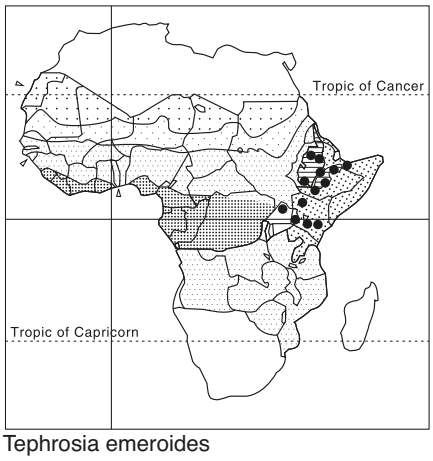
Tephrosia elata



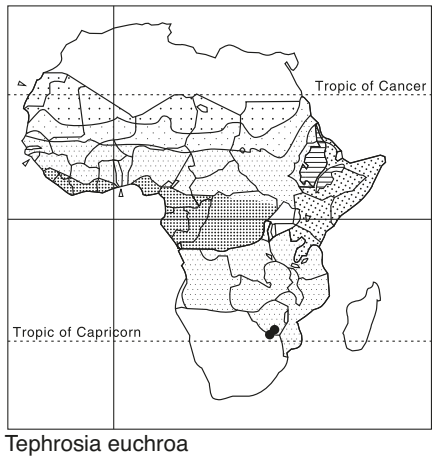
Tephrosia elegans



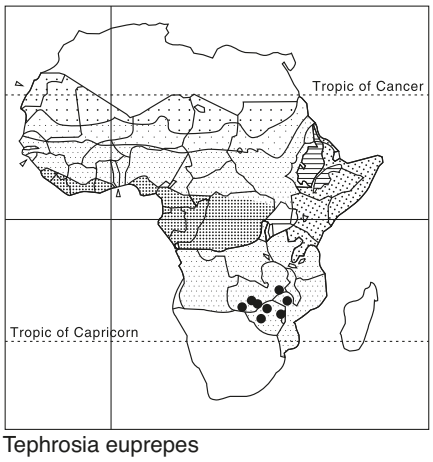
Tephrosia elongata



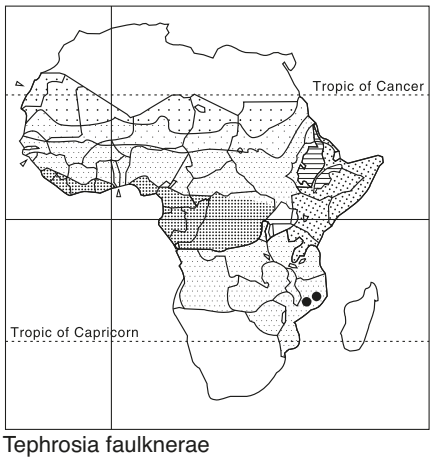
Tephrosia emeroides



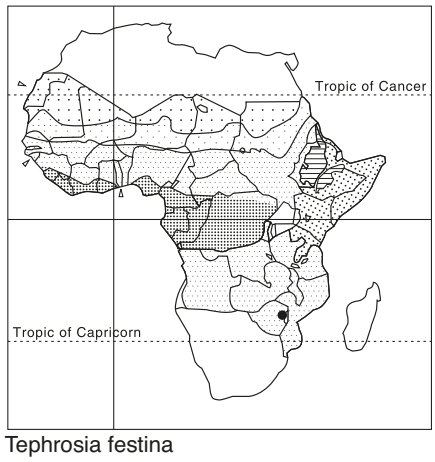
Tephrosia euchroa



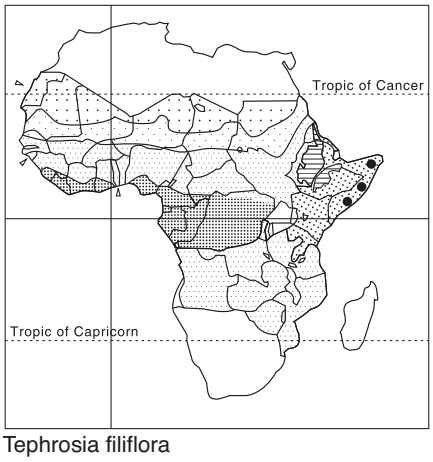
Tephrosia euprepes



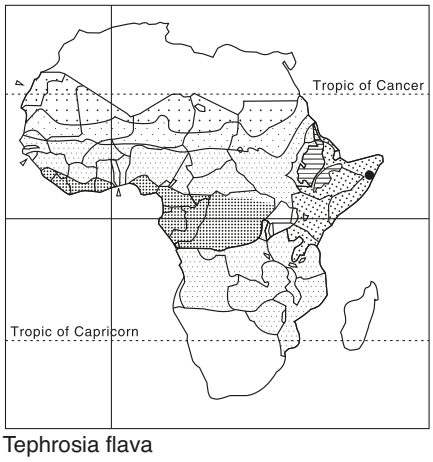
Tephrosia faulknerae



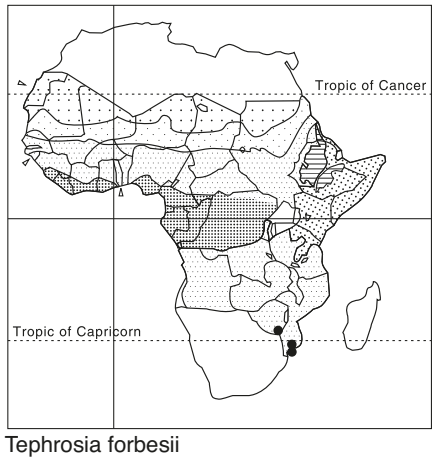
Tephrosia festina



Tephrosia filiflora



Tephrosia flava



Tephrosia forbesii

T. kazibensis Cronquist

Shrub with twigs of the season sericeous-tomentose ; leaves 1-foliolate ; pod unknown.

Open forest ; 1140 m alt.

Only known from the type collected in 1948.

T. kindu De Wild. – Icon.: Ann. Mus. Congo Belge, Sér. IV, Bot. 1: tab. 46, 1903.

Perennial herb with several simple or subsimple stems, strigose or subsilky, 20-40 cm tall, from a short erect stock or ramose rhizome and a long taproot or perhaps creeping ; leaves 1-foliolate.

Open forest ; miombo, *Uapaca-Monotes* woodland ; secondary formations ; 1300-1500 m alt.

T. lathyroides Guill. & Perr.; Gillett, Kew Bull. 13 : 111, 1958, non sensu Bak. f., Leg. Trop. Afr.: 185, 1926 (= *T. subtriflora)*.

Annual or sub-perennial herb ; branches ± creeping at the base ; stems densely pubescent ; leaflets pubescent on both sides.

Clayey soils in lateritic places ; dry stony soils.

T. laxiflora R. E. Fries ; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 324, 1968.

syn.: *T. lurida* sensu R. E. Fries, Wiss. Ergebn. Schwed. Rhod.-Kongo-Exped. 1: 83, 1914, non Sond.; *T. paucijuga* sensu Cronquist, Fl. Congo Belge 5 : 106, 1954, excl. specim. Lebrun 9721 (= *T. stormsii ;* syn. *T. paradoxa)*; *T. longipes* Meisn. var. *lurida* (Sond.) J. B. Gillett 1958 p.p., non *T. lurida* Sond.

Perennial plant with herbaceous erect simple stems to 45-75 cm tall with 2 leaves per stem, from a woody rootstock ; stems glabrous to sparsely, shortly appressed-pubescent, often burned off by fires.

Brachystegia woodland on burnt ground ; chipya vegetation on edge of dambo ; plateau woodland ; woodland on orange soil ; *Julbernardia-Brachystegia* woodland on reddish brown stony loam ; 1150-1400 m alt.

Closely related to *T. paucijuga* which differs by its broader (8 mm) few-seeded pods (in *T. laxiflora* c. 4 mm broad, with 8-12 seeds).

T. lebrunii Cronquist

Erect ramose rather woody herb to 2,5-3 m tall ; stems densely silvery silky ; ripe seeds unknown.

Cultivations ; open savanna ; grassland and grassland with scattered trees ; 1200-2290 m alt.

T. lepida Bak. f.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 264, 1968.

Annual or sometimes short-lived perennial herb, woody towards the base, sometimes almost shrubby (subsp. **lepida)**, sometimes slender, erect (subsp. **nigrescens** Brummitt), 20-100 cm tall ; stems densely appressed silvery, often rather fulvous in their upper parts.

Seems to be quite frequent, and in places common, in woodland between 27° and 32° E ; *Brachystegia* woodland ; open bush by side of road ; grass by track ; steep side, rocky dry ground ; stony-sandy road on edge of woodland ; sandy soil ; 730-1770 m alt.

Comprises 2 subspp.

T. letestui Tiss.

Perennial plant with a woody root ; stems woody, creeping, ± ramose, 50 cm tall, cylindrical, with white-silky appressed hairs ; nodes ± geniculate ; pod stipitate (1,5 mm) like in *T. chisumpae.*

Rocks ; laterite.

T. limpopoensis J. B. Gillett, Kew Bull. 13 : 418, 1958.

Low shrub to 1m tall ; older parts woody, defoliate ; young stems densely appressed-pubescent with grey hairs ; older stems with rugose bark ; leaves with 1-2 pairs of leaflets.

Colophospermum mopane bush.

S. Africa (c. 790-1170 m alt.) ; Namibia.

Only one collection cited from Fl. Zambes. area. Collections from S Zimbabwe seem to be intermediate between *T. limpopoensis* and *T. purpurea* var. *leptostachya* (Brummitt, Bol. Soc. Brot., Sér. 2, 41: 246, 1968). Further collections and field observations are required.

T. linearis (Willd.) Pers.; Gillett, Kew Bull. 13 : 118, 1958, incl. var *discolor* (E. Mey.) Brummitt ; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 266, 1968.

bas.: *Galega linearis* Willd.

syn.: *Tephrosia pulchella* Hook. f.; T. *seminuda* Boj. ex Bak.; *T. rutenbergiana* Vatke ; *Cracca linearis* (Willd.) O. Kuntze ; *T. discolor* E. Mey.; *T. linearis* subsp. *discolor* (E. Mey.) J. B. Gillett – The 2 latter distinguished as var. *discolor* (E. Mey.) Brummitt in Fl. Zambes. 3/3 : 155, 2007.

± Erect annual or short-lived perennial herb (0,15-)0,3-1,3(-1,6) m tall ; stems densely pubescent, the hairs appressed or, less often, spreading, white or yellowish.

Grassland (incl. dry) ; rocky slopes ; cultivations and fallow land ; often in seasonal swamps ; sandy ground ; lateritic slopes ; also ruderal ; woodland ; 0-2440 m alt.

Very variable species with many transitional forms between the vars. (viz. subspp.) described ; and perhaps also introgression with *T. argyrotricha.*

S. Africa ; Madagascar.

T. longipes Meisn.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 308, 1968 ; Fl. Zambes. 3/3 : 173-177, 2007.

syn.: *Cracca longipes* (Meisn.) O. Kuntze

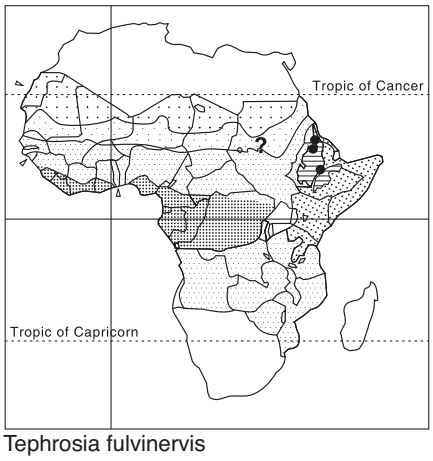
Annual to probably short-lived perennial herb with a stout taproot or sometimes becoming woody at the base, and with ± erect, fairly robust stems, 2-3 mm Ø in the lower parts, usually regularly branched, to 1-1,5 m tall ; stems *usually* shortly but densely greyish-appressed-pubescent.

River sides ; rocky hill in *Brachystegia* woodland ; sand veld ; mopane woodland on karroo basalt ; also on granite rocks ; escarpment miombo ; grassland ; dense bush ; old sand dunes ; 0-1420 m alt.

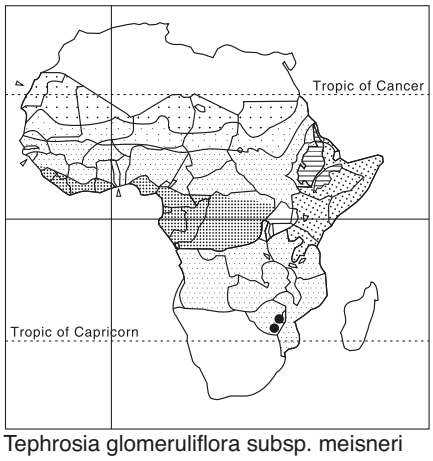
S. Africa, Swaziland.

Comprises 2 subspp.: – subsp. **longipes** with 2 vars. – Reviewed by Brummitt in Fl. Zamb., l.c.: 4 vars. recognized, viz. var. **longipes,** var. **drummondii,** var. **lurida** and var. **lissocarpa** (the 2 latter cited below under **T. lurida**).

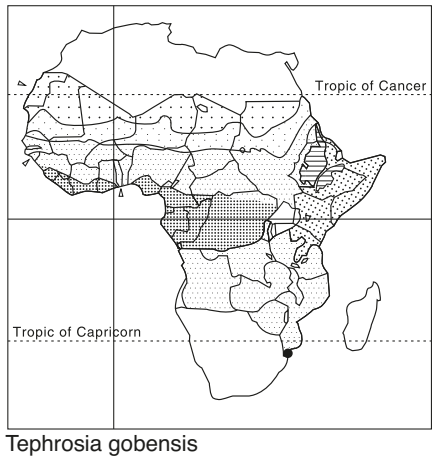
Not in Sudan (sub nom. *T. pseudolongipes* in Andrews, Fl. pl. Anglo-Egypt. Sudan).



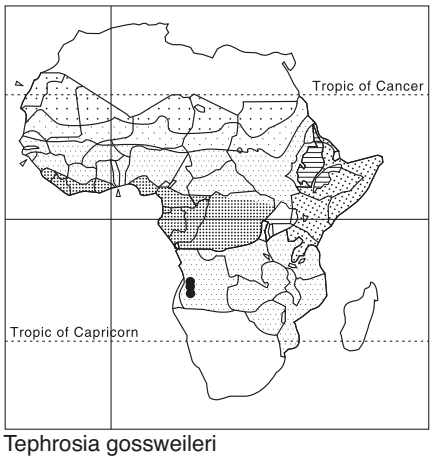
Tephrosia fulvinervis



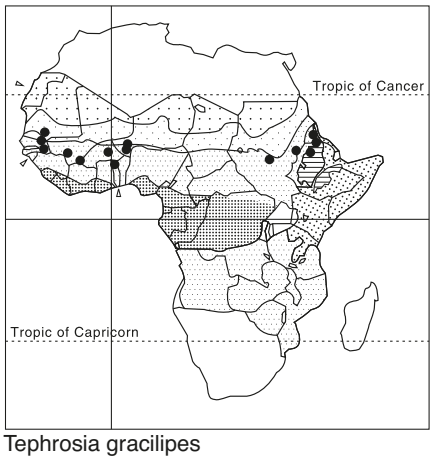
Tephrosia glomeruliflora subsp. meisneri



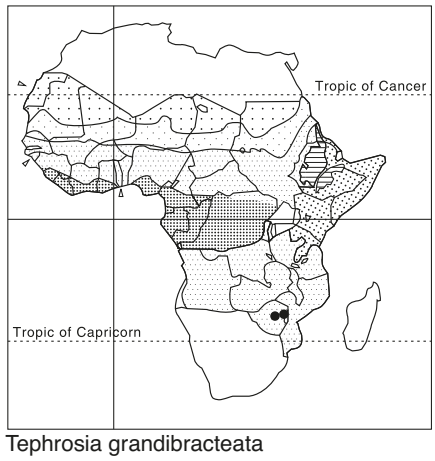
Tephrosia gobensis



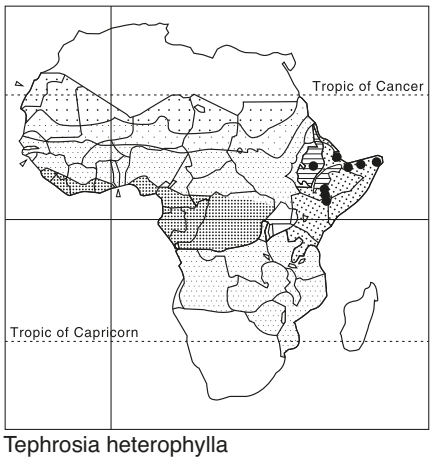
Tephrosia gossweileri



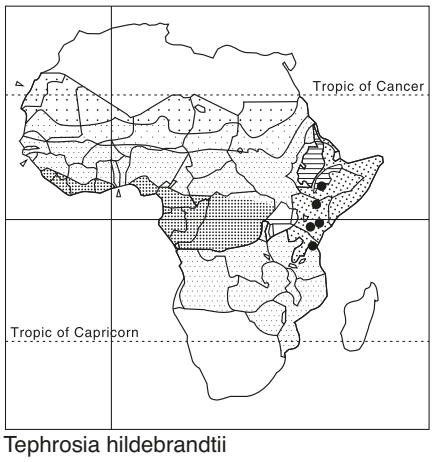
Tephrosia gracilipes



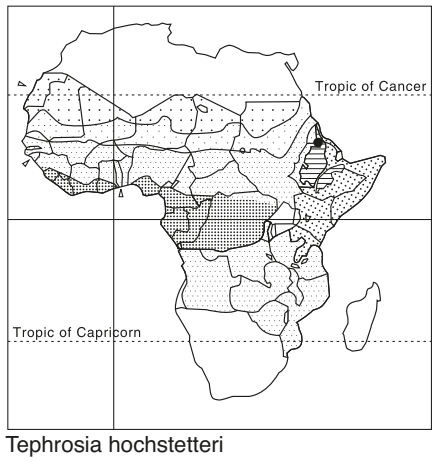
Tephrosia grandibracteata



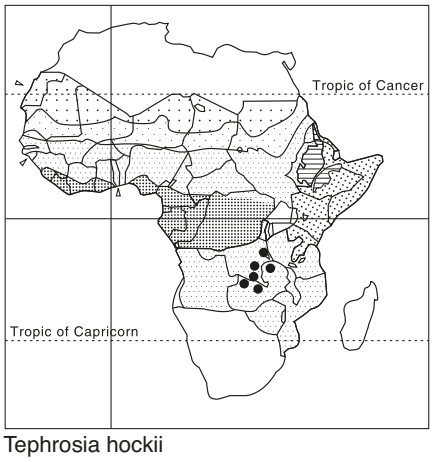
Tephrosia heterophylla



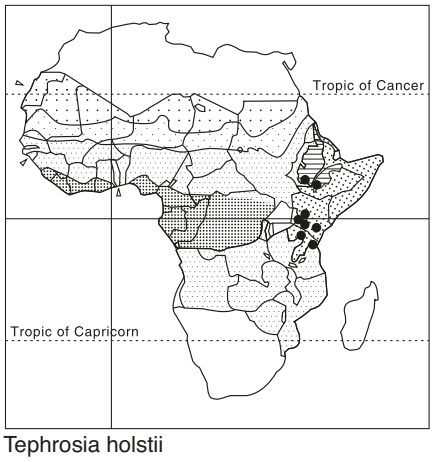
Tephrosia hildebrandtii



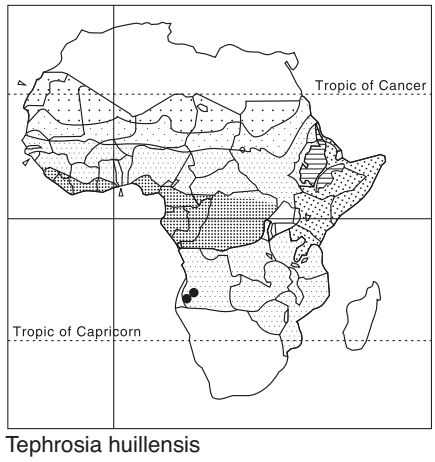
Tephrosia hochstetteri



Tephrosia hockii



Tephrosia holstii



Tephrosia huillensis

T. lortii Bak. f.

Perennial herb with straggling white or fulvous pubescent branches to 70 cm long.

Acacia-Commiphora bushland ; rocky ground ; 1100-1650 m alt.

T. lupinifolia DC.; Brummitt, Kew Bull. 35 : 469, 1980 ; incl. var. *digitata* (DC.) Bak. – Icon.: Fl. Zambes. 3/3 : 129, 2007.

syn.: *T. digitata* DC.; *Rhynchosia cienkowskii* Schweinf. [Icon.: Reliq. Kotsch.; tab. 24-25, 1868 (half-aborted pods)]; *Cracca lupinifolia* (DC.) O. Kuntze ; *C. laevigata* (Welw. ex Bak.) O. Kuntze ; *Galega lupinifolia* Burch. nom. in sched.; *Cracca "lupulinifolia"* Hiern

Annual or perennial herb, prostrate or wide-spreading procumbent or climbing, 30-80 cm long ; young stems often yellowish pubescent ; leaves 3-5 (-7)-palmate ; roots tuberous ; some flowers cleistogamous (on shorter axillary pseudo-branches produced near the base of the stem).

Grassy shortly-bushy hills ; open sandy places ; drier sea-sands ; often in cultivations ; 0-1900 m alt.

S. Africa, Botswana, Namibia.

T. lurida Sond.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 317, 1968. – In Fl. Zambes. 3/3 : 176, 2007 reduced to 2 vars. under **T. longipes** by Brummitt.

syn.: *T. dowsonii* Bak. f.; *Cracca lurida* (Sonder) O. Kuntze ; *Tephrosia longipes* Meisn. var. *lurida* (Sond.) J. B. Gillett 1958 p.p., excl. syn. *T. laxiflora* and *T. paucijuga* sensu Cronquist (Torre in Consp. Fl. Angol. 3 : 158, 1962, quoad syn., excl. spec.).

Perennial suffrutex, decumbent at base, with slender herbaceous stems ; sparingly branched with branches ascending or sometimes unbranched, 40-50 cm tall, from a stout woody rootstock ; stems sparsely or less often densely appressed pubescent or spreading-pubescent to tomentose.

Brachystegia woodland ; rocky places ; steep grassy slope ; grassland ; bushland ; 1200-2200m alt.

S. Africa.

Comprises 3 vars.: – var. **lurida** (syn.: *T. angustissima* Engl.; *T. dowsonii* Bak. f.) ; – var **drummondi** Brummitt (very distinct, from Chimanimani Distr. and S. Africa) ; – var. **lissocarpa** Brummitt (from one collection in W Zimbabwe and from S. Africa).

Difficult to distinguish from *T. longipes* and included by Schrire (Bothalia 17 : 11, 1987) within this species. *T. lurida* and *T. longipes* seem to hybridise in S. Africa. Critical field observations and perhaps experimental studies are required on both species (Brummitt l. c.) – Cf. note above.

T. malvina Brummitt

Perennial plant with a woody vertical rootstock and prostrate or ascending very angular slender ramose stems, 10-50 cm long ; stems with short appressed or spreading hairs.

Brachystegia, Isoberlinia, Acacia, Combretum scrub woodland ; open grassy and sandy places ; miombo woodland ; secondary *Brachystegia, Upaca* woodland ; top escarpment ; among rocks under cliffs in gorge ; 960-1800 m alt.

Resembling *T. purpurea* subsp. *leptostachya.*

T. manikensis De Wild., Brummitt, Bol. Soc. Brot., Sér. 2, 41: 385, 1968.

Perennial plant with a ramose rhizome and a long stout taproot ; aerial stems numerous, simple or subsimple, ascending or erect 15-50 cm long, ± appressed brown-pubescent ; leaves 1-foliolate.

Grassy savanna on sandy soil ; 1700 m alt.

Very variable species with 2 vars.: – var. **manikensis ;** var. **albosericata** ! Brummitt (intermediates occur).

T. maxima (L.) Pers.

bas.: *Galega maxima* L.

syn.: *Tephrosia purpurea* (L.) Pers. var. *maxima* (L.) Bak.

Shrubby plant to 1,3 m tall, all the vascular parts rather reddish ; indumentum of stems appressed.

Grassland.

India, Sri Lanka.

The plant of East Africa is perhaps an undescribed subsp. (more robust, larger flowers, shorter peduncles, appressed indumentum).

T. micrantha J. B. Gillett ; Brummitt, Bol. Soc. Brot. Sér. 2, 41: 254, 1968.

Annual to biennial herb with a fairly stout taproot and usually tufted habit with several ascending, much-branched stems 10-25 cm tall, or sometimes ± mat-forming with more elongate ± procumbent branches to 30 cm long ; stems pubescent with appressed to ascending or occasionally spreading hairs, silvery.

Fire-swept deciduous woodland, especially on sandy ground ; open *Brachystegia, Uapaca* woodland ; abundant on gravelly soil in *Brachystegia boehmii* grassland ; waste ground by roadside ; compacted soil in *Julbernardia* scrub woodland ; stony ground in *Brachystegia* woodland ; 150-1500 m alt.

Some variation exists in this species.

T. miranda Brummitt

Shrub 2-3 m tall with ascending stems, grey-tomentose ; racemes with each fascicle subtended by a stipulate foliage leaf, the uppermost ones in each inflorescence are only unifoliolate and very much reduced in size (± 5 mm long) ; pod slightly curved, somewhat constricted laterally between the seeds, apparently indehiscent but breaking up irregularly.

Granite rock desert ; 400-500 m alt.

More flowering and fruiting material required. Known only from 2 collections made in 1964.

T. montana Brummitt

Shrub to 3 m tall or more ; branches shortly brown-tomentose with spreading hairs.

Forest margin ; 1300-1645 m alt.

Near *T. grandibracteata, T. festina* and occurring sympatrically with both of these species. More information required as to distribution, ecology and morphology.

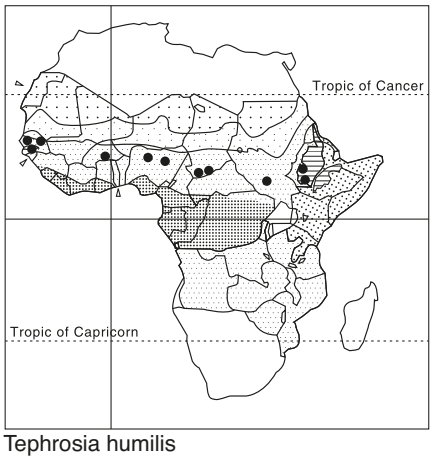
T. moroubensis Tiss.

Annual herb with erect stems 30-40 cm tall ; branches several at the base, spreading, 20-25 cm long ; stems and branches angular, densely covered with grey, spreading hairs ; leaves 1-foliolate.

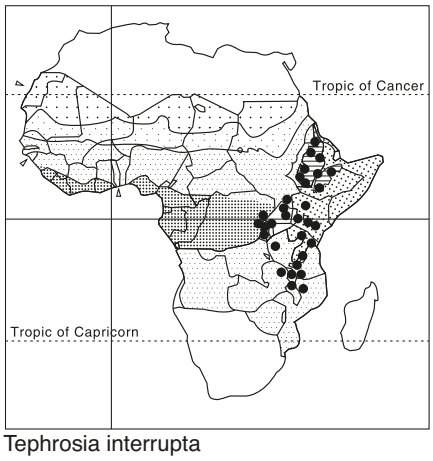
Laterite.

Near *T. hildebrandtii.*

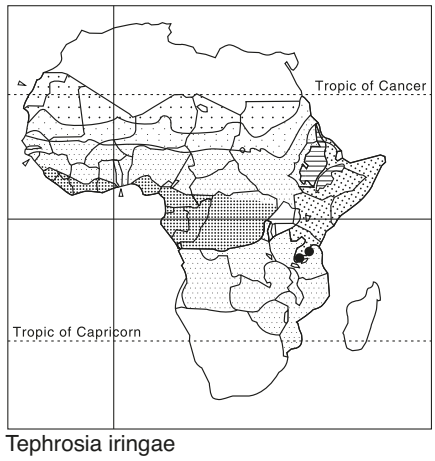
Only known from the type collected in 1922.



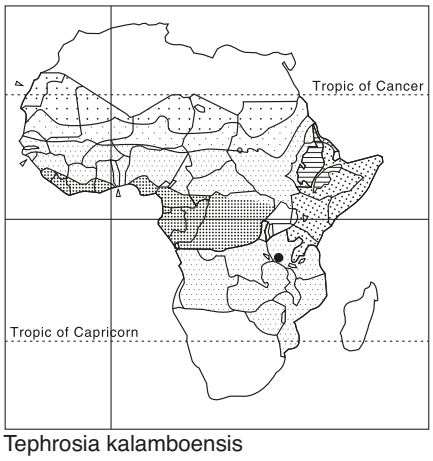
Tephrosia humilis



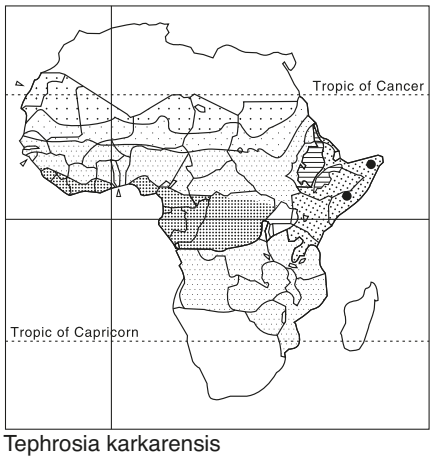
Tephrosia interrupta



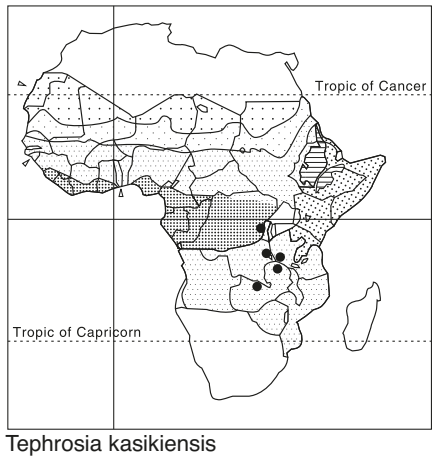
Tephrosia iringae



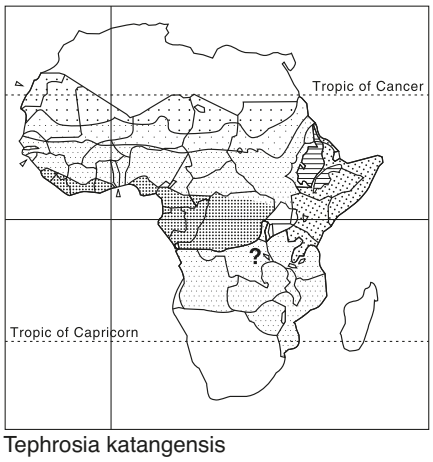
Tephrosia kalamboensis



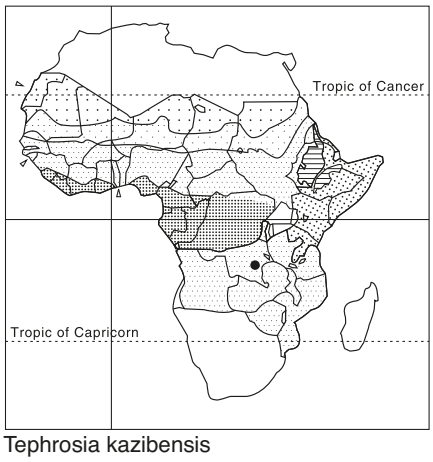
Tephrosia karkarensis



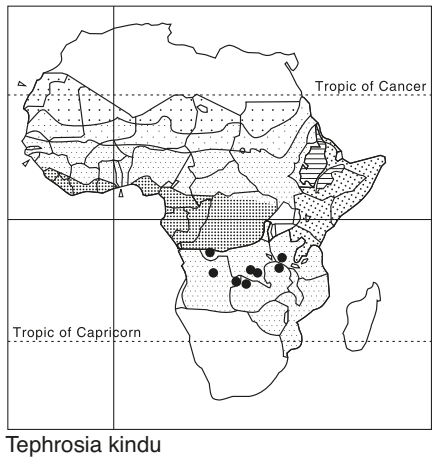
Tephrosia kasikiensis



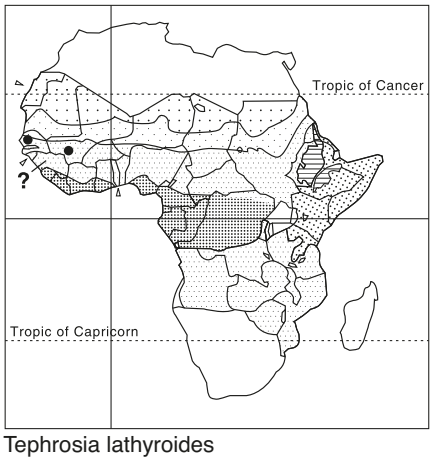
Tephrosia katangensis



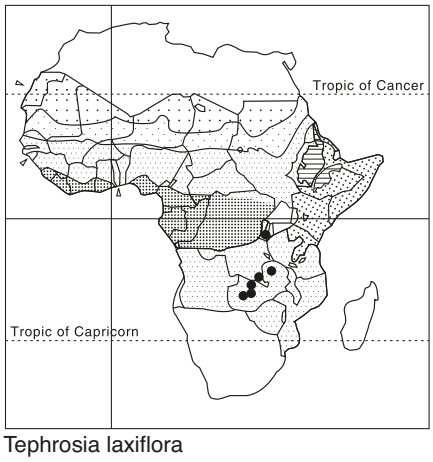
Tephrosia kazibensis



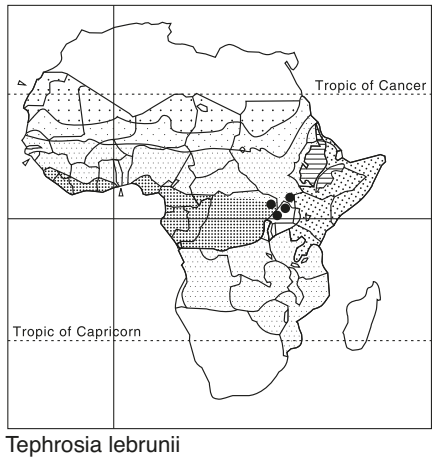
Tephrosia kindu



Tephrosia lathyroides



Tephrosia laxiflora



Tephrosia lebrunii

T. mossiensis A. Chev. 1912.

Branched herbaceous plant becoming a woody undershrub, ramose from the base, 0,5-2 m tall, shortly fulvous-tomentose, becoming glabrous, brownish when old.

Rocky places (granite, sandstone, ferruginous hard-pan); with *Euphorbia sudanica, Gilletiodendron glandulosum, Gardenia sokotensis, Caralluma adscendens, Monechma ndellense, Ficus lecardii;* like in *Steganotaenia araliacea, Gyrocarpus americanus, Lannea microcarpa, Ficus glumosa, F. kerstingii, T. mossiensis,* its roots slip into stone fissures resulting in the breaking up of the rock; also on rocky plateaux with *Commiphora africana, Combretum micranthum;* on the cliffs in very open vegetation with *Combretum lecardii, Boscia angustifolia, Cissus quadrangularis;* 300 (? and less)-1122 m alt. (vide Bull. Inst. Franç. Afrique Noire 24 : 69-111, 1962).

First collection : Lécard 156 ("forming enormous bushes in the rocks").

T. muenzneri Harms ; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 381, 1968 ; Neotype : Richards 13368 A.

Suffrutex with procumbent (or erect ?) stems, grey- to brown-tomentose, 30-50 cm long ; hairs long (1,5 mm), spreading ; leaves 1-foliolate.

Julbernardia paniculata, Brachystegia manga, B. spiciformis woodland on pink, sandy loam ; grassland ; flowering after fires ; 1500-1800 m alt.

Comprises 2 subspp. : – subsp. **pedalis** Brummitt known only from the type collected in 1954.

T. multijuga R. G. N. Young ; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 262, 1968.

syn. : *T. capensis* (Jacq.) Pers. var. *angustifolia* E. Mey. quoad lectotypum sensu Burtt Davy ; *Cracca capensis* (Jacq.) O. Kuntze var. *rufoincana* 0. Kuntze

Perennial herb, shrublet or shrub (or sometimes annual herb ?) with trailing, ascending stems 30-60 cm tall from a common base (woody rootstock ?) or with an erect branching stem ; branches slender, flexuous, sulcate, angular, sparsely patently or appressedly clothed with reddish hairs, or glabrescent, stiff and much branched.

Androstachys forest, deep ravine on mountain slope ; mixed woodland with *Afzelia, Combretum molle, Albizia adianthifolia* and secondary associations in rocky places ; to 250 m alt.

S. Africa, Swaziland.

Related to *T. polystachya;* intermediates between the 2 species occur in S. Africa. Relationships need to be further investigated.

T. nana Kotschy in Schweinf. !; Gillett, Kew Bull.13 : 130, 1958, incl. var. *angolensis* Bak. – Icon. : Schweinfurth, Reliq. Kotsch. : tab. 16, 1868.

syn. : *T. polysperma* Bak. ; *T. barbigera* Bak., incl. var. *subglabra* Bak. f. and var. *bakeriana* (Hiern) Bak. f., nom. illegit. ; *T. humilis* var. *major* Bak. f. ; *Cracca barbigera* (Welw. ex Bak.) O. Kuntze, incl.var. *bakeriana* Hiern, nom. illegit., and var. *subglabra* Bak. f. ; *Cracca nana* (Kotschy) O. Kuntze

Annual or short-lived perennial herb 0,2 -1,5 m tall ; stems rusty hirsute, the longer hairs often to 2 mm long.

Grassland ; swamps ; river banks ; lateritic and clayey soils ; woodland ; cultivations ; footpath sides ; disturbed places ; 800 (and probably less) - 1800 m alt. Very common in Zaire.

T. newtoniana Torre

Perennial, prostrate herb ; stems ± 40 cm long, ramose with spreading long hairs ; ripe pod unknown.

Savanna ; grass-grown open mixed woods ; 1900 m alt.

Comprises 2 vars.

T. noctiflora Bojer ex Bak. ; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 228, 1968.

Straggling softly woody annual or short-lived perennial, or shrub, 0,5-1,5 (-2) m tall ; stems densely covered with appressed to spreading, grey to brown hairs.

Grassland ; cultivations ; thickets ; river banks, stony and rocky places ; woodland ; also cultivated ; 0-1800 m alt.

Not mapped ; probably not spontaneous in W Africa, Zaire, Uganda. Probably native in E Africa, from Uganda to S. Africa. Also in (native ?) Mascarene Isl., Seychelles, India, Sri Lanka ; Java ; Philippines. Introduced in W. Indies, S. America. Not in Madagascar (= *T. villosa).*

Very similar to *T. villosa.*

T. nseleensis De Wild. – Icon. : Ann. Mus. Congo Belge, Sér. 5, Bot. 1 : tab. 36, 1904.

Perennial plant with a ramose rhizome and probably a taproot ; stems numerous, simple, ascendant or erect, 30-50 cm tall, strigulose or subglabrous ; leaves 1-foliolate ; pod unknown.

Grassy savannas.

T. nubica (Boiss.) Bak. subsp. **nubica,** incl. var. *abyssinica* (Jaub. & Spach) Schweinf. but excl. var. *polyphylla* Chiov. (= *T. polyphylla);* Gillett, Kew Bull. 13 : 122, 1958, and illustration (pod) p.124 ; icon. : L. Boulos, Fl. Egypt 1 : 317, 1999.

bas. : *Pogonostigma nubicum* Boiss.

syn. : *P. abyssinicum* Jaub. & Spach

Perennial herb 0,4-0,8(-1,25) m tall, woody at the base, grey-tomentose throughout ; stems erect, much-branched, with hairs often spreading ; pod with a stipe ± 2 mm long, 1-seeded.

Drier *Acacia, Commiphora* bushland, especially at margins of seasonal watercourses ; sandy or sandy-clayey, rather humid places (e. g., hollows) ; stony places (scree).

Egypt.

Subsp. **arabica** (Boiss.) J. B. Gillett in Yemen, Western Saudi Arabia, Oman, Ras al Khaimah ; Jordan.

T. nyikensis Bak. ; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 335, 1968.

Softly woody annual or short-lived perennial herb 1-2 m tall ; stems with short appressed hairs intermixed with longer spreading or upwardly curved hairs or sometimes with only spreading hairs.

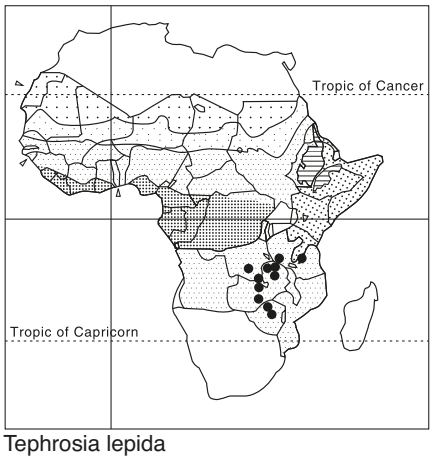
Grassland ; bushland ; woodland ; forest fringes ; swampy- or humid places ; open places in mountain areas ; (600-)1100-2330 m alt.

Comprises 2 subspp. : subsp. **nyikensis** in SE part of range ; – subsp. **victoriensis** Brummitt & J. B. Gillett (syn. : *T. congestiflora* Harms).

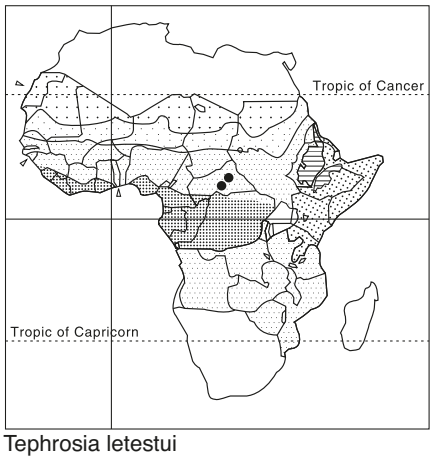
T. obbiadensis Chiov.

Slender erect shrub ; older branches thick with blackish bark, the younger light-grey.

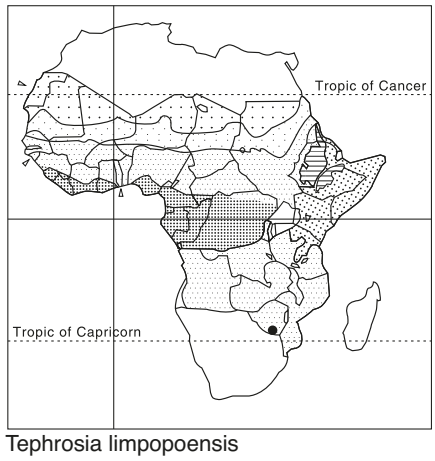
Acacia-Commiphora dry bushland and thickets ; fixed dunes ; 75-1000 m alt.



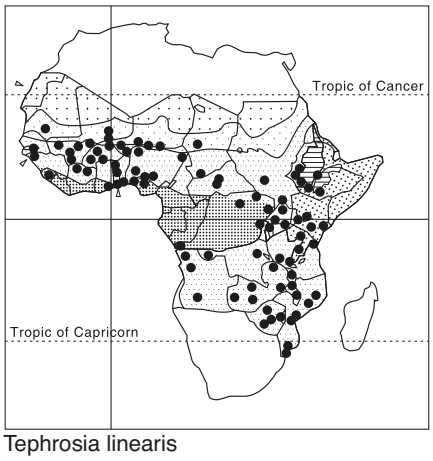
Tephrosia lepida



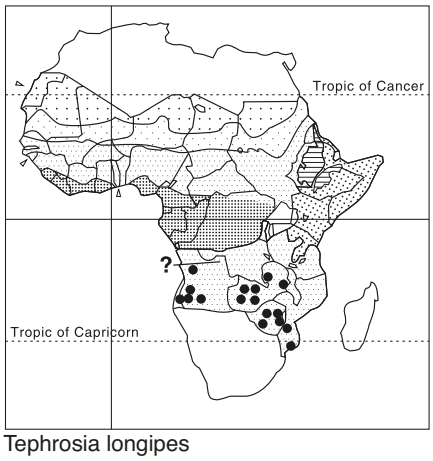
Tephrosia letestui



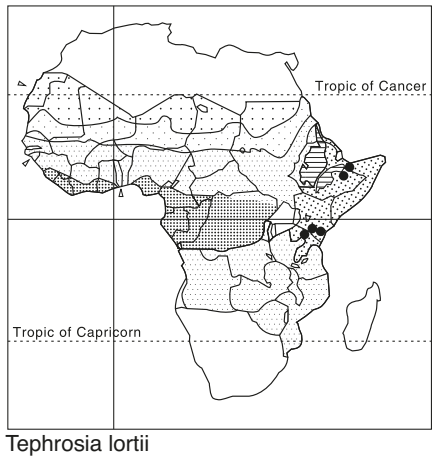
Tephrosia limpopoensis



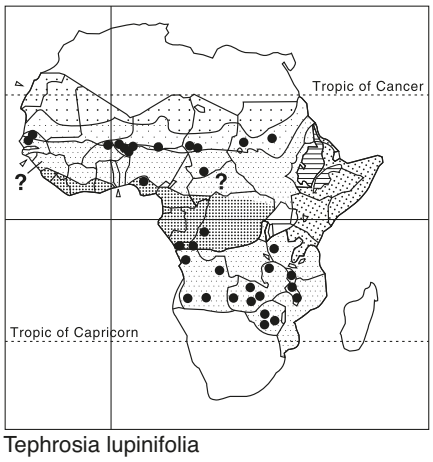
Tephrosia linearis



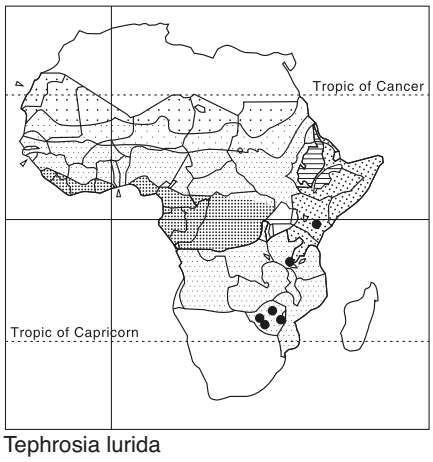
Tephrosia longipes



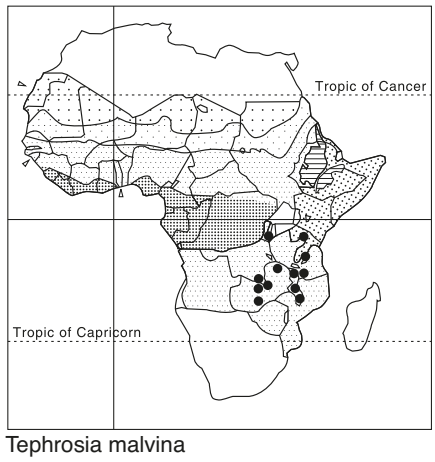
Tephrosia lortii



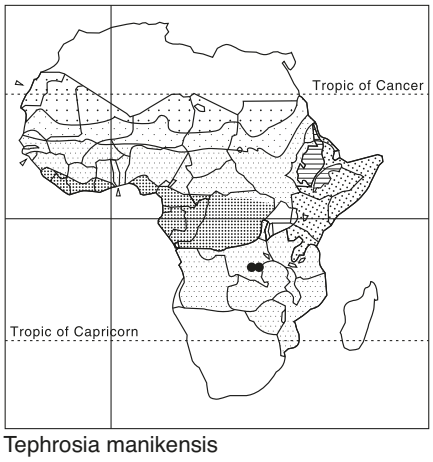
Tephrosia lupinifolia



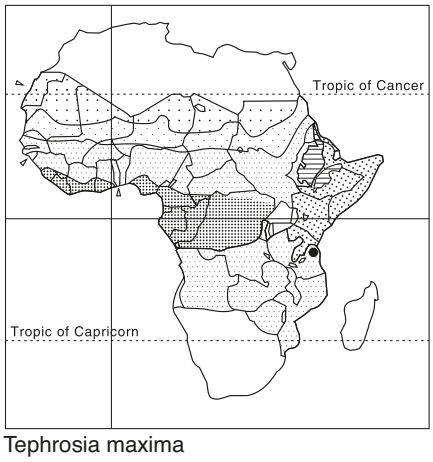
Tephrosia lurida



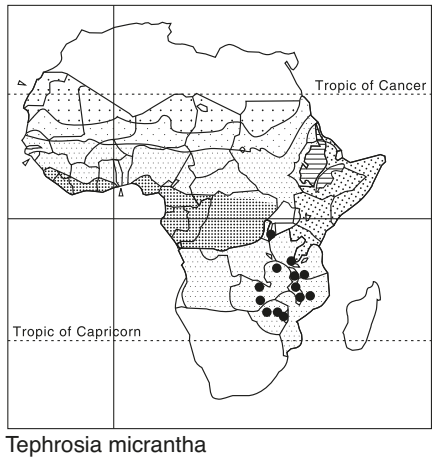
Tephrosia malvina



Tephrosia manikensis



Tephrosia maxima



Tephrosia micrantha

T. oubanguiensis Tiss.
Perennial, creeping plant with ramose, villous stems; leaves 1-foliolate; ripe pod unknown.
Laterite.

T. oxygona Welw. ex Bak. subsp. **oxygona** – Icon.: Engler & Drude, Veg. Erde 9, Afrika 3(1B): 587,1915.
syn.: *Cracca oxygona* (Welw. ex Bak.) O. Kuntze
Erect undershrub 0,3-1,2 m tall, dispersedly and sparingly branched, with glaucous argento-canescent indumentum and habit nearly of *Indigofera;* stems cylindrical, sometimes decumbent, slightly fleshy, brittle, arising from a thick rootstock.
Sandy thickets along river-banks; red-sandy rocks (laterite); to 400 m alt.
Namibia (450-1000 m alt.).
Subsp. **oxygona** comprises 2 vars.
Subsp. **lactea** (Schinz) A. Schreiber in Namibia.

T. paniculata Welw. ex Bak., incl. var. *schizocalyx* (Taub.) J. B. Gillett, but excl. subsp. *holstii* (Taub.) Brummitt (= *T. holstii)*; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 272,1968.
syn.: *T. schizocalyx* Taub.; *T. melanocalyx* Bak. 1897, non Welw. ex Bak. 1871 (= *T. acaciifolia)*; *T. nigrocalyx* Bak. f.; *Cracca paniculata* (Welw. ex Bak.) O. Kuntze; *Tephrosia dimorphophylla* Welw. ex Bak.; *Cracca dimorphophylla* (Welw. ex Bak.) O. Kuntze; *Tephrosia lelyi* Bak. f.
Erect annual or short-lived perennial herb 0,3-3 m tall; much-branched, the ascending branches densely clothed with short spreading grey or fulvous pubescence.
Hillside thickets; grassland; (margins of) swamps; edge of forest gallery; meadows and bush; stony places with tall herbage with *Dolichos elatus;* forest; wooded meadows; brook- and river sides; dambos; 1100-2400 m alt.

(T. paradoxa Brummitt – See **T. stormsii)**.

T. paucijuga Harms; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 327,1968.
Perennial plant with often reddish stems, sparsely strigulose, 30-40 cm tall arising from a perennial, woody rootstock.
More open parts of *Brachystegia, Uapaca* woodland; sandy places; clayey, dry footpath sides; lateritic crest; gravelly soil on hard-pan; edge of woodland, burnt grassland; recently burnt *Brachystegia* thicket; short rough grass; 900 (? and less)-2200 m alt.
Not in Zaire (= *T. laxiflora)*:, specim. Lebrun 9721 (Cronquist in Fl. Congo Belge 5: 106,1954) from Rwanda is *T. stormsii* (syn. *T. paradoxa).*

T. pearsonii Bak. f.
Shrub 0,3-0,6 m tall.
Open glades in forest.
Only known from the type collected ante 1926.
Near *T. huillensis.*

T. pedicellata Bak.
syn.: *T. ilorinensis* J. R. Drumm. ex Bak. f.
Half-woody prostrate, ± perennial plant with annual stems, 0,3 m long or more, diffusely branched, the branches slender, thickly clothed with fine spreading brownish silky hairs.
Rough places; roadsides; sandy-clayey soil; gravelly soil; clayey-stony soil; waste places.
Cape Verde Islands.

T. pentaphylla (Roxb.) G. Don; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 271,1968.
bas.: *Galega pentaphyllia* Roxb.
syn.: *Tephrosia decidua* Steud. ex A. Rich. p. p.; *T. similis* Chiov.; *T. pentaphylla* [Roxb.] Sweet, nom. nud.
Annual or short-lived perennial bushy herb 30-80 cm tall; stems silvery.
Black (cotton) soils; gravelly hillsides; grassland; woodland; 0-1800 m alt.
Arabia; S India. Not in the Flora Iranica area?

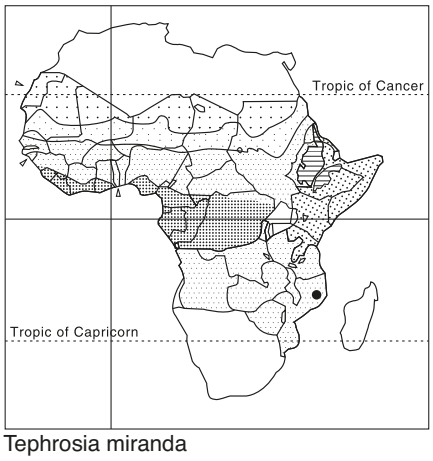
T. platycarpa Guill. & Perr.; Gillett, Kew Bull. 13: 129,1958; not sensu Andrews, Fl. Sudan 2: 238,1952.
syn.: *T. ansellii* Hook. f.
Annual plant; stems firm-herbaceous, branched from the base 30-50 cm or more tall, the branches ascending, slender, thinly appressed-silky.
Sandy meadows; gravelly soils; waste places, roadsides.
São Tomé.
Not in Sudan (= *T. humilis)*.

T. polyphylla (Chiov.) J. B. Gillett, Kew Bull. 13: 123,1958 – Icon.: ibid. 124 (pod).
bas.: *T. nubica* (Boiss.) Bak. var. *polyphylla* Chiov.
Subwoody annual or perennial herb 0,35-1 m tall; stems densely white-tomentose with hairs appressed or spreading to 2 mm long.
Thin bush; dunes; shallow grassy soil over limestone by pan, in *Acacia, Commiphora* open scrub; sometimes common near rivers after rain; red sandy soil, in *Acacia, Commiphora* scrub; often dominant on abandoned cultivations and over-grazed land with *Tephrosia villosa* var. *incana;* 240-1400 m alt.

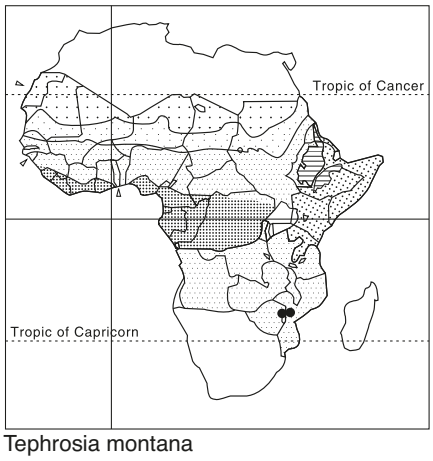
T. polystachya E. Mey., incl. var. *hirta* Harv. and var. *latifolia* Harv.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 233,1968.
syn.: *Cracca polystachya* (E. Mey.) O. Kuntze
Shrub, erect with slender, angular, rib-striate stems, clothed with close or spreading yellowish pubescence 0,6-0,9 m tall.
Margins of mountain forests; old garden near fresh-water lake; basaltic rocks, savanna; (215-800-)1220-1830 m alt.
S. Africa, Swaziland, Botswana.
Comprises 2 groups (see Brummitt l.c. and Fl. Zambes. 3/3: 139, 2007 for details). A taxonomic revision of the whole taxon needed.
Var. **longidens** H. M. L. Forbes reported from S. Africa.
Confused with *T. purpurea.*

T. praecana Brummitt
Shrub or small tree to 4,5 m tall; branches grey or grey-brownish shortly tomentose.
Forest margins; on mountains; 1260-2135 m alt.
Three collections known: 1908, 1944, 1968.
Near *T. festina, T. montana.*

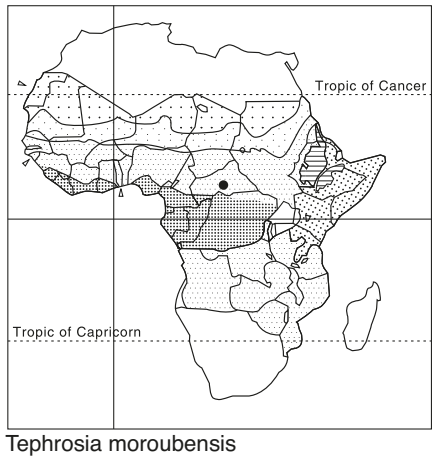
T. pumila (Lam.) Pers.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 258, 1968.
bas.: *Galega pumila* Lam.
syn.: *Tephrosia commersonii* Scott Elliot, nom. illegit.; *T. purpurea* (L.) Pers. var. *pumila* (Lam.) Bak.; *T. vicioides* A. Rich. var. *inflexa* Chiov., p. maj. p.; *T. quartiniana* Cufod. var. *inflexa* (Chiov.) Cufod., nom. invalid. – All of var. **pumila.**



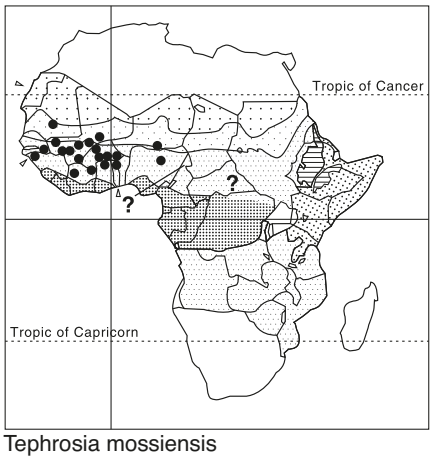
Tephrosia miranda



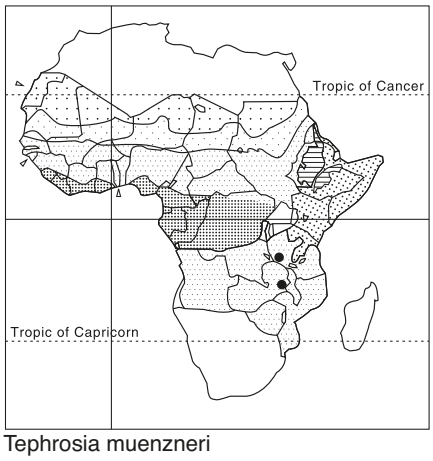
Tephrosia montana



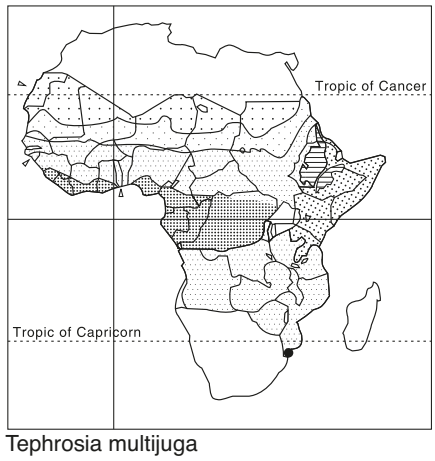
Tephrosia moroubensis



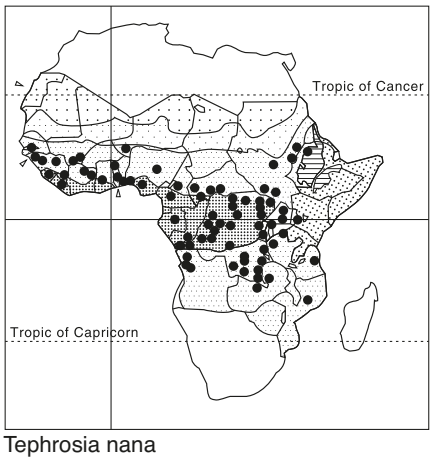
Tephrosia mossiensis



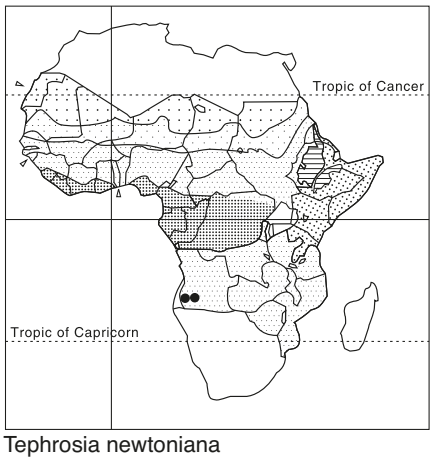
Tephrosia muenzneri



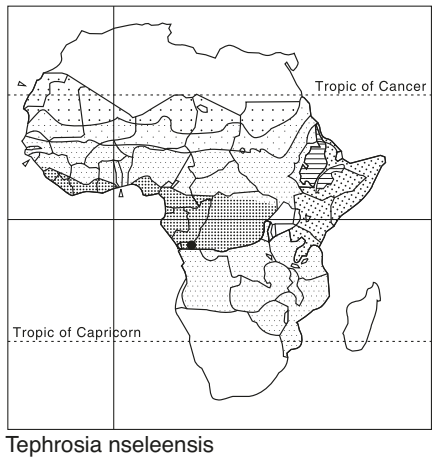
Tephrosia multijuga



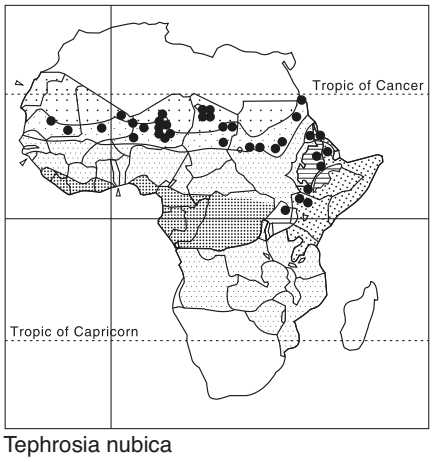
Tephrosia nana



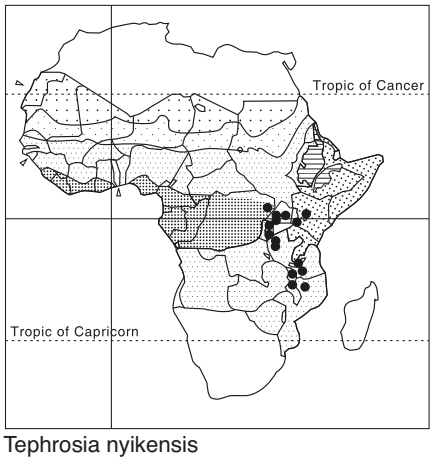
Tephrosia newtoniana



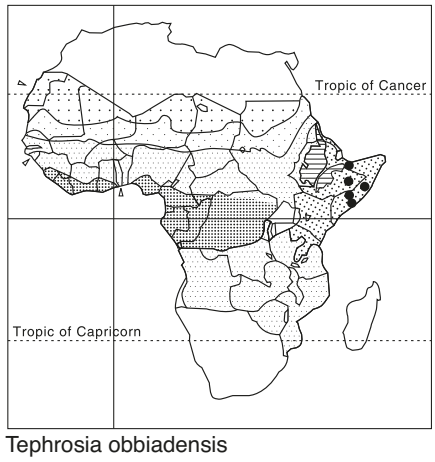
Tephrosia nseleensis



Tephrosia nubica



Tephrosia nyikensis



Tephrosia obbiadensis

TEPHROSIA PUMILA

Annual or short-lived perennial herb ; branches procumbent or straggling c. 50(-80) cm long ; hairs on stems spreading or appressed, sometimes sparse ; sometimes a stiff bush to 50 cm tall.

Short grassland ; *Acacia, Commiphora* bushland ; weed in cultivated and waste land ; bushland and grassland near the sea ; *Echinochloa, Setaria* grassland ; coral cliff ; sandy foreshore ; srcub land near mangrove swamp ; river banks ; on dunes ; rocky outcrop with wet flushes and thin soil with *Selaginella njamnjamensis, Aeollanthus* spp., *Aloe* sp.; 0-2000 m alt.

S. Africa, Botswana ; Aldabra Isl.; Madagascar ; Comoros. – Var. **ciliata** (Craib) Brummitt, from India to Indonesia, ? Mauritius.

Comprises 2 vars. in our area (intermediates occur) : – var. **pumila ;** – var. **aldabrensis** (J. R. Drumm. & Hemsl.) Brummitt, only from coasts.

T. punctata J. B. Gillett ; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 349, 1968.

Annual or short-lived perennial herb 0,5-1,5 m tall ; stems sparingly to profusely branched, closely appressed strigulose.

Coarse grass ; among rocks in deciduous woodland ; *Brachystegia,* miombo woodland ; usually on sandy soils ; 1300-1830 m alt.

Comprises 2 subspp.

T. purpurea (L.) Pers., excl. var. *maxima* (L.) Bak. (= *T. maxima)* and var. *pumila* (Lam.) Bak. (= *T. pumila) ;* Brummitt, Bol. Soc. Brot., Sér. 2, 41: 240, 1968 (with full synonymy).

bas.: *Cracca purpurea* L.

syn.: *Galega purpurea* (L.) L.; *Cracca villosa* ß *purpurea* (L.) Kuntze

Annual or perennial herb ; stems procumbent, ascending or erect 0,6-1,5 m tall, sometimes forming a low bush and becoming woody in the lower parts ; stems thinly pubescent with appressed to spreading hairs or densely white or silvery-grey pubescent and sometimes sericeous.

Grassland ; plantations ; sandy sea- and lake-shores ; old dunes ; coral sand dunes under coconut trees ; sometimes dominant in large patches ; roadsides ; *Kirkia,* mopane, *Combretum* veld ; river sand dunes ; mopane woodland ; sandy-clayey soil ; 0-1700 m alt.

Comprises 6 subspp. one of which with 3 vars. (see Brummitt, l.c.) :

– [subsp. **purpurea**] (syn.: *T. wallichii* Graham ex Fawcett & Rendle ; *T. hamiltonii* J. R. Drumm. ex Gamble) naturalised in Africa, in particular in W. Africa where it is spreading, and in the Americas, W. Indies ; wild from W Pakistan through India, Sri Lanka, Burma, Indochina, Malay Peninsula to Indonesia, and possibly Australia ; also probably native, but possibly introduced, in Madagascar, Mauritius and the Seychelles ;
– subsp. **altissima** Brummitt, a very tall annual in Fl. Zambes. area ;
– subsp. **apollinea** (Delile) Hosni & El-Karemy [bas.: *Galega apollinea* Delile ; syn.: *Tephrosia appolinea* (Delile) Link., excl. var. *subuniflora* A. Terracc. (= *T. subtriflora)*] in Sudan, Egypt ; Arabia, Socotra ; Israel, Jordan, Iran, Pakistan (cf. note in Boulos, Fl. Egypt 1: 318, 1999) ;
– subsp. **canescens** (E. Mey.) Brummitt [bas.: *T. canescens* E. Mey.; syn.: *Cracca canescens* (E. Mey.) O. Kuntze] in Mozambique, S. Africa, on coastal dunes, sands ;
– subsp. **dunensis** Brummitt [syn.: *T. leucoclada* Scott Elliot] on coasts of the Indian Ocean from Somalia to N Mozambique, Madagascar, and of Lake Malawi ;

TEPHROSIA PURPUREA

– subsp. **leptostachya** (DC.) Brummitt (icon.: Boulos, Fl. Egypt 1: 317, 1999) with 3 vars.: – var. **leptostachya** [bas.: *T. leptostachya* DC. syn.: *T. lineata* Schumach. & Thonn.; *T. desertorum* Scheele ; *Cracca leptostachya* (DC.) Rusby] widespread in Tropical Africa ; Botswana, Namibia, S. Africa, Swaziland ; Arabia ; – var. **delagoensis** (H. M. L. Forbes) Brummitt [bas.: *T. delagoensis* H. M. L. Forbes ; syn.: *T. indigofera* Bertol.] in Fl. Zambes. area, Botswana, S. Africa in coastal plains and extending up river valleys ; has the habit of subsp. **purpurea** from Asia ; – var. **pubescens** Bak. [syn.: *T. laurentii* De Wild.; *T. transvaalensis* Hutch. & Burtt Davy in Burtt Davy ; *T. sparsiflora* H. M. L. Forbes], widepread in tropical Africa ; Egypt, Sinai ; Caprivi Strip, Namibia, Botswana, S. Africa ; in disturbed grassy places up to 1500 m alt.

Subsp. **leptostachya** also occurs in Morocco, Algeria, Arabia ; Madagascar ; Comoro Isl.: Mayotte ; probably introduced and naturalised in the Americas, W. Indies.

Intermediates between the infrageneric taxa occur.

The relationships with *T. limpopoensis* J. B. Gillett require further investigations. Plants from the Sahara region may be taxonomically separable (often appear to have the habit of a low bush).

(T. quartiniana Cufod. ex Greuter & Burdet – See **T. uniflora)**.

T. radicans Welw. ex Bak., incl.. var. *rhodesica* Bak. f.

syn.: *Cracca radicans* (Welw. ex Bak.) O. Kuntze

Perennial herb with a stout woody vertical stock and a taproot ; stems copiously branched, slender, prostate, 0,6-1,6 m long, often forming a mat ; hairs spreading to 1,5 mm long. Aspect of a *Medicago.*

Grassland, especially on sand ; open ground, grassy places ; damp meadows ; roadsides, disturbed ground ; 450-1800 alt.

S. Africa, Namibia.

T. reptans Bak.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 283, 1968.

Annual or short-lived perennial plant with the rootstock often becoming woody, with several stout prostrate or decumbent-ascending, straggling, branched stems to 1-2 m long, or with the main stem ± erect with usually decumbent branches from near the base (var. **microfoliata)**; stems with conspicuous, brown, spreading hairs to ± 1mm long (var. **arenicola,** var. **microfoliata)**, or appressed-pubescent to glabrous.

Rocky places ; grassland, veld ; sandy lake shores (var. **arenicola ;** roadside in tsetse clearing in woodland ; solid lava rock with grass cover ; bare sand of dunes ; deep red sand ; 50-2440 m alt.

S. Africa (var. **reptans)**; Madagascar.

Comprises 3 vars.: – var. **reptans** [syn.: *Cracca reptans* (Bak.) O. Kuntze ; *C. kirkii* (Bak.) O. Kuntze ; *Tephrosia kirkii* Bak.; *T. carvalhoi* Taub.; *T. godmaniae* Bak. f. ("godmanae"); *T. granitica* R. Viguier]; – var. **arenicola** Brummitt & J. B. Gillett ; – var. **microfoliata** (P. Lima) Brummitt, in Mozambique.

T. rhodesica Bak. f.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 229, 1968.

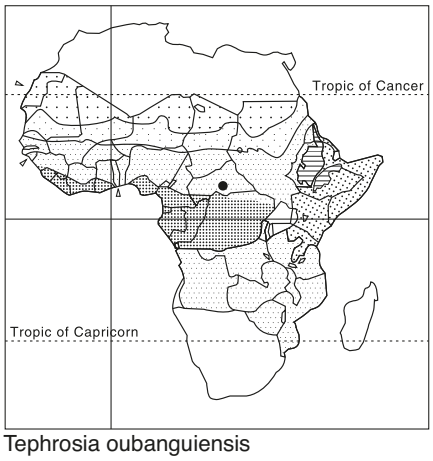
Erect briefly perennial subshrub 0,5-1,5(-2) m tall ; stems grey- or fulvous-tomentose.

Open spots in drier areas on sand or in cultivated areas ; granite kopje ; open forests ; grassland, thicket, woodland, roadsides ; rocky and sandy places, often by rivers (var. **evansii**) ; 350-2100 m alt.

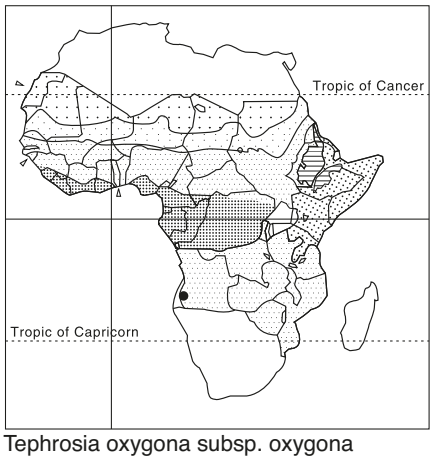
Botswana, S. Africa, Namibia. – Not in Angola.

Comprises 3 vars.

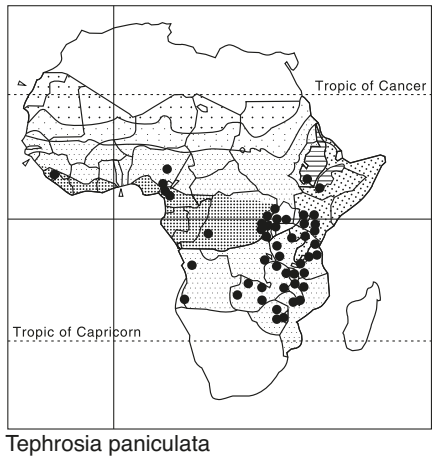
Confused with *T. villosa.*



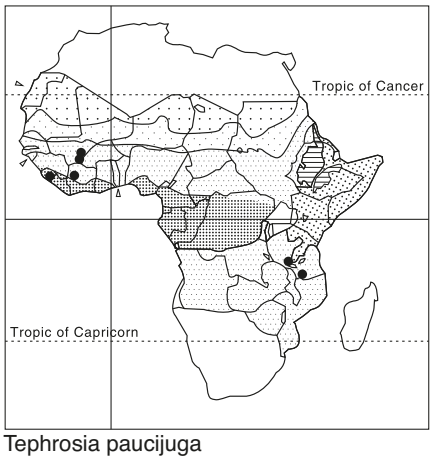
Tephrosia oubanguiensis



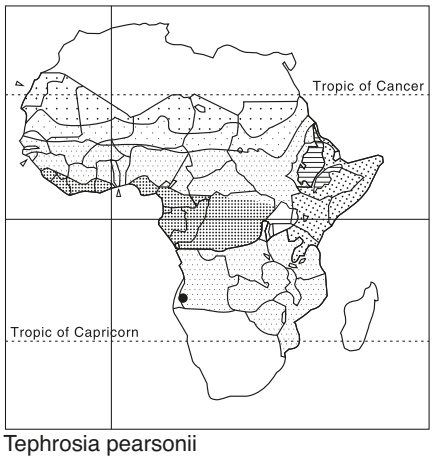
Tephrosia oxygona subsp. oxygona



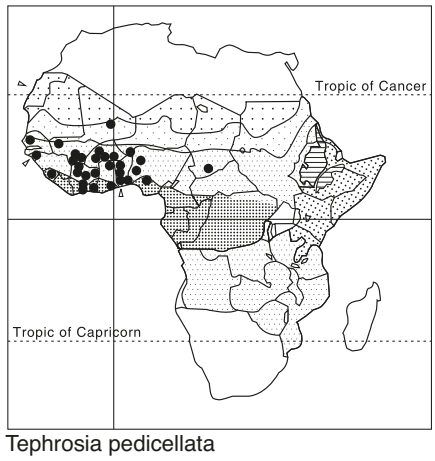
Tephrosia paniculata



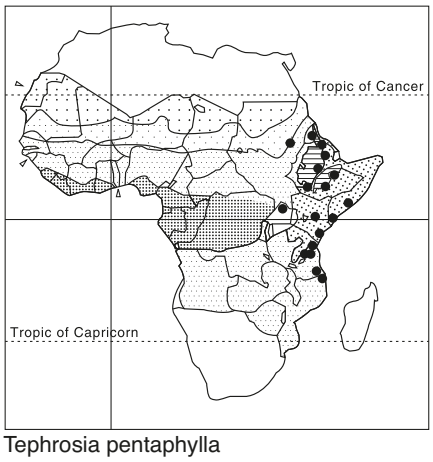
Tephrosia paucijuga



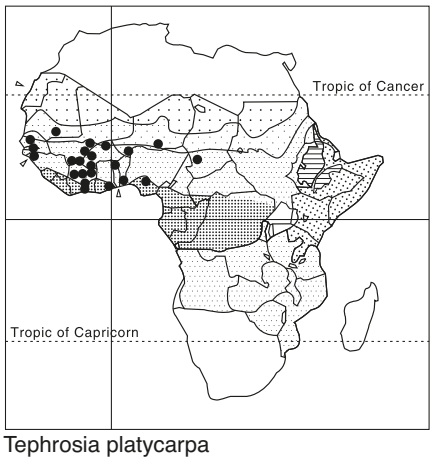
Tephrosia pearsonii



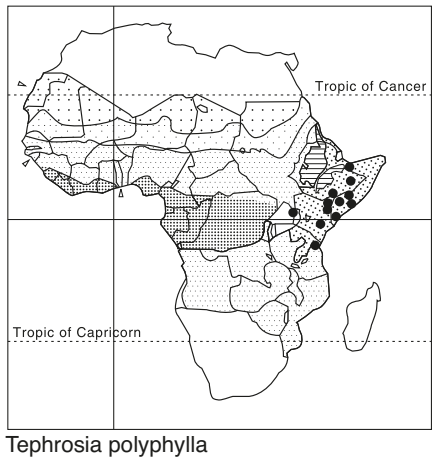
Tephrosia pedicellata



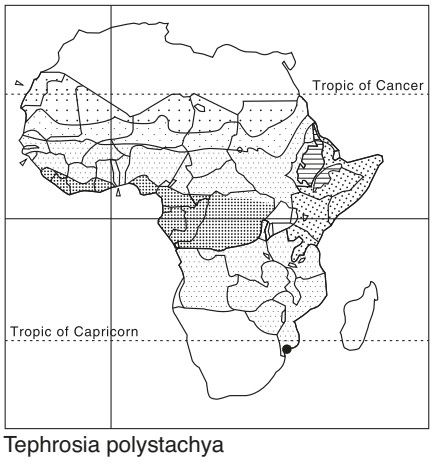
Tephrosia pentaphylla



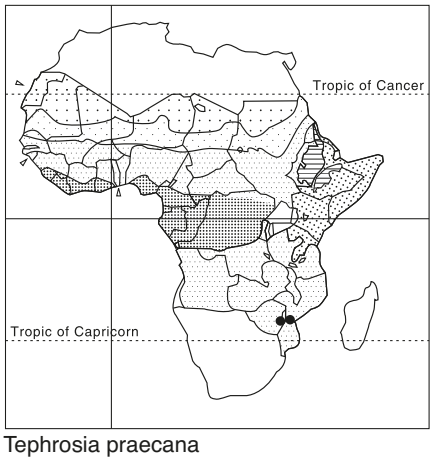
Tephrosia platycarpa



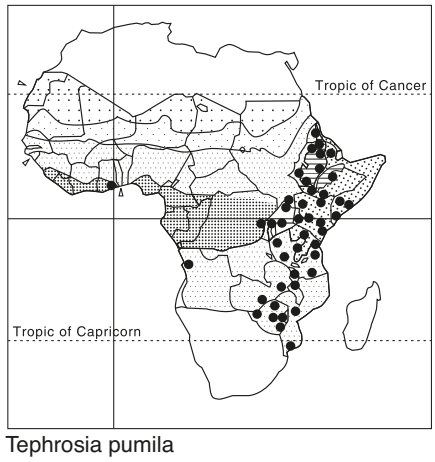
Tephrosia polyphylla



Tephrosia polystachya



Tephrosia praecana



Tephrosia pumila

T. richardsiae J. B. Gillett ; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 267, 1968.

Annual or short-lived perennial shrublet to 1 m tall : stem densely silvery-velvety to grey-brown (subsp. **richardsiae)** or ferrugineous hairy (subsp. **erucifera** Brummitt).

Grassland with trees ; mica mine hill ; rocky hills ; on sandy or stony soil, often in disturbed places ; sometimes plateau woodland ; 550-1700 m alt.

Comprises 2 subspp.

T. rigidula Welw. ex Bak.; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 306, 1968.

syn.: *Cracca rigidula* (Welw. ex Bak.) O. Kuntze ; *C. secunda* (Welw. ex Bak.) O. Kuntze

Annual (? sometimes biennial) herb with robust, erect or prostrate, branching stems ± 1,3-1,5 m tall, mostly 3-4 mm Ø ; stems subglabrous (minutely appressed-pubescent in part), smooth.

In rather bushy pastures with tall herbage ; sandy places ; red clay soil ; 1100-1950 m alt.

Not in E. Africa (= *T. elata)*.

T. ringoetii Bak. f.; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 294, 1968.

Annual herb with a short taproot and branching stem 30-100 cm tall ; stems, at least the lower parts, ± conspicuously clothed with spreading, irregular, usually whitish, geniculate hairs to 2 mm long.

Dry sandy soil in bush country ; rocky hills, damp sand between rocks ; open forest ; *Brachystegia,* miombo woodland ; open grassy places ; mushitu fringe in shade ; at sewage-works, surrounding bush area, loam on laterite ; 1150-1400 m alt.

Resembling *T. stormsii* var. *pilosa.*

T. robinsoniana Brummitt

Shrub ± 1,5 m tall ; young stems appressed- or ascending-grey pubescent ; mature pod unknown.

Rocky hillsides ; 1340-1450 m alt.

Only known from the 2 collections, incl. the type made in 1958.

T. rupicola J. B. Gillett ; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 368, 1968.

Shrub, subwoody, to 1 m tall ; stems densely brown to grey-brown or grey-tomentose ; hairs to 2 mm long, reflexed or spreading or somewhat upwardly appressed.

Granite outcrop ; ? ± 1590 or 1615 m alt.

Comprises 2 subspp.

Know from very few collections.

Near *T. huillensis.*

T. scopulata Thulin

Shrub 0,5-1,5 m tall, broom-like with erect stems ; young stems green, often with brownish longitudinal lines, subglabrous to sparsely appressed pubescent with minute white hairs, glabrescent.

Subcoastal limestone areas, on gravelly wadi bottoms and limestone pediment ; 80-500 m alt.

T. sengaensis Bak. f.; Brummitt, Bol. Soc. Brot., Sér.; 2, 41 : 346, 1968 ; Fl. Zambes. 3/3 : 166-167, 2007 (“senegaensis”).

± Prostrate perennial herb ; indumentum of stems spreading.

Rocks ; 2000-2100 m alt.

T. stormsii De Wild., incl. *T. paradoxa* Brummitt ; Brummitt, Bol. Soc. Brot., Sér. 2, 41 : 297, 303, 1968.

Annual herb with a taproot and rather slender, branched stems (0,4-)0,6-1,4(-1,8) m tall ; stems glabrous or with sparse appressed hairs in parts, or with rather conspicuous grey spreading hairs (var. **pilosa)**.

Cultivated miombo ; *Afzelia* woodland near lake shore ; ant-heap in closed *Brachystegia spiciformis, Julbernardia, Combretum, Pterocarpus, Strychnos* woodland ; tall grassland ; *Brachystegia, Uapaca* woodland ; cultivation on red loam ; granite rocks ; sandy red soil ; sand dunes ; sandstone, etc.; and other woodland types ; also a weed ; 0-1830 m alt.

Comprises 2 vars.: – var. **pilosa** Brummitt resembling *T. ringoetii* and *T. euprepes.*

T. paradoxa is here included in *T. stormsii* (cf. Enum. 2 : 120, 1992). They are sympatric over a wide area, and are often difficult to distinguish in the Fl. Trop. E. Afr. area, although they seem to be distinct entities in the Fl. Zambes. area.

T. paucijuga sensu Cronquist in Fl. Congo Belge 5 : 106, 1954, specim. Lebrun 9721 from Rwanda is *(T. paradoxa) T. stormsii.*

T. subpraecox Cronq.

Perennial plant with a stout woody rhizome ; flowering at the time of the first-leaves growth stage ; stems 20-40 cm long, densely puberulous.

River side ; 1700 m alt.

T. subtriflora Bak.; Gillett, Kew Bull. 13 : 112, 1958 ; icon.: o.c.: 113.

syn.: *T. cordofana* Hochst. in sched.; *T. pauciflora* Graham ex Bak. p. max. parte ; *T. encoptosperma* Schweinf.; *T. multiflora* Blatter & Hallberg ; *T. apollinea* (Del.) Link var. *subuniflora* A. Terracc.

Prostrate or ascending annual or short-lived perennial herb 45-60 cm tall, with grey-silky sparse and appressed or dense and spreading indumentum, dichotomously branched from the base ; branches firm.

Acacia, Commiphora woodland or bushland ; a weed of cultivation ; dunes ; rocky slope over an aguelman ; scree over a deeply embanked wadi and guelta ; 400-1500 m alt.

Greatest variability in NE tropical Africa (indumentum, and size, number and shape of the leaflets : from a young plant with the first leaf often 1-foliolate and the next ones few-foliolate, to an adult plant with 13-foliolate leaves).

Known from scattered localities in dry areas : Cape Verde Islands to Yemen, Saudi Arabia, Socotra, W Pakistan, Burma (a single specimen), India (Rajasthan) ; Madagascar (collected twice).

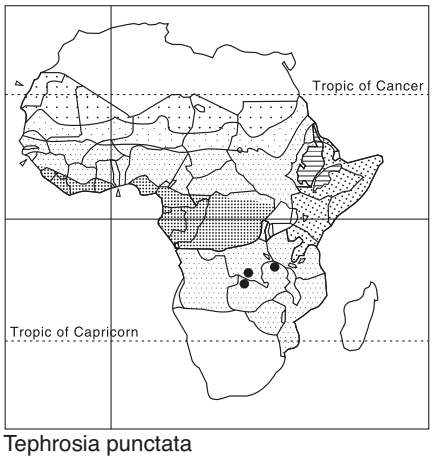
Confused with *T. uniflora.*

T. sylitroides Bak.

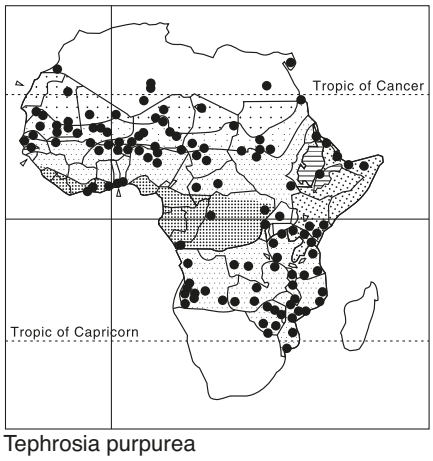
Herb with erect, subangular branches and a close overall resemblance to *Ptycholobium biflorum* subsp. *biflorum* except the arcuate pod, 6-7- seeded, ± 3 cm × ± 4 mm ; flowers pink ; leaves 1-foliolate, linear-lanceolate, 4-6 cm × 2-3,5 mm, petiole 2-3 mm long.

Common among the undergrowth in fairly open forest.

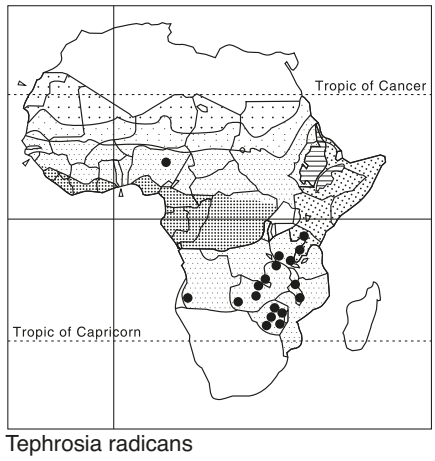
Only known from the type collected ante 1926.



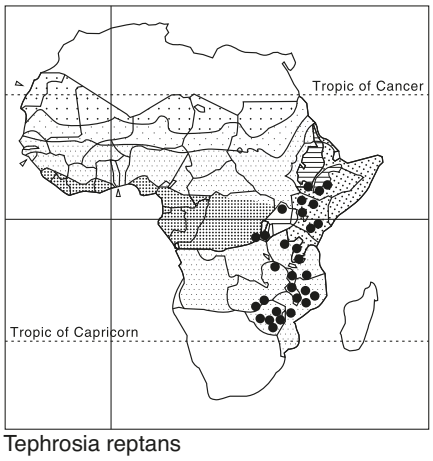
Tephrosia punctata



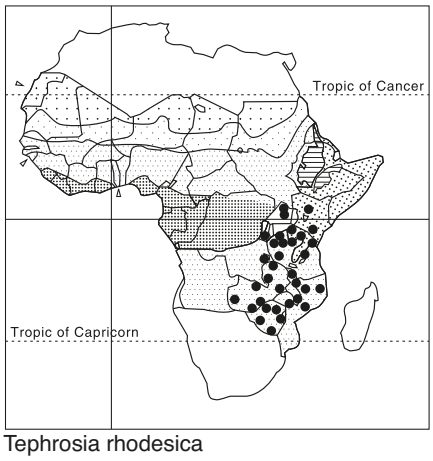
Tephrosia purpurea



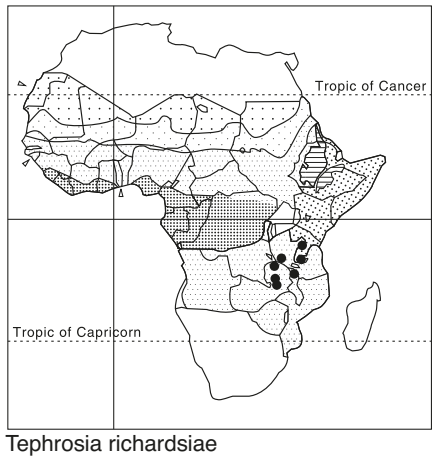
Tephrosia radicans



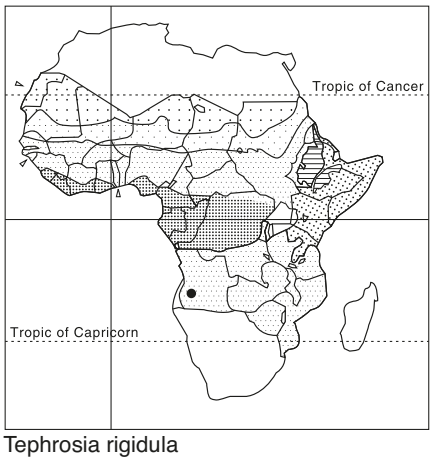
Tephrosia reptans



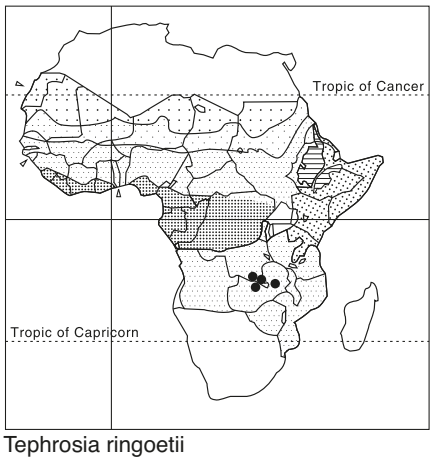
Tephrosia rhodesica



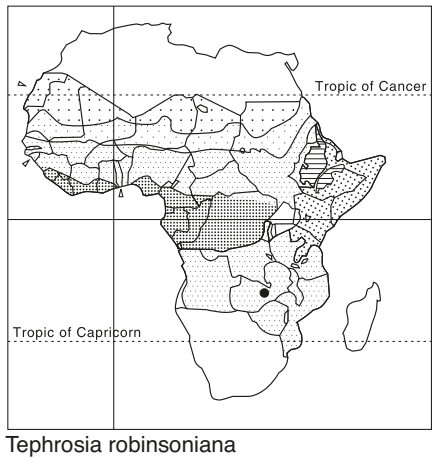
Tephrosia richardsiae



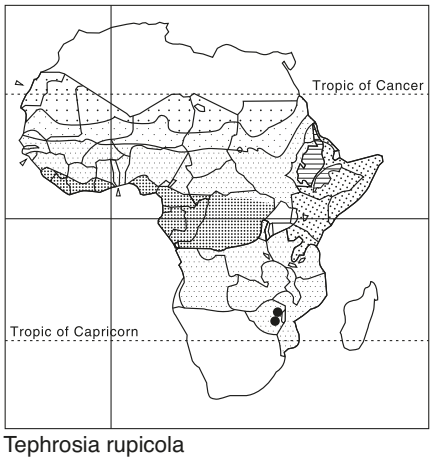
Tephrosia rigidula



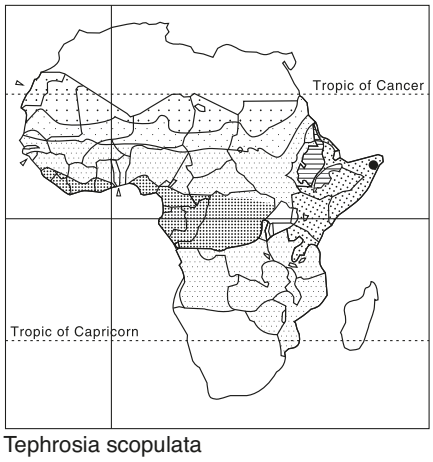
Tephrosia ringoetii



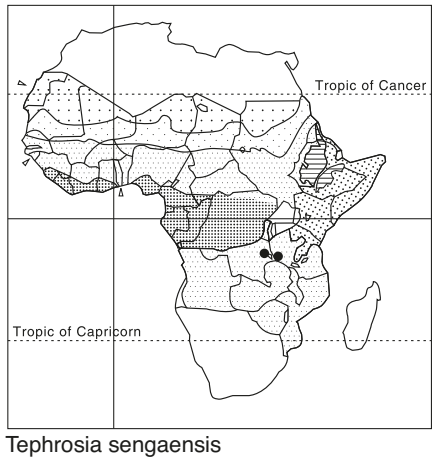
Tephrosia robinsoniana



Tephrosia rupicola



Tephrosia scopulata



Tephrosia sengaensis

T. sylviae Berhaut

Annual or ± perennial herb 50-60 cm tall or more; leaflets silky-white appressed pubescent beneath.

Bowal; sandstone.

Near *T. letestui.*

T. tanganicensis De Wild. ("tanganyikensis" in Lock, Legumes Afr. Checklist: 384, 1989).

Short-lived perennial herb, or robust single-stemmed annual, 0,5-2 m tall from a taproot; shortly branched above; indumentum on stems dense, spreading, brownish.

Brachystegia, miombo woodland; 700-1450 m alt.

T. tundavalensis Bamps

syn.: *T. interrupta* Hochst. & Steud. ex Engl. subsp. *elongatiflora* sensu Torre, Consp. Fl. Angol. 3: 156, 1962, non Harms ex J. B. Gillett (= *T. interrupta* subsp. *elongatiflora)*.

Erect shrub 0,8-3 m tall; young stems angular, densely appressed-pubescent.

Clearing; meadow; savanna; reddish soil; open xerophytic forest; crevices in rocky outcrop at torrent margin; ± 1700-2200 m alt.

T. uniflora Pers. subsp. **uniflora**, incl. *T. quartiniana* Cufod. ex Greuter & Burdet; Gillett, Kew Bull. 13: 114, 1958; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 278, 1968 – Icon.: Fl. Zambes. 3/3: 132, 2007.

syn.: Enum. 2: 120, 1992; *T. hirsuta* Schumach. & Thonn.; *T. anthylloides* Hochst. ex Webb; *Cracca anthylloides* (Hochst. ex Webb) O. Kuntze ("anthylodes"); *Tephrosia uniflora* var. *parvifolia* Bak. f.; *T. transjubensis* Chiov.

Softly woody, branching, semi-erect annual or short-lived perennial herb 30-130 cm tall; stems silky pilose with rather spreading hairs.

Acacia, Commiphora bushland and dry grassland; often in rocky places and outcrops; thalweg; waste places; banded vegetation; sand overlying sandstone; wooded alignment; sand of dunes; sahelian humid soils; open disturbed ground; 0-1500 m alt.

Cape Verde Isl.; S. Africa, Botswana, Namibia; SE Egypt; Arabia.

Subsp. **petrosa** (Blatt. & Hallb.) J. B. Gillett & Ali (bas.: *T. petrosa* Blatt. & Hallb.) with shorter pods, fewer seeds, leaflets in 1-2 pairs, occurs in Saudi Arabia, Socotra, Yemen, W Pakistan, NW India. Also in SE Egypt, NE Sudan, Ethiopia, Somalia according to L. Boulos, Fl. Egypt 1: 316, 1999.

T. quartiniana s. str. [not incl. var. *inflexa* (Chiov.) Cufod. = *T. pumila*] is here enclosed in **T. uniflora** subsp. **uniflora** following Thulin in Fl. Somalia 1: 399-400, 1993. In Ethiopia and Somalia intermediates between the two taxa occur. However, in Egypt they seem to represent two distinct entities (Boulos, l.c.; icon.: ibid.: 317, *T. quartiniana)*.

The specific epithet "uniflora" is probably based on a misinterpretation; this species is no exception to the general rule that there are two or more flowers (but sometimes flowers solitary) at each axil or node in *Tephrosia.*

T. verdickii De Wild.

syn.: *T. aurantiaca* Harms subsp. *verdickii* (De Wild.) J. Dewit

Perennial plant with woody base probably a thick rhizome; stems to 80 cm tall, puberulous to strigose-puberulous or villose-puberulous; ripe pod unknown.

Grassy savanna.

T. villosa (L.) Pers.; Brummitt, Bol. Soc. Brot. Sér. 2, 41: 224, 1967; Gillett, Kew Bull.13: 121, 1958; non *T. villosa* (Michx.) Pers. – Icon.: Fl. Zambes. 3/3: 134, 2007.

bas.: *Cracca villosa* L.

syn.: *Galega villosa* (L.) L.; *Tephrosia incana* (Roxb.) Wight; *T. barba-jovis* (Burm. f.) Cufod. non rite publ.

subsp. **ehrenbergiana** (Schweinf.) Brummitt

syn.: *T. villosa* (L.) Pers. var. *incana* sensu Torre in Consp. Fl. Angol. 3: 161, 1962, non (Roxb.) Bak.

Annual or briefly perennial bushy herb 0,3-1,4 m tall; stems usually with spreading to deflexed brown or brownish-grey hairs, but sometimes with appressed whitish hairs (var. **daviesii** Brummitt).

Open places in *Acacia, Commiphora* bushland or woodland; mopane- *Acacia* veld; shallow soil over granite; sandy soil at side of road; mopane, *Commiphora, Grewia, Combretum* association on basalt; gravelly basalt soil in sparse mopane bush; grassy places around stagnant pool full in summer and drying up in winter; disturbed ground; 0-1500 m alt.

S Egypt; S. Africa, Namibia; Madagascar; S Arabia.

Comprises 2 vars. (intermediates occur).

Subsp. **villosa** with much smaller flowers and fruits occur in W. Pakistan; India; Sri Lanka; Indochina; Java. – Sometimes introduced as a fodder plant.

T. vogelii Hook. f.

syn.: *T. periculosa* Bak.; *T. megalantha* Micheli ex T. Durand & De Wild.; *T. inebrians* Welw., nom. nud.; *Cracca vogelii* (Hook. f.) O. Kuntze

Softly woody branching perennial herb 1-4 m tall, bushy; stem tomentose with both short and long white or fulvous hairs.

Grassland; forest margins; waste ground; old cultivations; fallows; secondary formations; usually in or near cultivated ground; 0-2100 m alt.

Variable in flower colour: red or purple common in W Africa, white in E Africa.

Geographical origin uncertain. Distributed in tropical Africa from Senegal – Sierra Leone to Ethiopia and southwards to Angola (native?), S. Africa; Comoro Isl.; Madagascar; Bioko/Fernando Poo; also in Asia from Assam to Indonesia.

Extensively cultivated (fish poison, ornamental), and naturalised. Easy to propagate by seed.

Not mapped: the extent of its native area blurred.

T. whyteana Bak. f.; Brummitt, Bol. Soc. Brot., Sér. 2, 41: 360, 1968.

Shrub to 2-6 m tall; young stems often with long villous brown hairs; stipules and bracts caducous (not so in *T. aequilata)*.

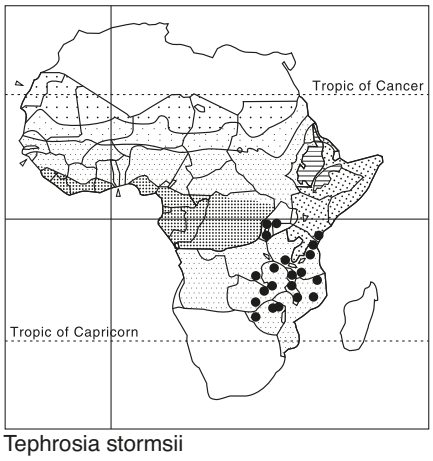
Forest regrowth and margins; rocky slopes; (900-)1615-1950 m alt.

Comprises 2 subspp. Subsp. **gemina** Brummitt known only from the type collected in 1944, Gurué Mts, Mozambique).

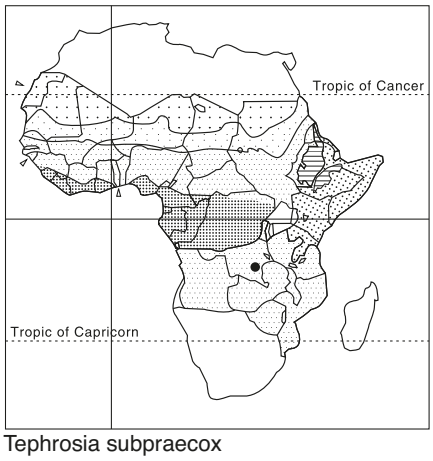
Very similar to *T. aequilata* occurring in the same area.

T. zambiana Brummitt, Bol. Soc. Brot., Sér. 2, 41: 382, 1968.

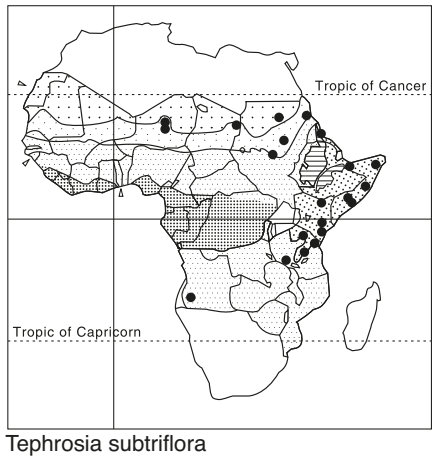
Shrub with simple herbaceous unbranched stems to 35 cm tall, dense subsericeous white-appressed pubescent; leaves rarely 1-foliolate; pod and seeds unknown.



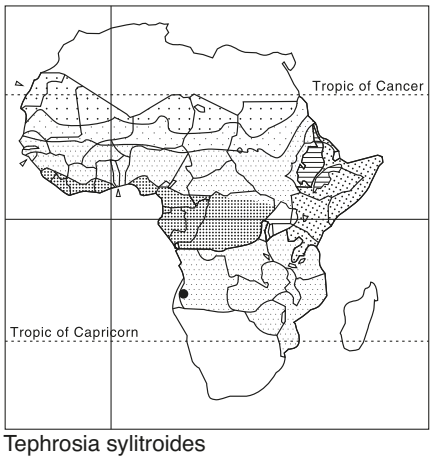
Tephrosia stormsii



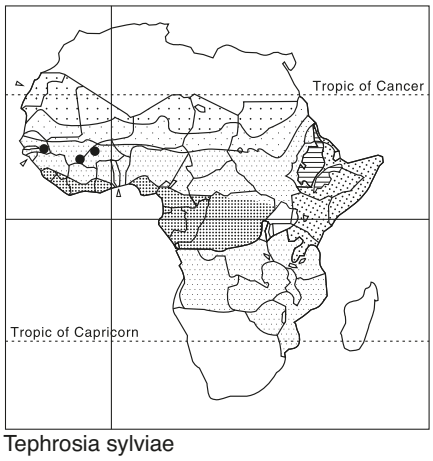
Tephrosia subpraecox



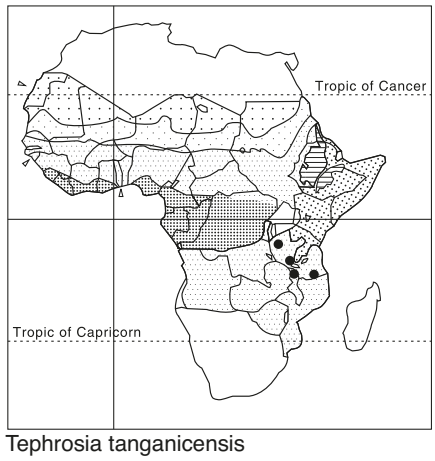
Tephrosia subtriflora



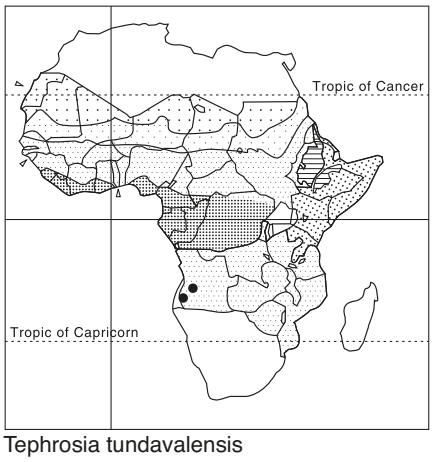
Tephrosia sylitroides



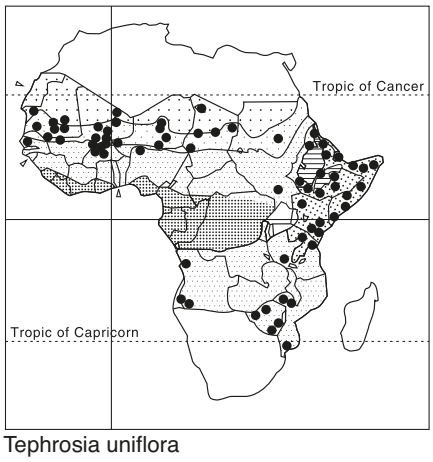
Tephrosia sylviae



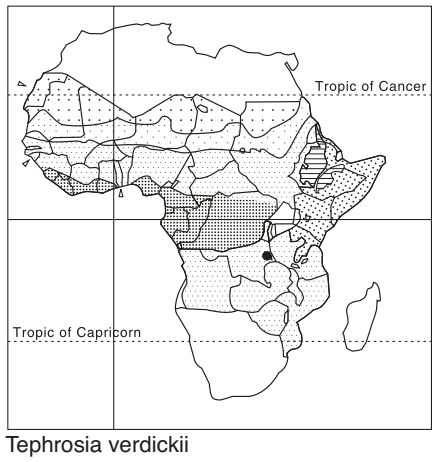
Tephrosia tanganicensis



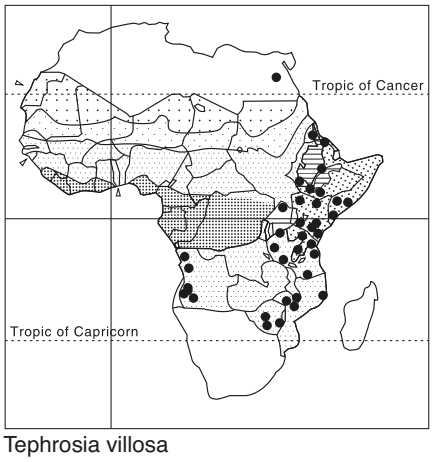
Tephrosia tundavalensis



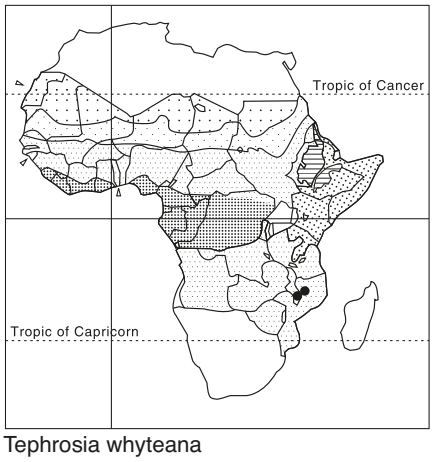
Tephrosia uniflora



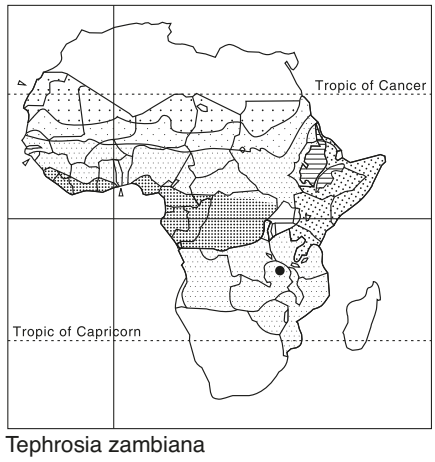
Tephrosia verdickii



Tephrosia villosa



Tephrosia whyteana



Tephrosia zambiana

TEPHROSIA ZAMBIANA

Miombo woodland.
Only known from the type collected in 1960.
Similar to *T. manikensis ;* confused with *T. dasyphylla.*

T. zoutpansbergensis Bremek.
Shrub with erect, densely sericeous pubescent stems 0,3-2 m tall.
Sandy places ; rocky outcrops (to 885 m alt. in S. Africa).
N S. Africa, Botswana.

SYNONYMS (cf. also Enum. 2 : 121, 1992) :

Tephrosia aldabrensis J. R. Drummond & Hemsley = **Tephrosia pumila** var.
angustissima Engl. = **T. lurida** var. **lurida**
ansellii Hook. f. = **T. platycarpa**
anthylloides Hochst. ex Webb = **T. uniflora** subsp. **uniflora**
apollinea (Delile) Link = **T. purpurea** subsp.
var. *subuniflora* A. Terracc. = **T. subtriflora**
atroviolacea Bak. f. = **T. interrupta** subsp. **mildbraedii**
aurantiaca Harms
fa. *albescens* J. Dewit = **T. hockii** subsp. **hockii**
fa. *cinerea* J. Dewit = **T. hockii** subsp. **hockii**
fa. *fulvescens* J. Dewit = **T. hockii** subsp. **hockii**
subsp. *hirsutostyla* J. Dewit = **T. hockii** subsp.
subsp. *hockii* (De Wild.) J. Dewit = **T. hockii**
var. *brevifolia* J. Dewit = **T. hockii** subsp. **hockii**
var. *longifolia* J. Dewit = **T. subpraecox**
subsp. *lutea* (R. E. Fr.) J. Dewit = **T. hockii** subsp. **hockii**
aurantiaca Young = **T. elongata** var. **lasiocaulos**
barba-jovis (Burm. f.) Cufod. = **T. villosa**
barbigera Bak. = **T. nana**
var. *bakeriana* (Hiern) Bak. f. = **T. nana**
var. *subglabra* Bak. f. = **T. nana**
bequaertii De Wild. = **T. elata** subsp. **elata** var. **elata**
boranensis Chiov. = **T. hildebrandtii**
brunnea Bak. = **T. dichroocarpa**
burttii Bak. f. = **T. argyrotricha**
butayei De Wild. & Th. Durand = **T. dasyphylla** subsp.
canescens (E. Mey.) Brummitt = **T. purpurea** subsp.
capensis (Jacq.) Pers. var. *angustifolia* E. Mey. = **T. multijuga**
capensis sensu Cronquist 1954 = **T. malvina**
capillipes Welw. ex Bak. = **T. dregeana**
carvalhoi Taub. = **T. reptans** var. **reptans**
commersonii Scott Elliot = **T. pumila**
concinna Bak. = **T. bracteolata**
congestiflora Harms = **T. nyikensis** subsp. **victoriensis**
contorta N. E. Br. = **Ptycholobium**
cordofana Hochst. = **Tephrosia subtriflora**
coriacea Benth. = **T. elongata** var. **elongata**
damarensis Engl. = **T. dregeana** var. **dregeana**

TEPHROSIA

dasyphylla sensu Cronquist 1954 p.p. = **T. argyrolampra**
decidua Steud. ex A. Rich. p.p. = **T. pentaphylla**
decorticans Taub. = **T. dura**
delagoensis H. M. L. Forbes = **T. purpurea** subsp. **leptostachya** var.
delicata Bak. f. = **T. decora**
desertorum Scheele = **T. purpurea** subsp. **leptostachya** var. **leptostachya**
digitata DC. = **T. lupiniflora**
dimorphophylla Welw. ex Bak. = **T. paniculata**
dinteri Schinz = **T. dregeana**
discolor E. Mey. = **T. linearis**
dissitiflora Bak. = **T. elongata** var. **elongata**
doggettii Bak. f. = **T. interrupta** subsp. **mildbraedii**
dowsonii Bak. f. = **T. lurida** var. **lurida**
ehrenbergiana Schweinf. = **T. villosa** subsp.
ehrenbergiana sensu Forbes = **T. rhodesica** var. **rhodesica**
elongata Hook. f. = **T. bracteolata**
elongata E. Mey. var. *glabra* Sond. = **T. elongata** var. **elongata**
var. *pubescens* Sond. = **T. elongata** var. **elongata**
elongatiflora Harms = **T. interrupta** subsp.
emarginatofoliolata De Wild. = **T. elata** subsp. **heckmanniana** var. **heckmanniana**
encoptosperma Schweinf. = **T. subtriflora**
ensifolia Harv. = **T. elongata** var. **elongata**
eriosemoides Oliv. = **T. paniculata**
evansii Hutch. & Burtt Davy = **T. rhodesica** var.
fasciculata Hook. f. = **T. bracteolata**
flexuosa G. Don = **T. platycarpa**
franchetii Hutch. & E. A. Bruce = **T. heterophylla**
godmaniae Bak. f. = **T. reptans** var. **reptans**
gossweileri Bak. f. = **T. chisumpae**
graminifolia Chiov.= **T. subtriflora**
granitica R. Viguier = **T. reptans** var. **reptans**
hamiltonii J. R. Drumm. ex Gamble = **T. purpurea** subsp. **purpurea**
heckmanniana Harms = **T. elata** subsp.
hirsuta Schumach. & Thonn. = **T. uniflora** subsp. **uniflora**
humilis var. *major* Bak. f. = **T. nana**
hypargyrea Harms = **T. cephalantha** var. **decumbens**
ilorinensis J. R. Drumm. ex Bak. f. = **T. pedicellata**
incana (Roxb.) Wight = **T. villosa**
incarnata sensu Brummitt 1968 p. p. quoad specim. mossamb. = **T. brummittii**
incarnata Brummitt p. p. = **T. glomeruliflora** subsp. **meisneri**
indigofera Bertol. = **T. purpurea** subsp. **leptostachya** var. **delagoensis**
inebrians Welw. = **T. vogelii**
interrupta Hochst. & Steud. ex Engl. subsp. *elongatiflora* sensu Torre = **T. tundavalensis**
iringae sensu Cronquist p. p. = **T. reptans**

jelfiae Bak. f. = **T. ringoetii**
junodii De Wild. = **T. forbesii** subsp. **forbesii**
kasikiensis sensu Cronquist p. p. = **T. punctata**
kassneri Bak. f. = **T. holstii**
kirkii Bak. = **T. reptans** var. **reptans**
kotschyana Hochst. = **T. bracteolata**
laevigata Welw. ex Bak. = **T. lupinifolia**
lateritia Merxm. = **T. decora**
laurentii De Wild. = **T. purpurea** subsp. **leptostachya** var. **pubescens**
lelyi Bak. f. = **T. paniculata**
leptostachya DC. = **T. purpurea** subsp.
lessertioides Bak. = **T. curvata**
leucoclada Scott Elliot = **T. purpurea** subsp. **dunensis**
lineata Schumach. & Thonn. = **T. purpurea** subsp. **leptostachya** var. **leptostachya**
longana Harms = **T. coronilloides**
longipes Meisn. var. *lurida* (Sond.) J. B. Gillett p. p. = **T. laxiflora, T. lurida**
var. *ringoetii* (Bak. f.) J. B. Gillett = **T. ringoetii**
luembensis De Wild. = **T. dasyphylla** subsp. **dasyphylla**
lurida sensu R. E. Fr., non Sond. = **T. laxiflora**
lutea R. E. Fr. = **T. hockii** subsp. **hockii**
mbogaensis De Wild. = **T. elata** subsp. **elata** var. **elata**
megalantha Micheli ex T. Durand & De Wild. = **T. vogelii**
meisneri Hutch. & Burtt Davy = **T. glomeruliflora** subsp.
melanocalyx Welw. ex Bak. 1871 = **T. acaciifolia**
melanocalyx Bak. 1897 = **T. paniculata**
mildbraedii Harms = **T. interrupta** subsp.
mossambicensis Schinz = **T. uniflora** subsp. **uniflora**
multiflora Blatter & Hallberg = **T. subtriflora**
multinervis Bak. f. = **T. elata** subsp. **heckmanniana**
nigerica Bak. f. = **T. bracteolata**
nigrocalyx Bak. f. = **T. paniculata**
nubica (Boiss.) Bak. var. *polyphylla* Chiov. = **T. polyphylla**
nyasae Bak. f. = **T. aequilata**
nyikensis Bak. p. p. = **T. interrupta** subsp. **mildbraedii**
obcordata (Lam. ex Poir.) DC. = **Requienia**
orientalis Bak. f. = **Tephrosia hildebrandtii**
otaviensis Dinter = **T. caerulea** subsp. **otaviensis**
pallens (Ait.) Pers. var. *angolensis* Bak. f. = **T. coronilloides**
paniculata Welw. ex Bak. subsp. *holstii* (Taub.) Brummitt = **T. holstii**
paradoxa Brummitt = **T. stormsii**
pauciflora Graham ex Bak. f. p.p. = **T. subtriflora**
paucijuga sensu Cronquist p. p. = **T. laxiflora**
periculosa Bak. = **T. vogelii**
petersiana Klotzsch = **Mundulea sericea** subsp. **sericea**
petrosa Blatt. & Hallb. = **Tephrosia uniflora** subsp.
platycarpa sensu Fl. W. Trop. Afr., Ed. 2, p.p. = **T. humilis**
plicata Oliv. = **Ptycholobium**
polysperma Bak. = **Tephrosia nana**
polystachyoides Bak. f. = **T. rhodesica** var.
preussii Taub. = **T. paniculata**

pseudolongipes Bak. f. = **T. longipes** subsp. **longipes** var. **longipes**
pseudosphaerosperma Schinz = **Requienia**
pulchella Hook. f. = **Tephrosia linearis**
pumila (Lam.) Pers. subsp. *aldabrensis* (J. R. Drumm. & Hemsl.) Bosman & de Haas = **T. pumila** var. **aldabrensis**
purpurea (L.) Pers. var. *maxima* (L.) Bak. = **T. maxima**
var. *pumila* (Lam.) Bak. = **T. pumila**
quartiniana Cufod. ex Greuter & Burdet = **T. uniflora**
quartiniana var. *inflexa* (Chiov.) Cufod. = **T. pumila**
rensburgii Verdc. = **T. radicans**
rhizomatosa De Wild. = **T. hockii** subsp. **hockii**
rigida Bak. = **T. elata** subsp. **elata** var. **elata**
rivae Harms = **T. holstii**
rutenbergiana Vatke = **T. linearis**
salicifolia Schinz = **T. acaciifolia**
sambesiaca Taub. = **T. elongata** var. **elongata**
schizocalyx Taub. = **T. paniculata**
schweinfurthii Deflers = **T. heterophylla**
secunda Welw. ex Bak. = **T. rigidula**
seminuda Bojer ex Bak. = **T. linearis**
senticosa sensu Cufod. = **T. pentaphylla**
sericea Bak. = **Dolichos kilimandscharicus** subsp. **kilimandscharicus** var. **kilimandscharicus**
similis Chiov. = **Tephrosia pentaphylla**
simplicifolia Franch. = **T. heterophylla**
simplicifolia sensu Berhaut = **T. berhautiana**
sparsiflora H. M. L. Forbes = **T. purpurea** subsp. **leptostachya** var. **pubescens**
sphaerosperma (DC.) Bak. = **Requienia**
stormsii sensu Cronquist p. p. = **Tephrosia ringoetii**
subalpina A. Chev. p. p. = **Dolichos dinklagei, D. tonkouiensis**
suberosa DC. = **Mundulea sericea**
subfalcato-stipulata De Wild. = **Tephrosia dasyphylla** subsp. **dasyphylla**
sulphurea Chiov. = **T. subtriflora**
swynnertonii Bak. f. = **T. longipes** subsp.
transjubensis Chiov. = **T. uniflora** subsp. **uniflora**
transvaalensis Hutch. & Burtt Davy = **T. purpurea** subsp. **leptostachya** var. **pubescens**
tzaneensis H. M. L. Forbes = **T. elongata** var. **tzaneensis**
uniflora Pers. var. *parvifolia* Bak. f. = **T. uniflora** subsp. **uniflora**
ustulata Taub. ex Harms = **T. emeroides**
vicioides A. Rich. = **T. uniflora** subsp. **uniflora**
var. *inflexa* Chiov. p. p. = **T. pumila**
villosa (L.) Pers. var. *incana* sensu Torre = **T. villosa** subsp. **ehrenbergiana**
wallichii Graham ex Fawcett & Rendle = **T. purpurea** subsp. **purpurea**
wittei Bak. f. = **T. curvata**
woodii Burtt Davy = **T. multijuga**
youngii Torre = **T. dasyphylla** subsp.
zombensis Bak. = **T. aequilata**

TERAMNUS / *5*

Pantropical genus easily recognised by its very small whitish flowers drying brick-red and its slender pods with an upturned, hooked beak (Du Puy & al., Legum. Madag.: 547-551, 2002); c. 8 ill-defined, mostly climbing species poorly separated on traditional taxonomic characters alone (B. Mackinder, Fl. Zambes. 3/5 : 49-54, 2001). Pods and seeds are important for identification.

Teramnus buettneri (Harms) Bak. f.

bas.: *Glycine buettneri* Harms

Erect subshrub to c. 1,5 m tall; stems often angular, rusty-hairy; leaflets densely felted or velvety beneath; pod densely covered with ± spreading rusty hairs.

Savanna.

Related to *T. micans* and *T. uncinatus* subsp. *ringoetii.*

T. labialis (L. f.) Sprengel – Icon.: Du Puy, Legum. Madag.: 549, 2002 (subsp. **labialis)**; Thulin, Fl. Somal. 1: 429, 1993 (subsp. **arabicus)**.

bas.: *Glycine labialis* L. f.

Perennial climbing, trailing or prostrate herb with angled slender yellowish-hairy stems 0,3-3 m long arising from a thickened rootstock; flowers white pink or purplish.

Secondary forest, riverine forest, evergreen forest; (rocky) grassland, grassland with scattered trees, bushland; cultivations, disturbed places; 600-2650 m alt. (subsp. **labialis)**. – Grassland, woodland, scrub, bushland grassland with scattered trees, forest clearings; edges of rice fields, inundated places; 0-1250 m (subsp. **arabicus)**.

Very variable species : leaflets glabrous to densely hairy; also variable in width of pod, aspect of seeds (surface smooth, brick-red or brown in subsp. **labialis,** surface granular and matt dark brown in subsp. **arabicus)**.

Cape Verde Isl.; S. Tomé, Annobon, Principe; S. Africa, Swaziland; Madagascar, Mauritius, Réunion, Seychelles, Comoros; Arabia; India to Malesia, Indo-China, Philippines, New Guinea, Australasia; Caribbean, Guiana.

Comprises 2 subspp., and subsp. **labialis** with 4 vars. linked with each other.

– Subsp. **arabicus** Verdc. [syn.: *Glycine senegalensis* DC.].
– Subsp. **labialis** – var. **abyssinicus** (Hochst. ex A. Rich.) Verdc. (3 forms recognized in Fl. Trop. E. Afr., Legum. 4, Papil. 2 : 535, 537, 1971); [bas.: *Glycine abyssinicus* Hochst. ex A. Rich.; syn.: *Teramnus axilliflorus* sensu Hauman in Fl. Congo Belge 6 : 105, 1954, p.p. non (Kotschy) Bak. f.; *T. repens* sensu Hauman Fl. Congo Belge 6 : 102, 1954, p.p., non (Taub.) Bak.. f.]; – var. **acutus** Verdc. [syn.: *T. labialis* sensu Hauman in Fl. Congo Belge 6 : 103, 1954, p.p., and sensu Hepper in Fl. W. Trop. Afr., Ed. 2, 1: 573, 1958, p.p., non (L. f.) Spreng. sensu stricto; – var. **labialis** [syn.: *Glycine parviflora* Lam.; *G. debilis* Ait.; *G. pentandra* Spreng. in Schrad. J. Bot. 2 (1 & 2) : 197, 1802, non 1826 (= *Ophrestia hedysaroides); G. dolichoides* Desv.; *G. gampsonychia* (E. Mey.) Walp.; *Bujacia gampsonychia* E. Mey.; *Glycine meyeri* Benth.; *Teramnus parviflorus* (Lam.) Spreng.; *T. debilis* (Ait.) Prain; *T. angustifolius* Merrill; *T. labialis* subsp. *labialis* var. A of Verdc. in Kew Bull. 24 : 269, 1970]; mainly in S Africa; Madagascar; tropical Asia; – var. **somalensis** Vatke; Only known from the type gathering (N Somalia) of 1875 (Hildebrandt 1389); may be a distinct species fide Thulin in Fl. Somal. 1: 430, 1993.

T. micans (Welw. ex Bak.) Bak. f.

bas.: *Glycine micans* Welw. ex Bak.

Robust climber, much-branched, with markedly angled (nearly winged) to terete, densely hairy to glabrescent stems 3-7 m long; leaflets large (4-9 cm long), ± obovate, with long sooft hairs beneath (like the pods); flowers white, orange or blue.

Grassland, grassland with scattered trees, thicket, grassland with *Andropogon;* sometimes marshy ground, edge of riverine forest; forest edges extending down rivers; secondary scrub, abandoned fields, cultivations; 900-1800 m alt. (var. **fagifolius** in C part of range, up to 1400 m).

Variable in shape of stems and leaflets, in pubescence of stems and calyx, and in flower colour.

Comprises 3 vars.: – var. **micans** (with ± winged stems and rhomboid leaflets, flowers mostly orange, in W to C Africa-Uganda); – var. **cyaneus** (De Wild.) Hauman [syn.: *T. stolzii* Bak. f.] (stems angled, leaflets oblong, corolla often blue, in E part of range); – var. **fagifolius** Hauman (stems robust, more rounded, leaflets elliptic-rhomboid, corolla lilac).

There is a gradation to large-leaved forms of *T. labialis* and to broader-leaved forms of *T. uncinatus.*

T. repens (Taub.) Bak. f.

bas.: *Glycine repens* Taub.

Perennial prostrate herb, often mat-forming, with several shoots 0,5-1,8 m tall from a small rootstock; stems slender, sometimes twining, much-branched, densely spreading-hairy; leaflets ± round to oblong; flowers white, pink or pale mauve.

Grassland, grassland with scattered trees, disturbed places, weed of cultivations; 1200-1800 m alt. (subsp. **repens)**. – Bushland; sandy flats in coastal woodland; lava plains (Zaire); 0-50 m (subsp. **gracilis)**.

Variable in shape of leaflets, type of indumentum, aspect of seed surface (smooth in subsp. **repens,** granular-rough in subsp. **gracilis)**.

Socotra, Yemen, Arabia; Madagascar, Comoros; probably also in India, Pakistan (subsp. **gracilis;** very close to **T. mollis** Benth.).

Comprises 2 subspp.: – subsp. **gracilis** (Chiov.) Verdc. in N-NE-E part of range.

T. uncinatus (L.) – Icon.: Du Puy & al., Legum. Madag.: 549, 2002 (subsp. **axilliflorus)**.

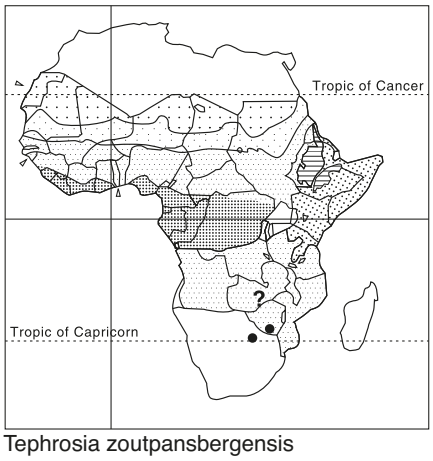
bas.: *Dolichos uncinatus* L. 1763, non Schweinf. 1896 (= *Lablab purpureus* subsp. *uncinatus)*.

Perennial climbing, rarely prostrate, herb with tough, branched, ± twisted angular stems, usually with dense dark rusty-red pubescence, (0,2-)1-3 m long from a deep woody rootstock; leaflets long, elliptic, paler beneath; calyx with whitish, brown or dark blackish-brown hairs; corolla greenish, white, mauve or pink.

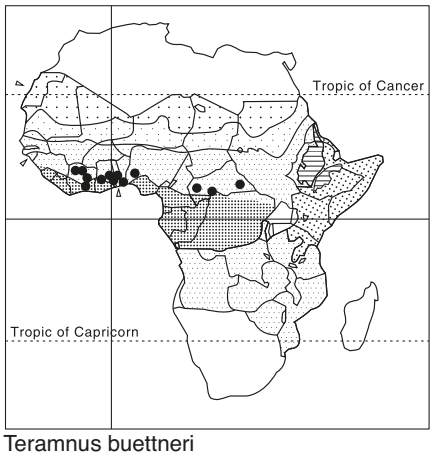
Course grassland, grassland, bushland, grassland with *Imperata* or *Andropogon,* open woodland, forest clearings, old cultivations; often on seasonally flooded ground; 280-1350 m alt. (subsp. **axilliflorus)**. – Also on termite mounds; in swampy places, disturbed sites; 250-1500 m (Fl. Zambes. area), 1080-2050 m (E. Africa).

Variable in : aspect of inflorescence, type of indumentum, shape of leaflets.

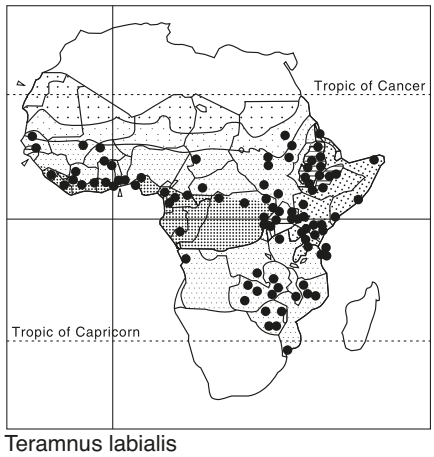
Madagascar, and West Indies, tropical C. and S. America (subsp. **axilliflorus)**.



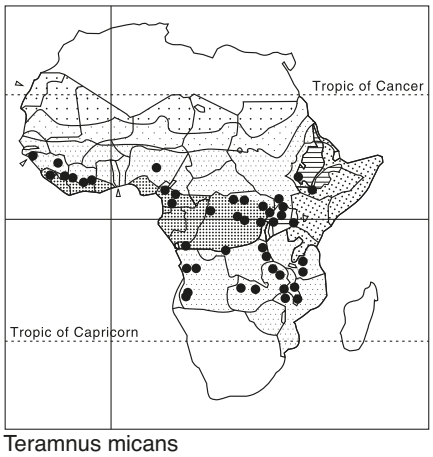
Tephrosia zoutpansbergensis



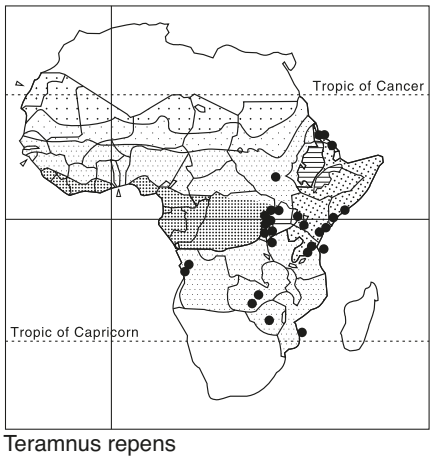
Teramnus buettneri



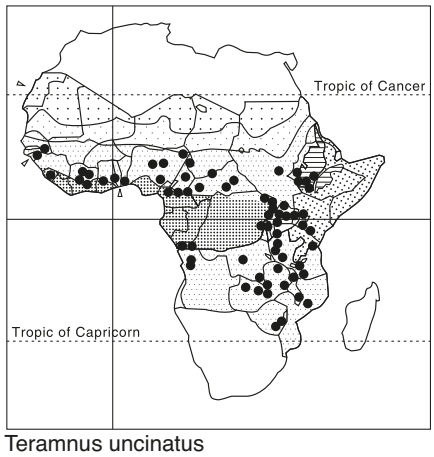
Teramnus labialis



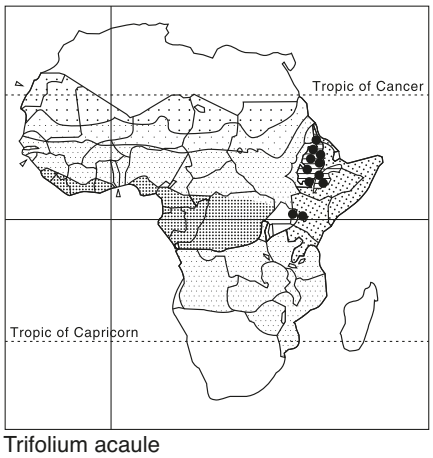
Teramnus micans



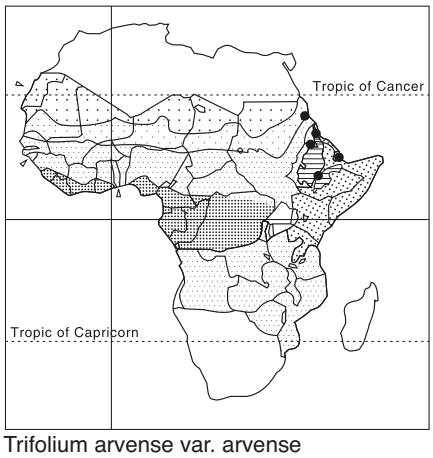
Teramnus repens



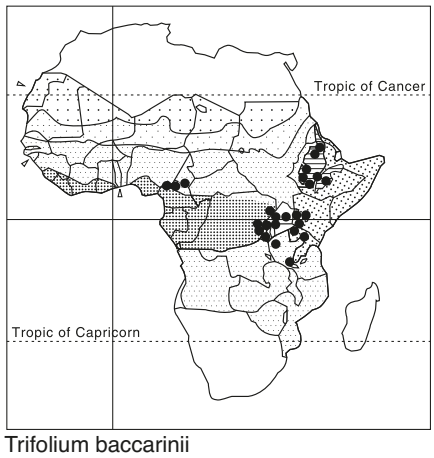
Teramnus uncinatus



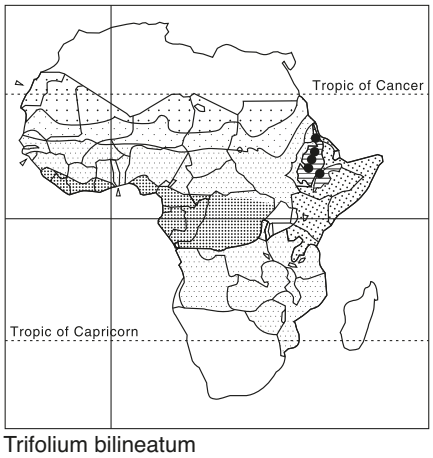
Trifolium acaule



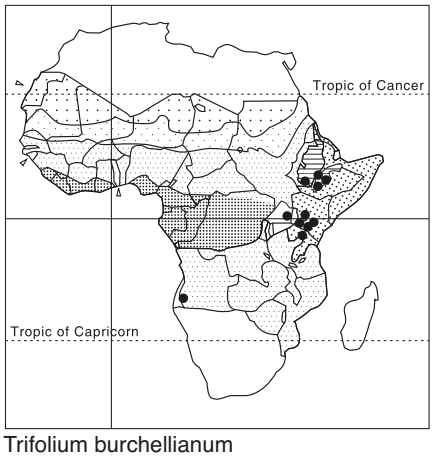
Trifolium arvense var. arvense



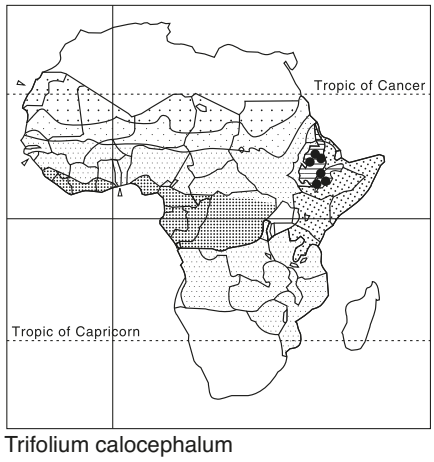
Trifolium baccarinii



Trifolium bilineatum



Trifolium burchellianum



Trifolium calocephalum

TERAMNUS UNCINATUS

Comprises 3 subspp.: – subsp. **uncinatus** [syn.: *Glycine angulata* Desv.; *G. botrydium* (Schott) Walp.; *G. discolor* Mart. & Gal.; *G. elliptica* Mart. & Gal.; *G. uncinata* (L.) Macbride] only in C. and S. America (has been cultivated in Kenya, Zimbabwe); – subsp. **axilliflorus** (Kotschy) Verdc. [bas.: *Glycine axilliflora* Kotschy; syn.: *G. gilletii* De Wild.; *G. reducta* De Wild.; *Teramnus axilliflorus* (Kotschy) Bak. f.; *T. gilletii* (De Wild.) Bak. f.], very close to subsp. **uncinatus;** has a mixture of white and pale rusty hairs on calyx; inflorescence contracted; – subsp. **ringoetii** (De Wild.) Verdc. [syn.: *Glycine andongensis* Bak.; *G. lanceolifoliata* De Wild.; *Teramnus andongensis* (Bak.) Bak. f.; *T. lanceolifoliatus* (*"lanceolifoliolatus")* (De Wild.) Bak. f.], with very dark indumentum on calyx; inflorescence lax; – intermediates between subspp. **axilliflorus** and **ringoetii** frequent.

Resembling *T. labialis.*

SYNONYMS:

Teramnus andongensis (Bak.) Bak. f. = **Teramnus uncinatus** subsp. **ringoetii**

angustifolius Merrill = **T. labialis** subsp. **labialis** var. **labialis**

axilliflorus (Kotschy) Bak. f. = **T. uncinatus** subsp. **axilliflorus**

axilliflorus sensu Hauman p.p. = **T. labialis** subsp. **labialis** var. **abyssinicus**

debilis (Ait.) Prain = **T. labialis** subsp. **labialis** var. **labialis**

gilletii (De Wild.) Bak. f. = **T. uncinatus** subsp. **axilliflorus**

gracilis Chiov. = **T. repens** subsp. **gracilis**

hedysaroides (Willd.) Spreng. = **Ophrestia**

labialis (L. f.) Spreng. subsp. *labialis* var. A. = **Teramnus labialis** subsp. **labialis** var. **labialis**

labialis sensu Hauman p.p., and Hepper p.p., non (L. f.) Spreng. s. str. = **T. labialis** subsp. **labialis** var. **acutus**

lanceolifoliatus (De Wild.) Bak. f. = **T. uncinatus** subsp. **ringoetii**

parviflorus (Lam.) Spreng. = **T. labialis** subsp. **labialis** var. **labialis**

repens sensu Hauman p.p., non (Taub.) Bak. f. = **T. labialis** subsp. **labialis** var. **abyssinicus**

stolzii Bak. f. = **T. micans** var. **cyaneus**

tenuiflorus (Klein ex Willd.) Sprengel = **Galactia tenuiflora** var. **tenuiflora**

uncinatus L. = **Lablab purpureus** subsp. **uncinatus**

TRIFOLIUM / *37*

A genus of c. 250 species; main distribution centre in the Mediterranean region.

In our area the pod is unknown in 1(+1?) species Ec. (5 %). Two species (= c. 5%) are known only from the type *(T. chilaloense, T. gillettianum)*, and *T. ukingense* from only 2 collections.

GAZAR, M. (2003). See under **Melilotus,** p. 146.

GILLETT, J. M. & N. L. TAYLOR (2001). *The World of Clovers.* Iowa State Univ. Press, Ames. XVII + 457 pp.

WATSON, L. E. & al. (2000). Molecular phylogeny of Old World Trifolium (Fabaceae), based on plastid and nuclear markers. *Plant Syst. Evol.* 224:153-171.

TRIFOLIUM

Trifolium acaule Steud. ex A. Rich.; Zohary & Heller, Genus Trifolium: 202, 1984; Gillett & Taylor, World of Clovers: 2, 2001.

syn.: *T. petitianum A. Rich.,* incl. var. *cuneatum* Bak. f.

Perennial herb with a taproot, glabrous, low-matted with short close-pressed prostrate stems, densely caespitose, rooting at the nodes; base of plant covered with withered stipules and leaves; pod unknown?

In short grass and in rock crevices; locally abundant; 2500-4150 m alt.

T. arvense L. var. **arvense;** Zohary & Heller, o.c.: 439; Gillett & Taylor, o.c.: 38.

Annual herb with appressed or subpatulous silky hairs, 7-40 cm tall; stems solitary, few or many, delicate, flexuous, terete, erect or ascending, mostly branching above.

Grassland; moor; meadows; 1200-3000 m alt.

Exceedingly polymorphic.

Eurasia; Canary Islands to Egypt-Middle East. Adventive in many other countries (S. Africa; E Canada, N and SE U.S.A., etc.).

T. baccarinii Chiov.; Zohary & Heller, o.c.: 217; Gillett & Taylor, o.c.: 42 – Icon: Jacques-Félix in Agron. Trop. 8: 287, 1953.

syn.: *Trigonella marginata* Hochst. & Steud. ex Bak., nom. invalid.

Annual herb, glabrous or sparingly hairy in upper parts, 7-50 cm tall; stems erect, ascending or prostrate and sometimes rooting at nodes in overgrazed areas, grooved, branched; ± cleistogamous.

Heavily grazed grassland; moist grass by roadside; woodland; cultivations; 1000-2500 m alt.

T. bilineatum Fresen.; Zohary & Heller, o.c.: 217; Gillett & Taylor, o.c.: 58.

syn.: *T. costatum* Hochst. ex Engl.

Annual herb, patulous-pubescent, 25-50 cm tall with many stems, herbaceous, erect or ascending, leafy all along, branching, sulcate; branches curved.

Grassland; cultivations; 1800-2500 m alt.

T. burchellianum Ser.; Zohary & Heller, o.c.: 136; Gillett & Taylor, o.c.: 82.

Perennial herb, glabrous, 5-20 cm tall; stems procumbent or prostrate, creeping and rooting at nodes.

Grassland; moor; evergreen- and bamboo forest glades and margins; especially in moist places; sometimes very abundant; river banks; 1800-4000 m alt.

S. Africa.

Comprises 2 subspp.: – subsp. **burchellianum** [syn.: *Lupinaster ecklonianus* J. Presl; *L. burchellianus* (Ser.) Ecklon & Zeyh.; *Trifolium subrotundum* Steud. & Hochst. ex A. Rich. var. *obcordatum* Welw. ex Hiern; *T. repens* Thunb., non L.]; – subsp. **johnstonii** (Oliv.) J. B. Gillett [syn.: *T. basileianum* Chiov.], with 2 vars.: – var. **johnstonii;** – var. **oblongum** J. B. Gillett

T. calocephalum Fresen. 1839, excl. var. *parviflorum* Chiov. (= **T. tembense)**, non Nutt. ex Torr. & A. Gray, 1838; Zohary & Heller, o.c.: 211 sub nom. *T. abyssinicum* Heller nom. nov.; Gillett & Taylor, o.c.: 86.

TRIFOLIUM CALOCEPHALUM

Annual or sometimes perennial glabrous herb 10-30 cm tall; stems densely caespitose, diffuse, erect or procumbent, rooting at nodes, branching, grooved.

Grassland; usually in wet places and along streams; 2400-3600 m alt.

[T. campestre Schreber] – Icon.: Boulos, Fl. Egypt 1: 287, 1999; C. A. Bianco & al. in Kurtziana 31/1-2: 100, 2005.

syn.: *T. procumbens* L., Fl. Suec., Ed. 2: 261, 1755, p.p., nom. ambig., non L., Sp. Pl.: 772, 1753; *T. agrarium* L. 1753, p.p.; *T. ciliatum* Poir.; *T. glaucescens* Hausskn.; *T. pumilum* Hossain

Annual herb 5-25 cm tall, appressed hairy; stems erect or ascending, branched especially from the base.

A weed on edges of irrigated fields, cultivations; grassland in open sunny spots; rock crevices; 1000-3100 m alt. (Ethiopia); naturalized in Sudan, Ethiopia, Djibouti, Fl. Zambes. Area, S. Africa; and in many temperate regions (e.g. Argentina).

Native of Europe (except extreme N and E), Mediterranean region, Egypt, W Asia-Middle East.

Not mapped.

T. cheranganiense J. B. Gillett; Zohary & Heller, Genus Trifolium: 93, 1984; Gillett & Taylor, World of Clovers: 100, 2001.

Perennial herb, patulous-pubescent to 1 m long with a stout taproot; stems many, prostrate, leafy, branching, sometimes rooting at nodes.

Grassland, especially where heavily grazed; very common locally; commonest at 2400 m alt. in open grassland in which the original *Themeda triandra* and *Hyparrhenia* spp. have been superseded by short *Digitaria* sp. associated with *Trifolium semipilosum* and, at higher altitudes with other *Trifolium* species including *T. cryptopodium;* 2100-3100 m alt.

T. chilaloense Thulin; Zohary & Heller, o.c.: 70; Gillett & Taylor, o.c.: 104.

Annual herb, glabrous or sparsely pilose in upper parts, to 12 cm tall; stems few, profusely branching, branches spreading; seeds brown, mottled with black and *distinctly warty* (Fig.: Bot. Not. 129: 170, 1976).

Grassland patches in *Hagenia* forest; ± 2900 m alt.

Onkly known from the type collected in 1971.

T. cryptopodium A. Rich., includ. var. *kilimandscharicum* (Taub.) J. B. Gillett; Zohary & Heller, o.c.: 93; Gillett & Taylor, o.c.: 120.

syn.: *T. kilimandscharicum* Taub.

Perennial plant, glabrous or pubescent to villous in upper part, forming large, dense mats; rootstock woody and thick; stems many, prostrate, rooting at nodes, 10-30 cm long; calyx variable.

Grassland; often on rocky or sometimes in moist open spots in evergreen forest; moorland; 1800-4300 m alt.

Intermediates with *T. usambarense* are known.

T. decorum Chiov.; Zohary & Heller, o.c.: 70; Gillett & Taylor, o.c.: 130.

Annual or short-lived perennial, glabrous herb 20-50 cm tall; stems many, erect to ascending, deeply sulcate, leafy, branching all along.

Open, grazed, grassy hillsides; marshy or moist places; streamsides; 1800-3000 m alt.

TRIFOLIUM

T. elgonense J. B. Gillett; Zohary & Heller, o.c.: 72; Gillett & Taylor, o.c.: 146.

Annual, glabrous herb 5-20 cm tall; stems many, procumbent to ascending, branching.

Alpine belt, close to small stream; locally common on moist rocks in grassland; wet open places in evergreen forest; moorland; 2500-3720 m alt.

T. erubescens Fenzl; Zohary & Heller, o.c.: 330; Gillett & Taylor, o.c.: 152.

syn.: *T. speciosum* Willd. var. *erubescens* (Fenzl) Fenzl; *Chrysaspis erubescens* (Fenzl) Hendrych

Annual herb, appressed- or patulous-pubescent, 10-40 cm tall; stems slender, few or many, terete, erect or ascending, rarely decumbent, branching above.

Ecology unknown in Ethiopia (not in Flora of Ethiopia); 2400 m alt.

Turkey, Syria, Lebanon, Israel.

Near *T. patens* Schreb.

Only a single collection known from Ethiopia made in 1854.

Not mapped.

T. fragiferum L. – Icon.: Boulos, Fl. Egypt 1: 287, 1999.

syn.: *T. neglectum* C. A. Mey.; *T. bonannii* C. Presl

Perennial herb, glabrous or ± hairy; stems procumbent, rooting at nodes, 10-35 cm long; calyx densely hairy, inflated in fruit.

Along streams; 1650-1900 m alt.

Egypt; Mediterranean region, Europe; Arabia, W Asia. – Spontaneous in Ethiopia?

T. gillettianum Jacq.-Fél.; Zohary & Heller, Genus Trifolium: 140, 1984.

Annual glabrous herb 5-30 cm tall; stems erect, simple or slightly branched, grooved; roots stout.

Moist depression on lateritic plateau with *Oryza tisserantii, Trachypogon chevalieri, Loudetia annua,* etc.; 1400 m alt.

Near *T. rueppellianum.*

Only known from the type collected in 1967.

T. lanceolatum (J. B. Gillett) J. B. Gillett; Zohary & Heller, o.c.: 222; Gillett & Taylor, World of Clovers: 196.

Annual herb, glabrous except in upper parts, 15-40 cm tall; stems erect or ascending, grooved, branching from base and above; cleistogamous fide Bogdan.

Grassland; weed in cultivation; 1950-3000 m alt.

Possibly introduced in Ethiopia.

T. lugardii Bullock; Zohary & Heller, o.c.: 285; Gillett & Taylor, o.c.: 216.

Annual herb, subglabrous, to 60 cm tall; stems few, erect, dichotomously branched, grooved.

Grassland; forest margins; especially in damp places; 1800-2550 m alt.

T. masaiense J. B. Gillett; Zohary & Heller, o.c.: 151; Gillett & Taylor, o.c.: 226.

Annual herb, pilose to glabrescent, 40-60 cm tall; stems erect or ascending, branching from base and above, sometimes lower parts prostrate and rooting at nodes.

Grassland, especially in seasonally wet areas; grassland with patches of *Juniperus, Podocarpus* forest; sometimes in pure stands; also very common in certain areas; 1200-2700 m alt.

Comprises 2 subspp.

T. mattirolianum Chiov.; Zohary & Heller, o.c.: 256, Gillett & Taylor, o.c.: 228.

syn.: *T. subrotundum* Steud. & Hochst. ex A. Rich. var. *stipuli-incissis* A. Rich.

Annual herb, glabrous, 15-40 cm tall; stems many, erect to ascending, branching all along, deeply grooved.

Grassland, thin soil over rocks; 1300-2100 m alt.

T. multinerve A. Rich., incl. var. *debilior* A. Rich.; Zohary & Heller, o.c.: 75: Gillet & Taylor, o.c.: 252.

syn.: *Trigonella multinervis* Hochst. & Steud. nom.; *Loxospermum multinerve* Hochst.

Annual, sometimes perennial herb, glabrous, 10-30 cm tall; stems few, somewhat divaricately branching, if procumbent not rooting at the nodes.

Short grassland; moorland, especially in moist places; rocky outcrop with wet flushes and thin soil with *Selaginella njamnjamensis, Aeollanthus* spp., *Aloe* sp. and many annuals; ericaceous scrub; 1800-4150 m alt.

T. pichisermollii J. B. Gillet; Zohary & Heller, o.c.: 230; Gillett & Taylor, o.c.: 304.

Annual herb, pubescent, to 35 cm tall; stems many, ascending, branching all along.

Grassland; 2100-2700 m alt.

Perhaps a variety of *T. bilineatum.*

T. polystachyum Fresen., incl. var. *psoraleoides* Welw. ex Hiern and var. *contractum* Lanza; Zohary & Heller, o.c.: 196; Gillet & Taylor, o.c.: 324.

syn.: ? *T. mauginianum* Fiori (type lost).

Perennial rhizomatous herb, glabrous below to sparingly pubescent above, 30-80 cm tall; stems many, prostrate to ascending, rooting at nodes near base, branching above, to 3 mm thick.

Swampy grassland; forest margins; rocky ground; low ericaceous scrub; along streams; sometimes abundant; montane grassland, moist dambo; 1700-3550 m alt.

Perhaps introduced in Zaire.

Similar to *T. usambarense,* but larger in all parts.

Var. *psoraleoides* maintained by M. P. Vidigal in Fl. Zambes. 3/7: 49, 2003.

[T. pratense L.] – Red clover.

Perennial herb, ± hairy, to 1 m tall.

Widespread in Europe, W Asia; also in Algeria, Tunisia, Morocco. Introduced in experimental nurseries in Ethiopia, Zimbabwe; S. Africa.

Not mapped.

T. pseudostriatum Bak. f.; Zohary & Heller, o.c.: 256; Gillett & Taylor, o.c.: 330.

syn.: *T. scaettae* Staner, nom.

Annual herb, glabrous to glabrescent, 10-60 cm tall; stems erect to ascending, branching all along, grooved.

Pasture in humid places; short grassland; 1350-2200 m alt.

T. purseglovei J. B. Gillett; Zohary & Heller, o.c.: 161; Gillett & Heller, o.c.: 334.

Perennial glabrous herb 10-30 cm tall; stems ascending, prostrate, rooting at nodes, branched, grooved; roots all fibrous.

Open marshy places on volcanic soil in grassland; short-grassed glade by stream in forest below bamboo zone; beside a path in sclerophyllous forest; *Hagenia* association; sometimes forming a carpet; 1650-2800 m alt.

T. quartinianum A. Rich.; Zohari & Heller, o.c.: 288; Gillett & Taylor, o.c.: 336.

Annual subglabrous herb 20-40 cm tall; stems few, erect or spreading, stout, branching from base and above, grooved.

Short grassland, especially in damp places; 1500-2600 m alt.

[T. repens L., non Thunb. (= *T. burchellianum* subsp. *burchellianum)*] – White clover.

Perennial glabrous herb with long creeping stems rooting at nodes, 10-40 cm long.

Cultivated for fodder and naturalized in many temperate regions. Widespread in Eurasia; also in N Africa, Egypt, Ethiopia, E Africa, S Africa.

Not mapped.

[T. resupinatum L.] – Icon.: Boulos, Fl. Egypt 1: 287, 1999.

syn.: *T. suaveolens* Willd.; *T. bicorne* Forssk.

Annual glabrous herb 10-30(-60) cm tall; stems erect, procumbent or ascending, branched from the base; fruiting heads inflated.

Widespread in Europe, N Africa, Egypt; Arabia, W and C Asia.

Once collected in N Ethiopia; probably introduced. Introduced in S. Africa.

Not mapped.

T. rueppellianum Fresen., incl. var. *preussii* (Bak. f.) J. B. Gillett, var. *subrotundum* (Steud. & Hochst. ex A. Rich.) Fiori, but excl. var. *lanceolatum* J. B. Gillett (= *T. lanceolatum)*, and fa. *minor* A. Chev. (= *T. baccarinii)*; Zohary & Heller, o.c.: 231; Gillett & Taylor, o.c.: 352.

syn.: *T. subrotundum* Steud. & Hochst. ex A. Rich., p. maj. parte; *T. preussii* Bak. f.

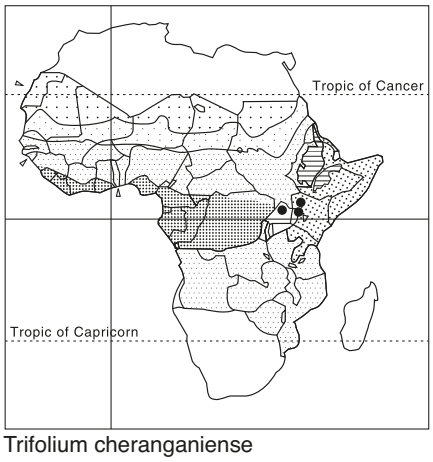
Annual herb to 50 cm tall; stems glabrous, erect or, less often, prostrate, not rooting at the nodes. Some specimens cleistogamous and self-fertile.

Grassland; moorland; tracks through forest; as a weed in cultivated areas; usually in rather wet places; *Acacia abyssinica* woodland; *Hagenia* woodland; 1000-3650 m alt.

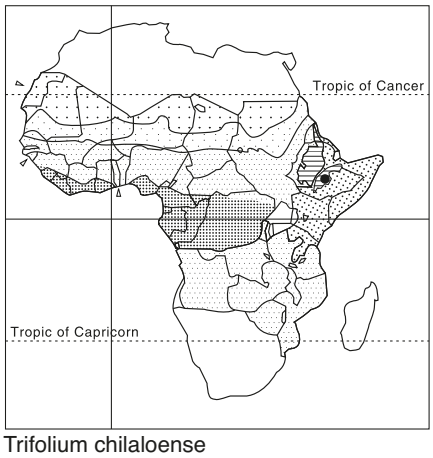
Bioko/Fernando Poo.

Comprises 2 vars.: – var. **ruepellianum;** – var. **minimiflorum** J. B. Gillett

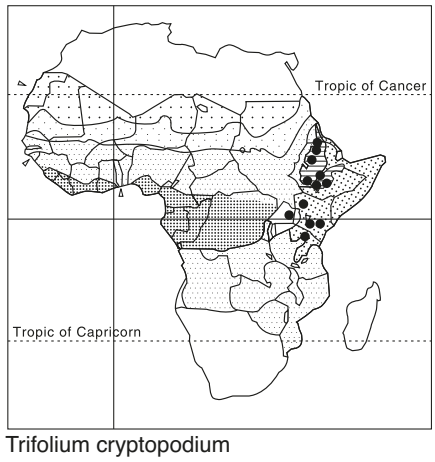
Introduced into Malawi and Zambia.



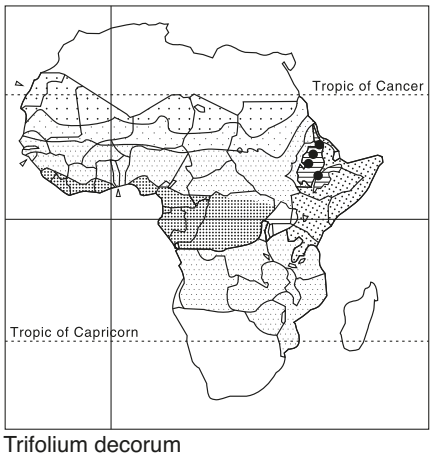
Trifolium cheranganiense



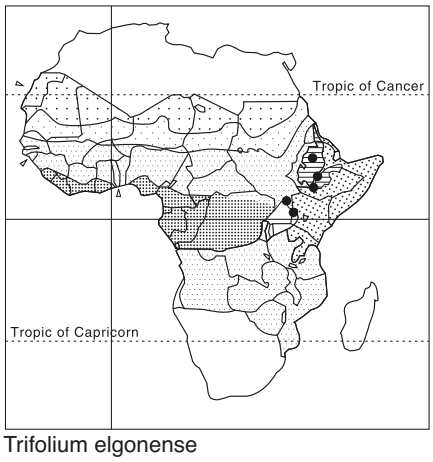
Trifolium chilaloense



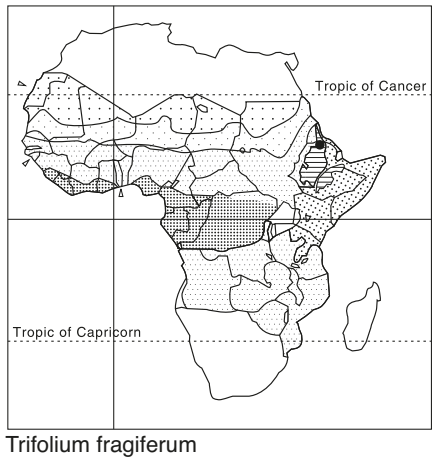
Trifolium cryptopodium



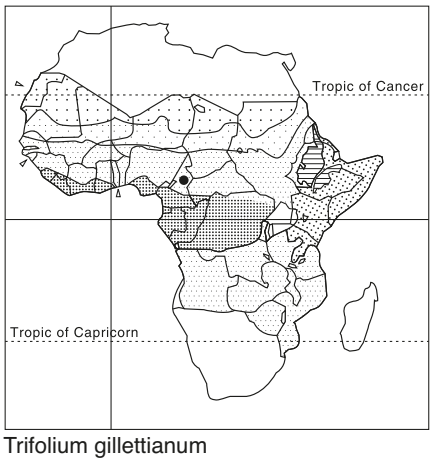
Trifolium decorum



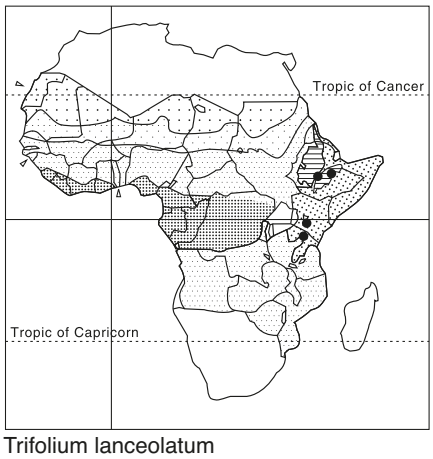
Trifolium elgonense



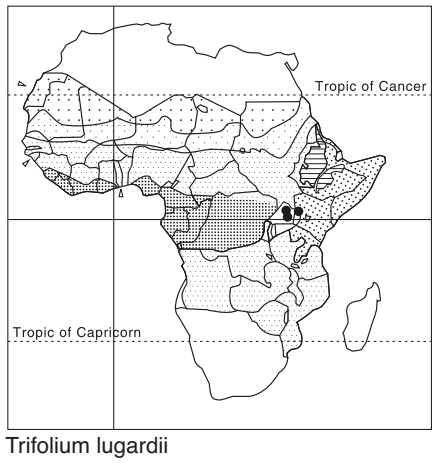
Trifolium fragiferum



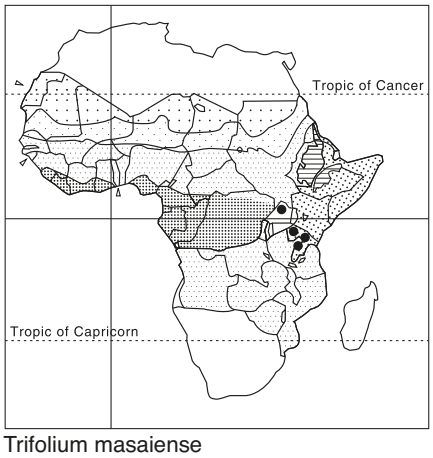
Trifolium gillettianum



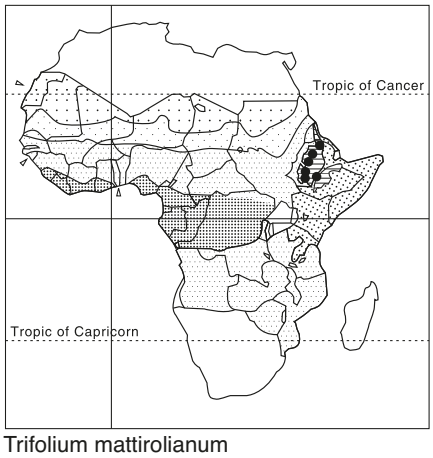
Trifolium lanceolatum



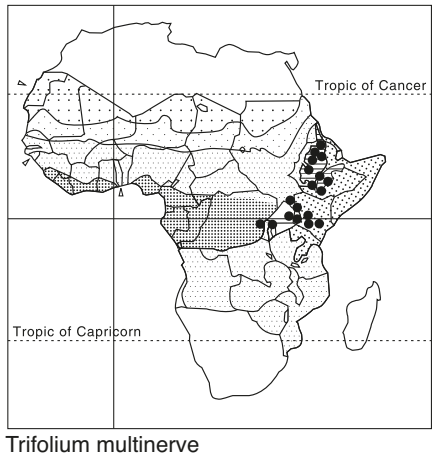
Trifolium lugardii



Trifolium masaiense



Trifolium mattirolianum



Trifolium multinerve

T. schimperi A. Rich.; Zohary & Heller, Genus Trifolium: 75, 1984; Gillett & Taylor, World of Clovers: 360, 2001.

syn.: *Trigonella schimperi* Hochst. & Steud., nom.; *Loxospermum schimperi* Hochst.

Annual glabrous herb; stems many, erect or ascending, much-branched, grooved, 15-35 cm tall.

Grassland, especially in damp places; 1700-3150 m alt.

T. semipilosum Fresen.; Zohary & Heller, o.c.: 176; Gillett & Taylor, o.c.: 366.

Perennial, pilose to glabrescent herb from a strong rootstock; stems caespitose, many, stoloniferous, prostrate, rooting at nodes, branching. In clumps.

Grassland, especially near the drier type of evergreen forest; usually in places where there is much mist (var. **semipilosum)**; in rather moister areas than the preceding var., often abundant and with *Pennisetum clandestinum* (var. **glabrescens)**; grassland in rocky places (var. **intermedium)**; grassland and forest margins (var. **brunellii)**; 1200-4000 m alt.

Comprises 4 vars.: – var. **semipilosum** [syn.: *T. semipilosum* var. *microphyllum* Chiov. and var. *kilimanjaricum* Bak. f. and var. *sennii* Chiov. ex Fiori]; – var. **brunellii** Thulin [syn.: *T. brunellii* Chiov. ex Fiori, nom. nud.]; – var. **intermedium** Thulin; – var. **glabrescens** J. B. Gillett

T. simense Fresen., incl. fa. *albiflorum* Piovano; Zohary & Heller, o.c.: 98; Gillett & Taylor, o.c.: 370. – Icon.: Jacques-Félix, Agronomie Trop. 8: 287, 288, 1953; Fl. Zamb. 3/7: 48, 2003.

Perennial or perhaps, rarely, annual herb; some of the roots often rather thick and fleshy; stems many, erect or ascending, sometimes procumbent at the base, but not rooting at the nodes, usually glabrous, sometimes pilose above, sparingly branching in upper part, 20-60 cm tall or long.

Grassland; in more drier places than *T. usambarense;* meadow; grassy forest clearings; ericaceous scrub; 1500-3800 m alt.

Very variable in size and shape of leaflets.

Bioko/Fernando Poo.

T. somalense Taub. ex Harms; Zohary & Heller, o.c.: 100; Gillett & Taylor, o.c.: 376.

Perennial herb glabrous below, villous above 15-30 cm tall with few, erect or ascending stems branching above, arising from a cluster of thick tuberous roots (tuber to 8 mm thick × 8 cm long).

Open grassland on sandstone with red sandy soil and on black clay soil; to 2000-2200 m alt.

T. spananthum Thulin; Zohary & Heller, o.c.: 233; Gillett & Taylor, o.c.: 380. – Icon.: Bot. Not. 129: 168, 1976.

Perennial, glabrous often mat-forming herb, with usually many prostrate or ascending stems 2,5-20 cm long, branching from a taproot.

Grassland, often in heavily grazed pastures; disturbed or bare ground along tracks, etc.; resistant to grazing and trampling; 2300-2900 m alt.

T. steudneri Schweinf.; Zohary & Heller, o.c.: 285; Gillett & Taylor, o.c.: 390.

syn.: *T. bellianum* Chiov.; *T. schimperianum* Hochst. ex Bak.

Annual, glabrous herb 20-60 cm tall; stems many, erect to spreading, branched from below and above, grooved.

Grassland; bushland; especially in damp places; forest margins; 1100-2800 m alt.

T. stolzii Harms; Zohary & Heller, o.c.: 100; Gillett & Taylor, o.c.: 396.

Perennial pilose to glabrescent herb 35-50 cm tall; root fleshy, almost tuberous; stems many, creeping or erect, slender, occasionally rooting at lower nodes.

Grassland; roadsides; pastures; old cultivations; 1600-3000 m alt.

Not in Ethiopia (= *T. cryptopodium)*.

[T. subterraneum L.]

Annual procumbent herb; stems to 20(-30) cm long; sterile flowers deflexed over fertile ones in fruiting.

Native of the Mediterranean region and extensively cultivated for fodder. Introduced in Ethiopia; S. Africa.

Not mapped.

T. tembense Fresen.; Zohary & Heller, o.c.: 236; Gillett & Taylor, o.c.: 408.

syn.: *T. umbellulatum* A. Rich.; *T. goetzenii* Taub. ex Engl.; *T. calocephalum* Fresen. var. *parviflorum* Chiov.; *T. subrotundum* Harms

Annual glabrous or subglabrous, erect or prostrate herb, sometimes rooting at the nodes when growing in water, 20-50 cm tall; stems many.

Grassland particularly in moist places; clearings in *Hagenia* scrub; sometimes in shallow water; forest; moorland; (1400)-2000-3800 m alt.

T. tomentosum L.; Zohary & Heller, o.c.: 304; Gillett & Taylor, o.c.: 414. – Icon.: Boulos, Fl. Egypt 1: 287, 1999.

Annual, glabrous or sparingly hairy herb, 10-20(-35) cm tall; stems many, terete or furrowed, erect, ascending or decumbent, mostly branching from base; sometimes basicarpic.

Ecology unknown in Sudan (hills). Sandy desert plains, edges of fields in Egypt.

Polymorphic. Four varieties are recognised in Egypt.

Mediterranean region, Portugal; Açores, Madeira; Canary Isl.; Egypt, Turkey; Iraq; Iran; Causasus. – Introduced (var. **tomentosum)** in S. Africa.

Similar to *T. resupinatum,* but caespitose.

T. ukingense Harms; Zohary & Heller, o.c.: 103; Gillett & Taylor, o.c.: 426.

Perennial silky-villous or puberulous herb to 20 cm tall; stems erect; fruit unknown.

Dry grassland on red lateritic soils; 2100-2400 m alt.

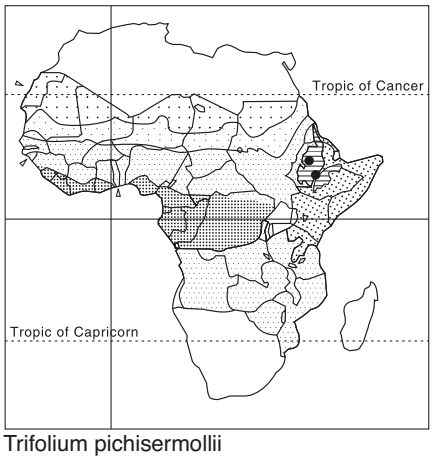
Only known from two collections.

T. usambarense Taub.; Zohary & Heller, o.c.: 104; Gillet & Taylor, o.c.: 430. – Icon.: Jacques-Félix, Agronomie Trop. 8: 287, 1953.

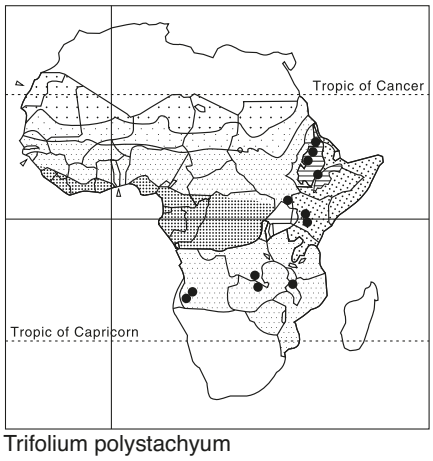
Annual or perennial herb 20-100 cm tall; stems ascending, weak, branching sparingly, ± 1,5 mm thick, glabrous below, ± pilose above, often rooting at the lower nodes.

Scattered tree grassland usually in swampy places and along streams; marshy places and open spots in evergreen forest; *Erica-Hypericum* scrub; humid pasture with *Pennisetum clandestinum;* forest margins; 850-3000 m alt.

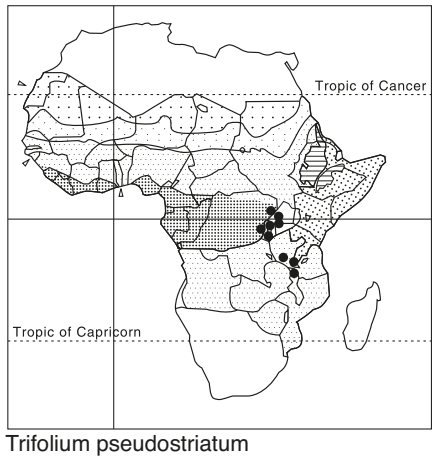
S. Africa; Bioko/Fernando Poo.



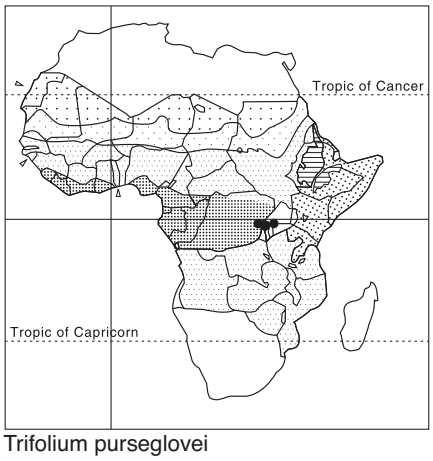
Trifolium pichisermollii



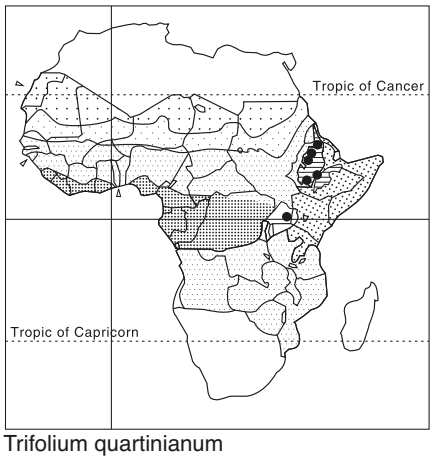
Trifolium polystachyum



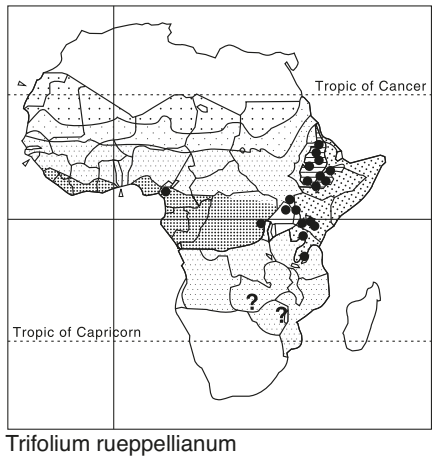
Trifolium pseudostriatum



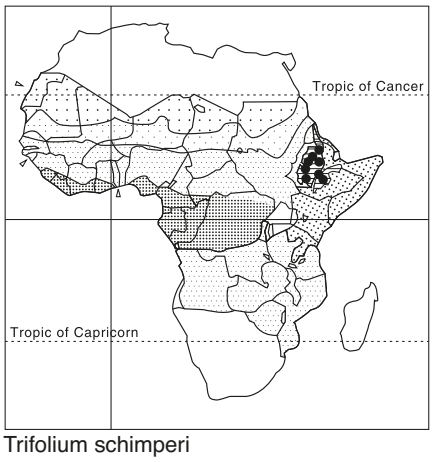
Trifolium purseglovei



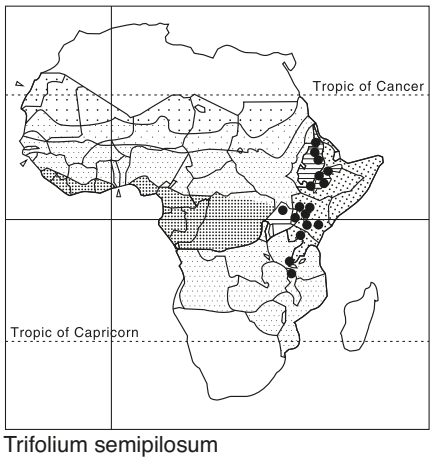
Trifolium quartinianum



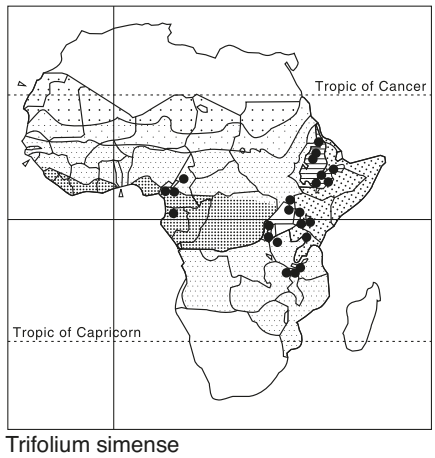
Trifolium rueppellianum



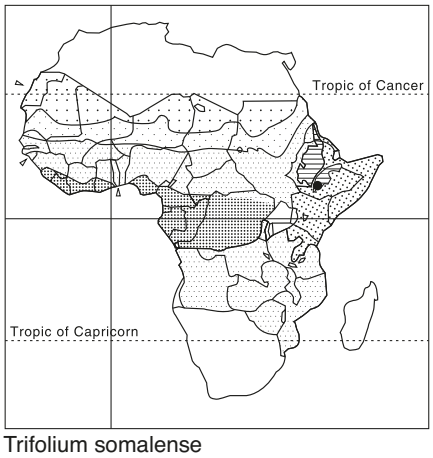
Trifolium schimperi



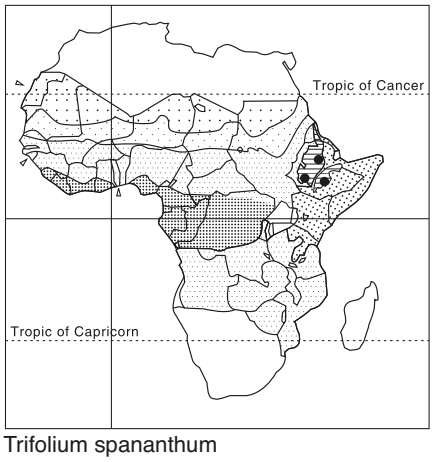
Trifolium semipilosum



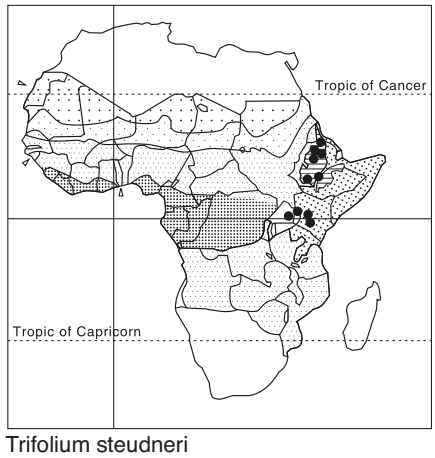
Trifolium simense



Trifolium somalense



Trifolium spananthum



Trifolium steudneri

T. wentzelianum Harms, excl. var. *stolzii* (Harms) J. B. Gillett (= *T. stolzii);* Zohary & Heller, o.c.: 104; Gillett & Taylor, o.c.: 448.

Perennial herb, densely pubescent, 20-40 cm tall; main roots often swollen; stems spreading or erect, sulcate-striate, slightly branched, occasionally rooting at the nodes near the base.

Grassland; 2400-2800 m alt.

SYNONYMS:

Trifolium abyssinicum Heller = **Trifolium calocephalum**

acaule A. Rich. var. *emarginatum* Chiov. ex Fiori, nom. invalid. = **T. acaule**

agrarium L. 1753 p.p. = **T. campestre**

basileianum Chiov. = **T. burchellianum** subsp. **johnstonii**

bellianum Chiov. = **T. steudneri**

bicorne Forssk. = **T. resupinatum**

bonannii C. Presl = **T. fragiferum**

brunellii Chiov. ex Fiori = **T. semipilosum** var.

burchellianum Ser. var. *johnstonii* (Oliv.) J. B. Gillett = **T. burchellianum** subsp. **johnstonii** var. **johnstonii**

calocephalum Fresen. var. *parviflorum* Chiov. = **T. tembense**

ciliatum Poir. = **T. campestre**

costatum Hochst. ex Engl. = **T. bilineatum**

glabrescens J. B. Gillett specim. Ethiop. = **T. semipilosum** var. **brunelli**

glaucescens Hausskn. = **T. campestre**

goetzenii Taub. ex Engl. = **T. tembense**

guianense Aubl. = **Stylosanthes**

johnstonii Oliv. = **Trifolium burchellianum** subsp.

kilimandscharicum Taub. = **T. cryptopodium**

marginatum (Bak.) Cufod. = **T. baccarinii**

mauginianum Fiori = ? **T. polystachyum**

melilotus-indica L. = **Melilotus indicus**

neglectum C. A. Mey. = **Trifolium fragiferum**

petitianum A. Rich., incl. var. *cuneatum* Bak. f. = **T. acaule**

preussii Bak. f. = **T. rueppellianum** var. **rueppellianum**

procumbens L. 1755 p.p. = **T. campestre**

pseudocryptopodium Chiov. ex Fiori = **T. usambarense**

pumilum Hossain = **T. campestre**

repens Thunb., non L. = **T. burchellianum** subsp. **burchellianum**

rueppellianum Fresen. var. *lanceolatum* J. B. Gillett = **T. lanceolatum**

rueppellianum auctt., non Fresen. = **T. baccarinii**

fa. *minor* A. Chev. = **T. baccarinii**

scaettae Staner, nom. = **T. pseudostriatum**

schimperianum Hochst. ex Bak. = **T. steudneri**

semipilosum Fresen. var. *kilimanjaricum* Bak. f. and var. *microphyllum* Chiov. and var. *sennii* Chiov. ex Fiori = **T. semipilosum** var. **semipilosum**

speciosum Willd. var. *erubescens* (Fenzl) Fenzl = **T. erubescens**

suaveolens Willd. = **T. resupinatum**

subrotundum Harms = **T. tembense**

subrotundum Steud. & Hochst. ex A. Rich., p. maj. parte = **T. rueppellianum** var. **rueppellianum**

subrotundum Steud. & Hochst. ex A. Rich. var. *obcordatum* Welw. ex Hiern = **T. burchellianum** subsp. **burchellianum**

subrotundum Steud. & Hochst. ex A. Rich. var. *stipuli-incissis* A. Rich. = **T. mattirolianum**

umbellulatum A. Rich. = **T. tembense**

wentzelianum Harms var. *stolzii* (Harms) J. B. Gillett = **T. stolzii**

TRIGONELLA / *6*

A large genus with c. 80 (or 135?) species most of which occurring in the dry regions around the Mediterranean; a few in S. Africa; only one species in S Australia.

GAZAR, M. (2003). See under *Melilotus* above, p. 146.

KAWASHTY, S. A. & al. (1998). The chemosystematics of Egyptian Trigonella species. *Biochem. Syst. Ecol.* 26: 851-856.

PETROPOULOS, G. A., Ed. (2002). *Fenugreek: The genus Trigonella.* (Medicinal and Aromatic Plants – Industrial Profiles), Taylor & Francis, New York, NY. XVI + 200 pp.

STEELE, K. & M. F. WOJCIECHOWSKI (2003). See above under *Medicago,* p. 144.

Trigonella anguina Del.

Annual prostrate herb.; stems many from the base, ± glabrous to sparsely white-hairy, to 35 cm long; flowers yellow, longer than calyx; pod wavy, sharply folded, 2-6-seeded.

Sandy reg, plateaux, grara (depression) with *Euphorbia balsamifera, E. echinus;* wadis, sandy and silty alluvium; irrigated sandy cultivations, open waste places; very abundant from the coastal sandy grara to the inner sandy hamada (N Western Sahara).

Macaronesian Isl.; N Africa to Egypt, Sinai, Arabia, S Iran, Pakistan. Introduced into tropical Africa and S. Africa.

Cultivated in Zimbabwe (Fl. Zambes. 3/7: 40, 2003).

T. falcata Balf. f.

Annual aromatic herb; stems ascending, glabrous, to 20 cm long; corolla yellow, longer than the calyx; pod linear, strongly curved, 12-seeded.

Evergreen bushland in open grassy area; 1350 m alt.

Socotra.

[T. foenum-graecum L.] – Fenugreek.

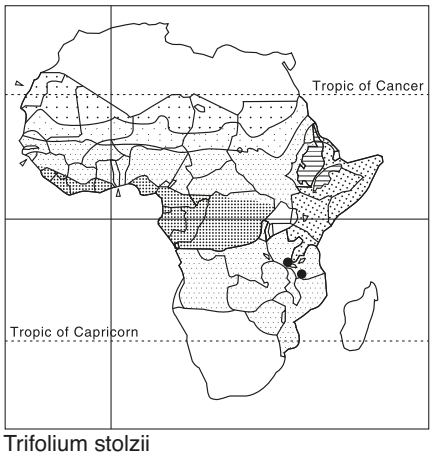
Erect aromatic annual herb to 50 cm tall, rather long pale yellow or white flowers and pods with a long beak.

Native of S Europe and Asia. Cultivated for its seeds (one of the oldest medicinal plants known to mankind in the Sahel of W Africa and in NE, E and S Africa).

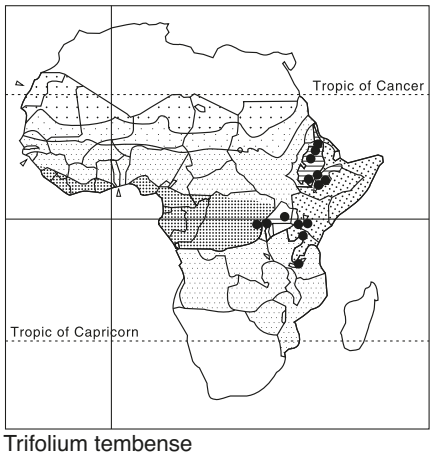
Not mapped.

T. glabra Thunb. 1800 – Icon.: Wu & Huang in Taiwania 44: 381, 1999 (sub. nom. *T. hamosa* Forssk.).

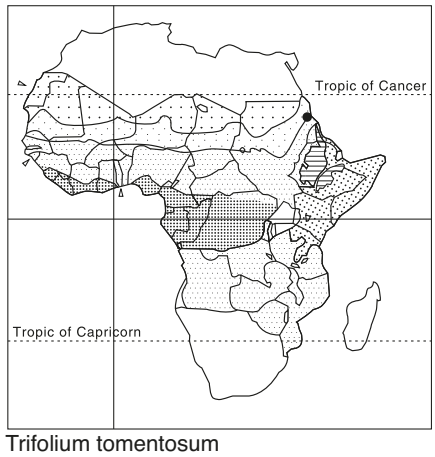
syn.: *T. hamosa* Forssk. 1775, non *T. hamosa* L. 1759 nom. rej. prop. (Lassen in Taxon 36: 478, 1987), rejection not recommended (Taxon 42:688, 1993) *[T. hamosa* L. not to displace *T. hierosolymitana* Boiss. = *T. kotschyi* Boiss. var. *hierosolymitana* (Boiss.) Širj., in Israel and Jordan]. – Currently cited as *"T. hamosa* L." in floras.



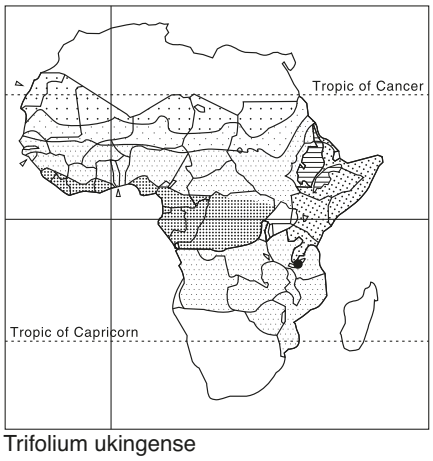
Trifolium stolzii



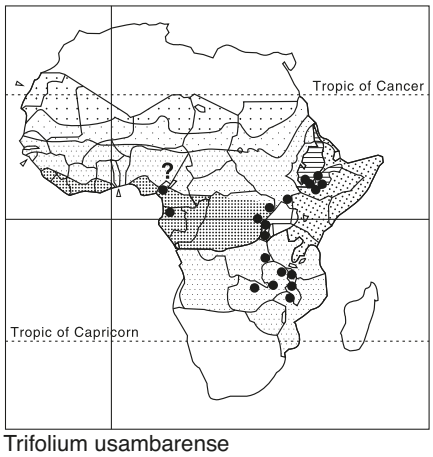
Trifolium tembense



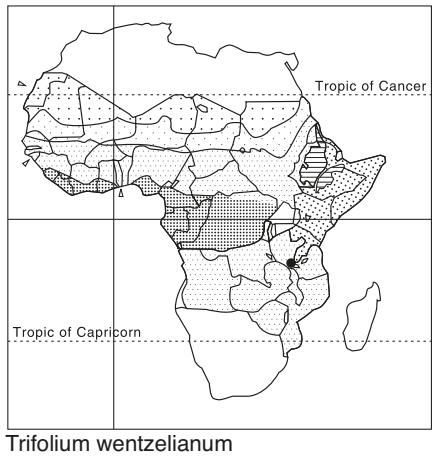
Trifolium tomentosum



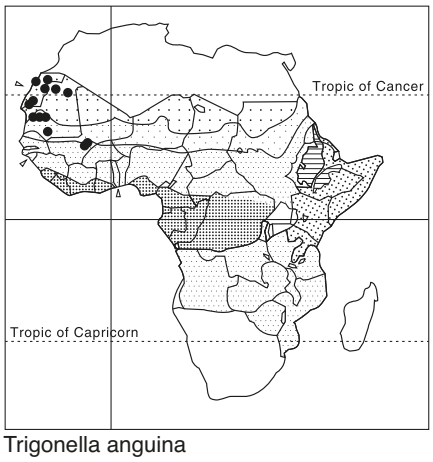
Trifolium ukingense



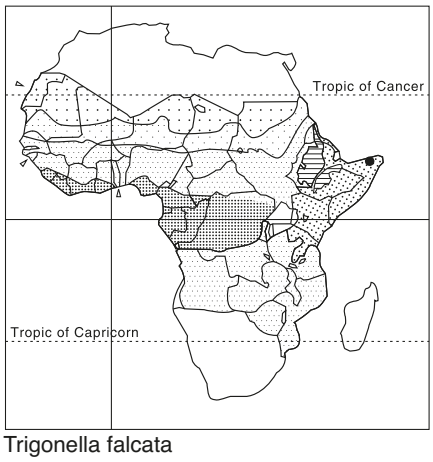
Trifolium usambarense



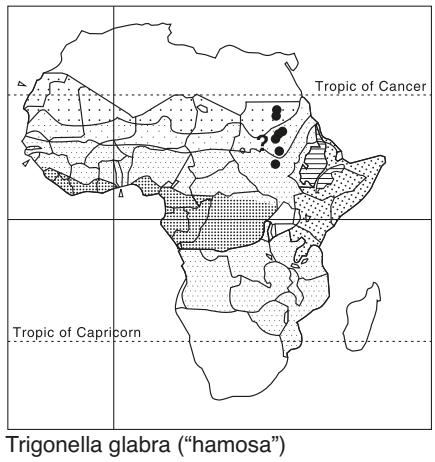
Trifolium wentzelianum



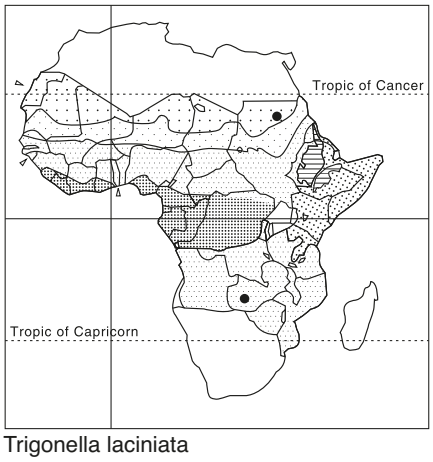
Trigonella anguina



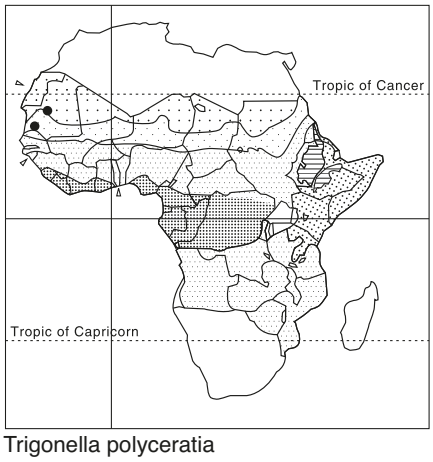
Trigonella falcata



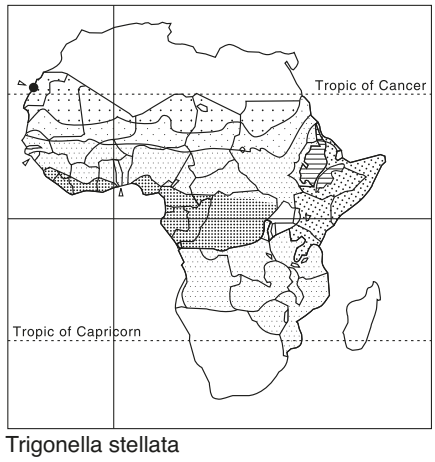
Trigonella glabra (“hamosa”)



Trigonella laciniata



Trigonella polyceratia



Trigonella stellata

TRIGONELLA GLABRA

Annual green herb; stems erect to procumbent, branching from base, 10-35 cm long, pubescent when young; flowers yellow in subumbellate long-pedunculate racemes; pod falcate to semicircular, 8-16-seeded.

Ecology not recorded for Sudan. In Egypt: cultivated ground, sandy soils, roadsides.

E Mediterranean Region, Egypt, Sinai, Arabia, Jordan, Syria east to Iraq, S Iran, N India; S. Africa. Probably introduced in Taiwan (Wu & Huang, o.c.).

T. laciniata L. – Icon.: Fl. Zambes. 3(7): 41, 2003.

syn.: *T. arguta* Vis.

Annual herb to 30 cm tall or long; stems erect or ascending, many from the base, or simple and branched above; flowers yellow in sessile axillary heads; corolla longer than calyx; pod straight, not long-beaked, 6-10-seeded, deflexed.

Ecology not recorded for Sudan (in Egypt: sandy and clay soils, fields, gardens); along a stream emanating from hot springs, alluvial clay on river banks and in dry lagoons, in *Vossia* grassland [Zambia; fa **arguta** (Vis.) Sick.]

Algeria, Egypt; Saudi Arabia, Middle East.

(T. occulta Ser. in DC.)

Annual herb sparingly pilose to densely villous; stems erect or ascending to 20 cm long; stipules conspicuous; corolla yellow, shorter than calyx; pod 2-3 mm, 1-2-seeded.

The morphological description given by Broun & Massey in Fl. Sudan: 181, 1929, and also by Andrews, Fl. Pl. Anglo-Eg. Sudan 2: 243, 1952, does not fit the one quoted above (from Boulos, Fl. Egypt 1: 264, 1999).

To us the Sudan plant seems to be near *T. laciniata.* In addition, *T. occulta* is endemic to Egypt.

T. polyceratia L. – Icon.: L. Boulus, Fl. Egypt 1: 273, 1999 (as *Medicago polyceratia);* S. Castroviejo, Fl. Iber. 7(2): 738, 2000.

syn.: *Medicago polyceratia* (L.) Sauvages ex Trautv.; *Trigonella pinnatifida* Cav.; *T. polyceratoides* Lange; *T. x ambigua* Samp.; *T. amandiana* Samp.

Annual herb, pubescent when young; stems prostrate or ascending, many from the base, branched, angled, 10-25 cm long; peduncles short, 1-6-flowered; corolla yellow; pod cylindrical, linear, curved.

Cultivations.

Iberian Peninsula, S France; Morocco, Algeria, Tunesia, Egypt. Introduced into W Europe. Adventive in Niger: Central Aïr, gardens.

Resembling *T. foenum-graecum* in flower and pod, but the wing petals different (with a distinct long horn) and standard petal (with limb and claw). For the latter reasons the species was transferred to *Medicago* (E. Small in Canad. J. Bot. 65: 1199-1211, fig. p. 1208, 1987). Some recent works follow Small, e.g. Greuter & al., Med. Checklist 4: 141-142, 1989, and Boulos, Fl. Eg. 1: 275-276, 1999, whereas Castroviejo (& al.), Fl. Iber., l.c., and Kawashty & al., o.c.: 851-852 retain the species as a member of *Medicago.* We follow the latter option.

T. stellata Forssk.

Annual ± glabrous herb; stems many, prostrate, often stiff at base; flowers in leaf axils; corolla yellow, longer than calyx; pods curved, stellary spreading, with prominent transverse nerves. – *Medicago*-like.

TRIGONELLA STELLATA

No ecology recorded in Western Sahara (in Palestine: wadis, hills, roadsides, mainly in hot deserts).

Macaronesia; N Africa to Egypt, Sinai; Arabia; E Mediterranean Region to Iraq, Iran.

Adventive in Western Sahara?

SYNONYMS:

Trigonella amandiana Samp. = **Trigonella polyceratia**

x *ambigua* Samp. = **T. polyceratia**

arguta Vis. = **T. laciniata**

hamosa Forssk., non L. = **T. glabra**

"hamosa L." = **T. glabra**

marginata Hochst. & Steud. ex Bak., nom. inval. = **Trifolium baccarinii**

multinervis Hochst. & Steud. = **Trifolium multinerve**

pinnatifida Cav. = **Trigonella polyceratia**

polyceratoides Lange = **T. polyceratia**

schimperi Hochst. & Steud. = **Trifolium**

tomentosa Thunb. = **Cullen tomentosum**

URARIA / *2*

Fruits folded; segments nearly separated.

Uraria gossweileri Bak. f.

Perennial herb with pubescent terete stems; upper leaves 1-3-foliolate, leaflets ovate; pod of 3 segments.

Savanna; c. 1730 m alt.

U. picta (Jacq.) DC.

bas.: *Hedysarum pictum* Jacq.

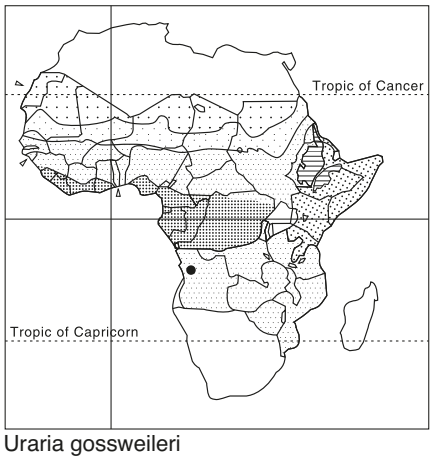
Erect woody herb or subshrub with scabrid short-hairy stem 0,2-1,8 m tall; upper leaves 5-9-foliolate, leaflets lanceolate; inflorescence dense, villous, long (10-55 cm) with pinkish bracts; calyx with long white-brown tubercular-based hairs; corolla small, pink, bluish or reddish; pod of 3-6 segments.

Grassland, *Acacia* grassland, grassland with scattered trees; rocky ground, sandy deep soil; riverbanks, floodplains; gallery forest and humid places (Senegal), depressions, rice fields; reed-beds, herb-grown *Andropogon* beds and pastures (Angola); sisal estates; roadsides, abandoned cultivations and any open spaces; 0-2400 m alt.

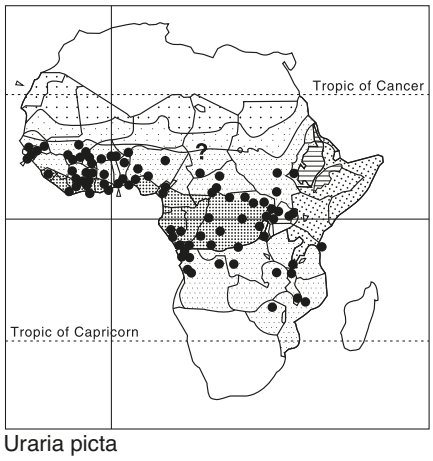
India, SE Asia tropics, Philippines to N Australia.

Absent from most of E and NE Africa.

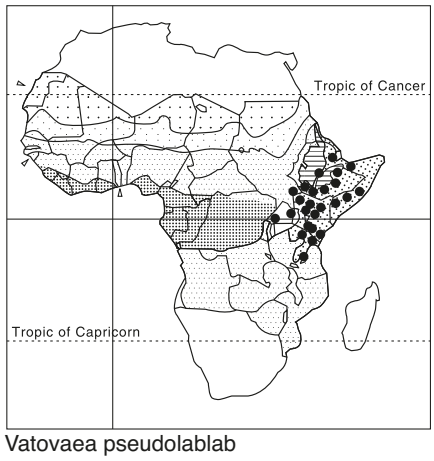
No material collected in Fl. Zambes. area later than 1956 was seen by Verdcourt for his treatment (vol. 3, part. 6: 35, 2000).



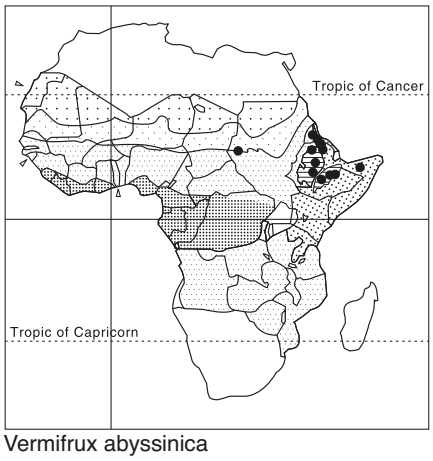
Uraria gossweileri



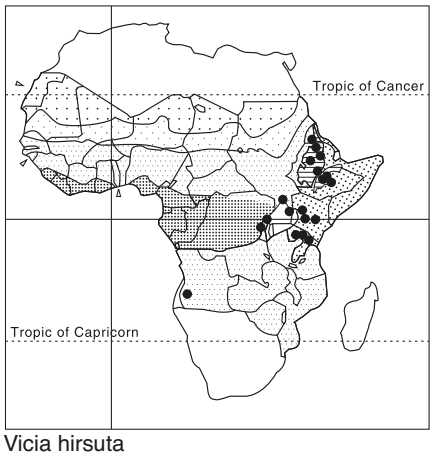
Uraria picta



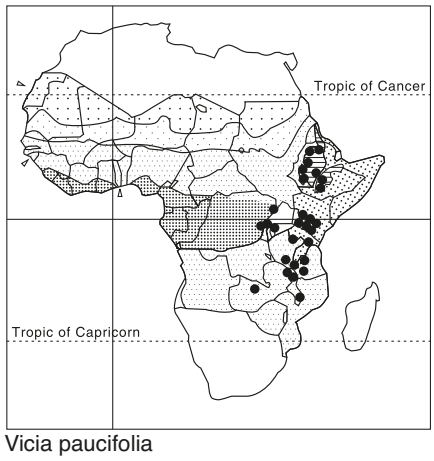
Vatovaea pseudolablab



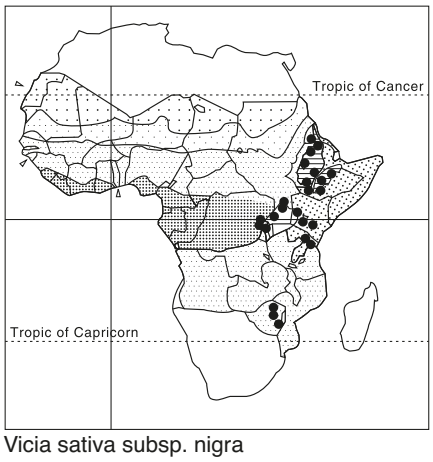
Vermifrux abyssinica



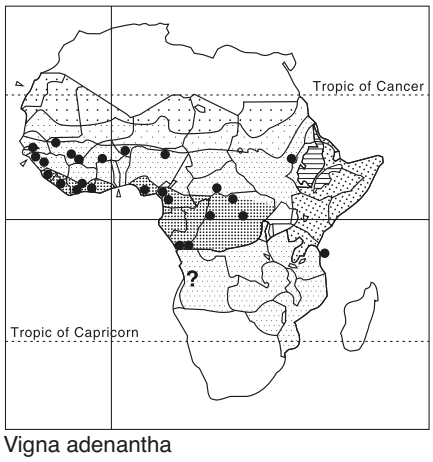
Vicia hirsuta



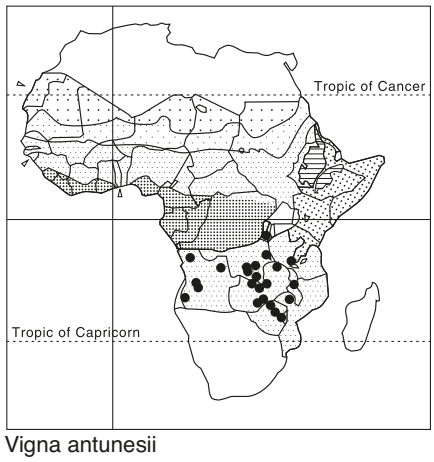
Vicia paucifolia



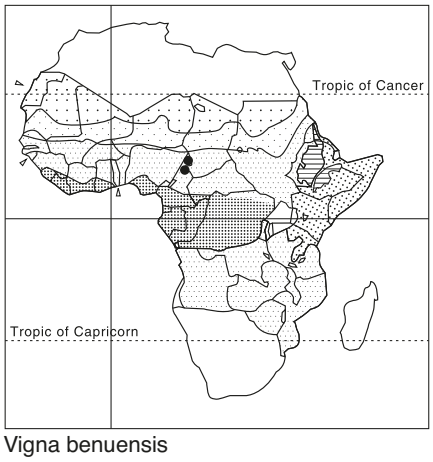
Vicia sativa subsp. nigra



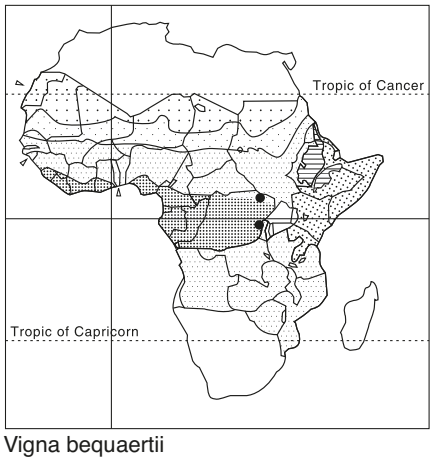
Vigna adenantha



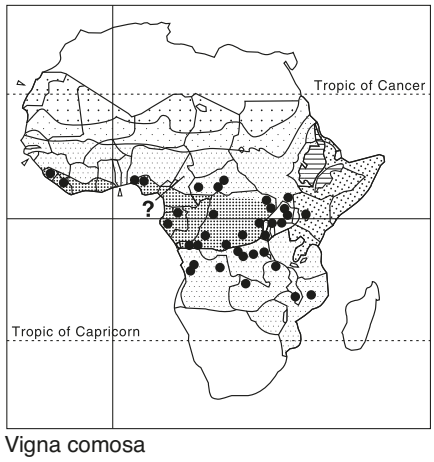
Vigna antunesii



Vigna benuensis



Vigna bequaertii



Vigna comosa

VATOVAEA / *1*

Monotypic genus.

Vatovaea pseudolablab (Harms) J. B. Gillett

syn.: *Phaseolus cibellii* Chiov.; Enum. 2 : 123, 1992.

Woody climber with branched often nodulous, pale reddish brown glabrous to sparsely pubescent stems 1-2 m tall from an enormous woody tuber; young quite herbaceous plants may flower; inflorescence long (50 cm), many-flowered; flowers (sometimes before leaves) large, green and purple to blue; standard with a pair of large stiff erect appendages near base; pod flattened, long.

Dry and semi-desert grassland, (*Acacia)* bushland, occasionally on seasonally wet clay grassland; 140-1500 m alt.

Oman, Yemen (Thulin & al., in Biodiversity Res. Horn of Africa, Biol. Skr. 54 : 148, 2001).

In some specimens from Somalia, i.a. the original material of *P. cibellii* the reflexed apical appendage of the style is lacking. Further studies desirable as to their taxonomic status (fide Thulin, Fl. Somal. 1: 72, 1993).

VERMIFRUX / *1*

Monotypic genus.

LÓPEZ GONSÁLEZ, G. (2004). On Anthyllis onobrychioides Cav. and the genus Dorycnopsis Boiss. (Leguminosae-Loteae). *Anal. Jard. Bot. Madrid* 61: 181-184.

Vermifrux abyssinica (A. Rich.) J. B. Gillett

bas.: *Helminthocarpon abyssinicum* A. Rich.

syn.: *Dorycnopsis abyssinica* (A. Rich.) V. Tichom. & D. D. Sokoloff, Feddes Repert. 108 : 342, 1997; *Antopetitia cancellata* Hochst., nom. prov.

Perennial herb with numerous ± procumbent pubescent stems to 40 cm long; flowers yellowish-red, 4-6 in heads; pod falcate, indehiscent.

Grassy patches in degraded forest, upland grassland and bushland, stream banks; 1340-3400 m alt.

Yemen.

VICIA / *3*

ENDO, Y. & H. OHASHI (1998). Morphological and Anatomical Features of Nectary on Calyx-Tooth of the Genus Vicia (Leguminosae) and Their Systematic Utility. *J. Japanese Bot.* 73 : 92-101.

JAASKA, V. (1997). Isoenzyme diversity and phylogenetic affinities in Vicia subgenus Vicia (Fabaceae). *Genet. Resources Crop Evol.* 44 : 557-574.

Vicia hirsuta (L.) S. F. Gray

bas.: *Ervum hirsutum* L.

Annual herb, trailing or climbing, 30-70 cm long; stems glabrous or thinly pubescent; leaf rhachis terminating in a slender branched tendril; flowers (2-5) in pedunculate racemes, white, rose or pale blue; pod 6-10 mm, 1-2-seeded. – Rather like *V. sativa* but smaller.

Upland grassland, evergreen bushland, scrub, forest margins and glades, lava plains; rocky area with montane grassland and scattered low ericaceous scrub, low subshrubs and herbs in rock crevices (Sudan, Imatong Mts); 1700-3450 m alt. (2700-3450 m in Ethiopia).

N Africa, Europe, Asia; introduced elsewhere.

V. paucifolia Bak.

syn.: *Lathyrus schimperi* Engl.; *L. kilimandscharicus* Taub. var. *scioanus* Fiori; *Vicia bequaertii* De Wild.; *V. claessensii* De Wild.; *V. volkensii* Taub.; *V. paucifolia* Bak. var. *paucifolia.* – All of subsp. **paucifolia.**

Perennial delicate herb, straggling, climbing or ± erect, 0,3-1 m tall; young stems densely long-hairy; leaflets 3-4(-7); rhachis terminated by a simple or branched tendril; racemes of 5-8 blue or violet flowers; pod 2-4 cm long, 5-11-seeded.

Grassland, forest edges, roadside verges, bushland; usually in moist places; thick herbage in marshy places and mushitu margins or in wet places by rivers (subsp. **malosana**); 1220-2750 (-3800) m alt.

Variable in width of leaflets and in length of peduncle.

Comprises 2 subspp.: – subsp. **malosana** (Bak.) Verdc. [syn.: *Vicia malosana* (Bak.) Bak. f.] in S part of range, with ± sessile leaves, 2 pairs of leaflets, simple tendrils. – Icon.: Fl. Zambes. 3(7): 25, 2003.

V. sativa L. subsp. **nigra** (L.) Ehrh.

bas.: *V. sativa* var. *nigra* L.

syn.: *V. angustifolia* L.; *V. angustifolia* subsp. *segetalis* (Thuill.) Corb.; *V. segetalis* Thuill.; *V. cuneata* Guss.; *V. sativa* var. *abyssinica* (Alef.) Bak.; *V. abyssinica* Alef.; *V. sativa* var. *aristulata* Chiov.; *V. basilei* Sennen & Mauricio; *V. heterophylla* C. Presl; *V. sativa* subsp. *angustifolia* (L.) Batt.; *V. sativa* subsp. *cuneata* (Guss.) Maire and subsp. *heterophylla* (C. Presl) J. Duvign. and subsp. *segetalis* (Thuill.) Čelak.; for full synonymy, See Greuter & al., Med-Checklist 4 : 211, 1989.

Annual herb, straggling or ascending, 10-80 cm long; stems angular, glabrescent to sparsely pubescent with short spreading hairs; rhachis of upper leaves with a well-developed branched tendril; leaflets 6-16; flowers purplish, 1-2, ± sessile.

Upland grassland and scrub, evergreen bushland, dense herbage, bamboo and other upland forests, forest edges and glades; rocky area with montane grassland and scattered low ericaceous scrub, low subshrubs and herbs in rock crevices (Sudan, Imatong Mts); steppe with *Acanthus,* abandoned cultivations, lava fields (Zaire); sometimes a weed; 1000-3360 m alt. (1000-1400 m in Fl. Zambes. area; 1500-3360 m in E Africa).

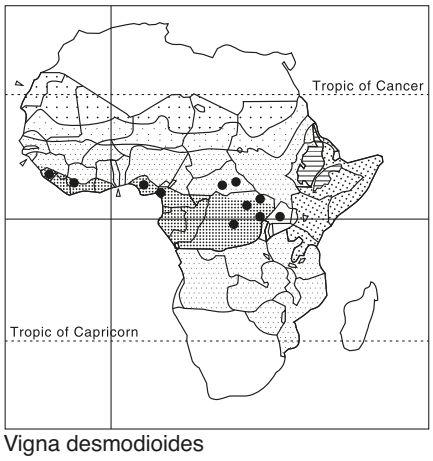
N Africa; Europe; Sinai and tropical Arabia, Middle East to NW India.

LEHT, M. & V. JAASKA (2002). Cladistic and phenetic analysis of relationships in Vicia subgenus Vicia (Fabaceae) by morphology and isozymes. *Pl. Syst. Evol.* 232 : 237-260.

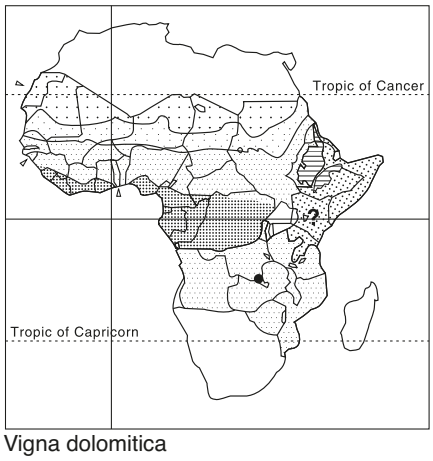
MARIN, P. D. & al. (1998). Seed sculpturing of selected European Vicia L. species (Fabaceae) and their taxonomical evaluation. *Seed Sci. & Technol.* 26 : 17-32.

A wild variant of the cultivated **V. sativa** subsp. **sativa,** a robust plant, also cultivated in E Africa and Angola, and widespread as an escape.

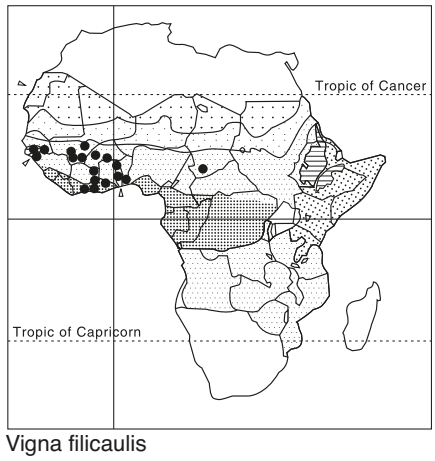
V. sativa is a polymorphic species and sometimes the 7-8 subspecies recognized are not well defined as intermediates occur.



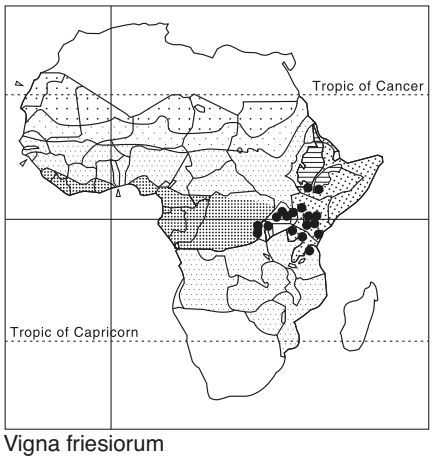
Vigna desmodioides



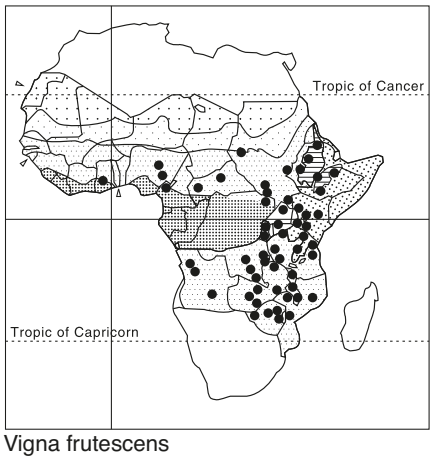
Vigna dolomitica



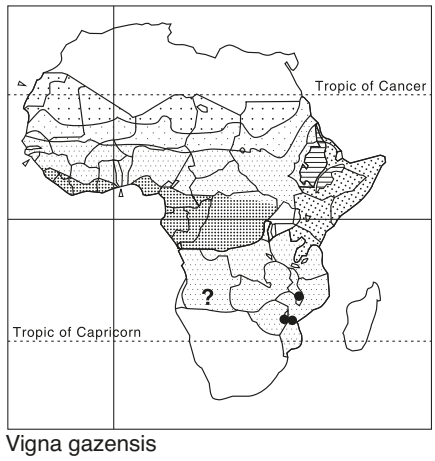
Vigna filicaulis



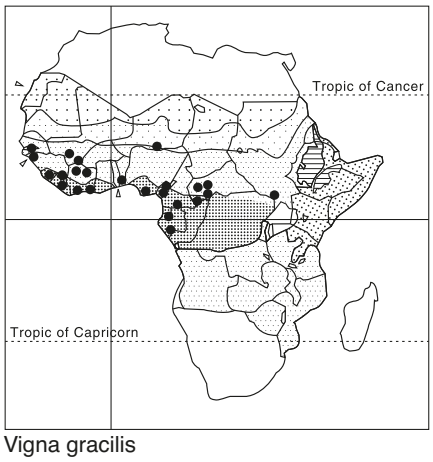
Vigna friesiorum



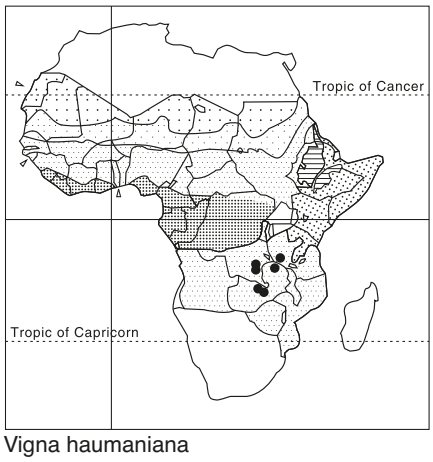
Vigna frutescens



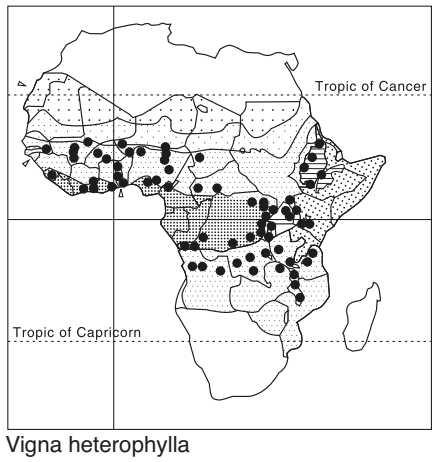
Vigna gazensis



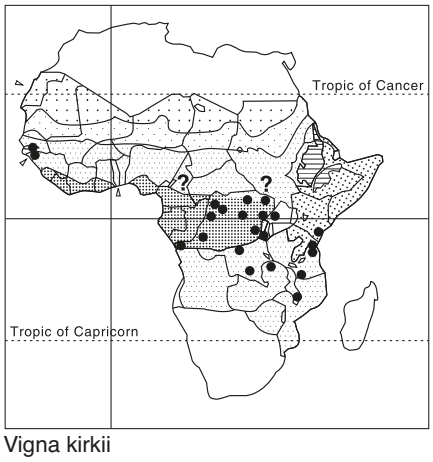
Vigna gracilis



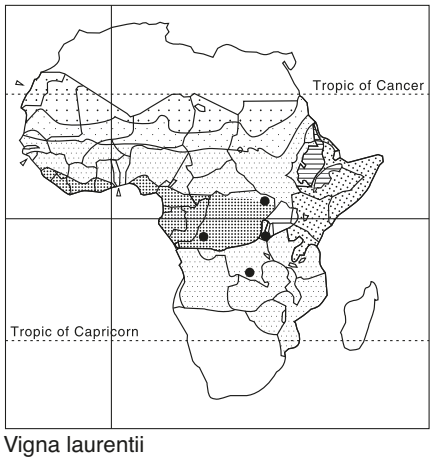
Vigna haumaniana



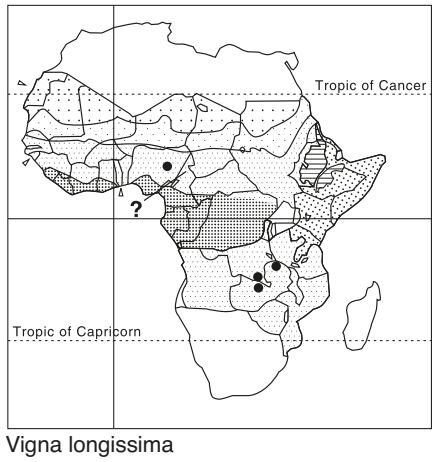
Vigna heterophylla



Vigna kirkii



Vigna laurentii



Vigna longissima

VICIA

V. sp. A. sensu Verdcourt in Fl. Trop. E. Afr., Legum. 4, Papil. 2 : 1070, 1971.

A ? perennial herb with ascending stems 6-16 cm long from a slender rootstock, 2-foliolate leaves and yellowish (becoming bluish) solitary flowers ; very close to *V. paucifolia* but considered a new species ; from Kenya (K3), pasture in cleared forest at 2650 m alt.

Not mapped.

Several species of **Vicia** are introduced ; cf. Enum. 2 : 124, 1992.

VIGNA / *45*

Vigna Savi conserved against *Cadelium* Medik. with correction of the Tokyo Code entry (accidentally introduced ; cf. Taxon 54 : 528, 2005).

* * *

"A complex and difficult genus of about 150 species in the tropics of the Old and New Worlds. Most are herbaceous climbers, and several species are cultivated for fodder, and as pulse crops." (J. M. Lock & C. Ford, Legumes of Malesia : A check-list. Royal Botanic Gardens, Kew, 2004 : 221).

For our area the fruit is unknown in one species (*V. dolomitica)*, seeds have not been seen in 2 species (*V. richardsiae, V. virescens)*, and 2 species are known only from the type (*V. mendesii, V. tisserantii)*.

* * *

BEYRA, A. & G. REYES ARTILES (2004). Revisión taxonómica de los géneros Phaseolus y Vigna (*eguminosae-Papilionoideae)* en Cuba. *Anal. Jard. Bot. Madrid* 61 : 135-154 [with illustrations !].

GARBA, M. & R. S. PASQUET (1998). Isozyme polymorphism within section Reticulatae of genus Vigna (Tribe Phaseoleae : Fabaceae). *Biochem. Syst. Ecol.* 26 : 297-308.

JAASKA, V. (1999). Isoenzyme diversity and phylogenetic affinities among the African beans of the genus Vigna Savi (Fabaceae). *Biochem. Syst. Ecol.* 27 : 569-589.

KAGA, A. & al. (2004). Molecular markers in Vigna improvement : Understanding and using gene pools. *In :* LÖRZ, H. & G. WENZEL, Eds., *Molecular Marker Systems :* 171-187. (Biotechnology in Agriculture and Forestry 55). Springer-Verlag, Berlin & Heidelberg.

KONAREV, A. V. & al. (2002). Proteinase inhibitor polymorphism in the genus Vigna subgenus Ceratotropis and its biosystematic implications. *Euphytica* 123 : 165-177 [*V. luteola, V. unguiculata*].

NG, N. Q. & B. B. SINGH (1997). Cowpea. *In :* FUCCILLO, D. & al., Eds., *Biodiversity in trust :* 82-99. Cambridge University Press.

OBUTE, G. C. & R. E. UGBOROGHO (1997). Meiotic chromosome behaviour in Vigna unguiculata (L.) Walpers (Phaseoleae : Fabaceae). *Rev. Cytol. Biol. Végét. Botaniste* 20(1/2) : 15-22.

PASQUET, R. S (2001). Notes on the genus Vigna (Leguminosae-Papilionoidae). *Kew Bull.* 56 : 223-227.

PASQUET, R. S. (2002). Proposal to conserve Vigna nom. cons. (Leguminosae) against an additional name, Cadelium. *Taxon* 51 : 819.

PASQUET, R. S. & J.-P. BAUDOIN (1997). Le niébé. *In :* CHARRIER, A.. & al., Eds., *L'amélioration des plantes tropicales :* 483-505. CIRAD-ORSTOM, Paris.

PASQUET, R. S. & VANDERBORGHT, T. (1999). Isozyme polymorphism in some yellow- and blue-flowered Vigna species complexes (Fabaceae, Phaseoleae). *Pl. Syst. Evol.* 215 : 1-21.

PASQUET, R. S. & VANDERBORGHT, T. (2000). Isozyme polymorphism in the Vigna frutescens-V. membranacea complex (Tribe Phaseoleae, Fabaceae). *Biochem. Syst. Ecol.* 28 : 29-43.

VIGNA

PELLEGRIN, F. (1944). Vigna (Papilionées) de l'Oubangui. *Bull. Soc. Bot. France* 91 : 73-75.

SONNANTE, G. & al. (1997). Isozyme and RAPD Analysis of the Genetic Diversity within and between Vigna luteola and V. marina. *Ann. Bot.* 80 : 741-746.

SPINOSA, A. & al. (1998). Assessment of genetic variation in a working collection of Vigna vexillata (L.) A. Rich. by isozyme and RAPD analyses. *Genet. Resources & Crop Evol.* 45 : 347-354.

UGURU, M. I. (1998). Traditional conservation of vegetable cowpea in Nigeria. *Genet. Resources & Crop Evol.* 45 : 135-138.

VENORA, G. & S. PADULOSI (1997). Karyotypic analysis of wild taxa of Vigna unguiculata (L.) Walpers. *Caryologia* 50 : 125-138.

VENORA, G. & al. (1999). Karyotype analysis of twelve species belonging to genus Vigna. *Cytologia* 64 : 117-127.

Vigna adenantha (G. F. W. Mey.) Maréchal, Mascherpa & Stainier ; Boissiera 28 : 229!, 1978. – Icon.: Beyra & Reyes (2004) : 143.

syn.: *Phaseolus rostratus* Wall.; *P. truxillensis* Kunth

Climbing nearly glabrous perennial herb to 4 m long.

Riparian formations ; edges of swamps with *Papyrus ;* sea-shore ; banks of river estuaries ; occasionally by inland streams.

Perhaps native of the Neotropics ; introduced in all other tropical countries ?

V. antunesii Harms – Icon.: Belg. J. Bot. 125 : 53, 1992 (sub *V. nuda).*

syn.: *Liebrechtsia ringoetii* De Wild.; *Vigna nuda* N. E. Br.; *V. ringoetii* (De Wild.) De Wild.; *V. hundtii* Rossberg

Perennial herb from a thick, often extensively branched, frequently horizontal woody rootstock, nearly always flowering before the leaves appear ; stem at first erect, later prostrate or, less often, climbing, 0,6-1,8 m tall or long, glabrous or puberulous on the leafy shoots, densely pubescent or setulose when young but later glabrescent ; running roots 1-1,5 m long, 1 cm Ø.

Seasonally burnt grassland ; dry forest ; 900-2000 m alt.

The specimen Baum 196 = *V. unguiculata* subsp. *stenophylla.*

V. benuensis Pasquet & Maréchal

Annual herb with pubescent, angular stems ; main stem first erect, then bent downwards, 20-40 cm long ; secundary stems prostrate to 3 m long ; inflorescence sometimes subterranean and leafless.

Roadsides.

Near *V. heterophylla, V. filicaulis, V. hosei.*

V. bequaertii R. Wilczek ; Boissiera 28 : 167, 1978.

Perennial climbing herb, hirsute with yellow-golden hairs ; flowers 2,2-3,5 cm long.

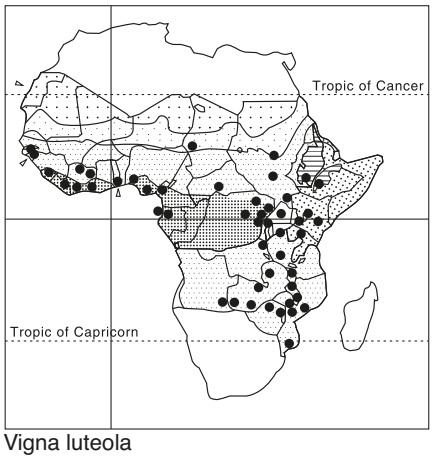
Savanna ; riparian formations.

V. comosa Bak.; Boissiera 28 : 180, 1978.

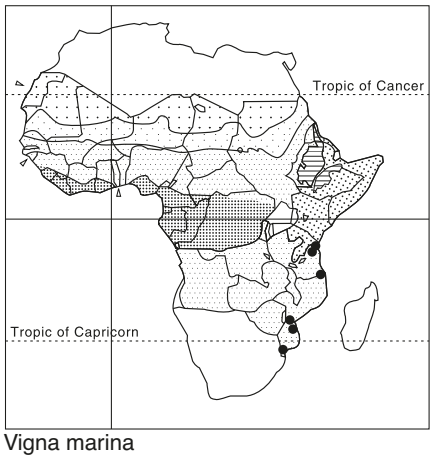
Perennial prostrate or climbing herb 0,4-1,2 m long ; stem rather graceful to somewhat robust, covered with dense short white pubescence.

Laterite rock in dry dambos ; rocky outcrops and escarpments ; sandy plateau grassland ; grassy- and wooded savannas ; water sides ; old clearings ; *Loudetia arundinacea* grassland with scattered trees ; heath formations ; bushland ; 420-2100 m alt.

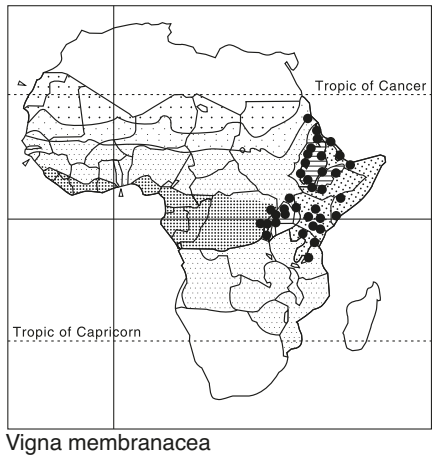
Introduced in S. Africa (subsp. **comosa)**.



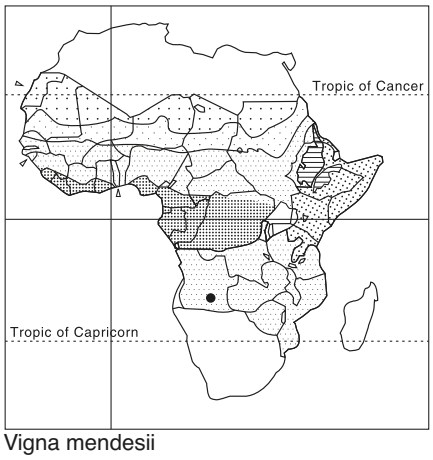
Vigna luteola



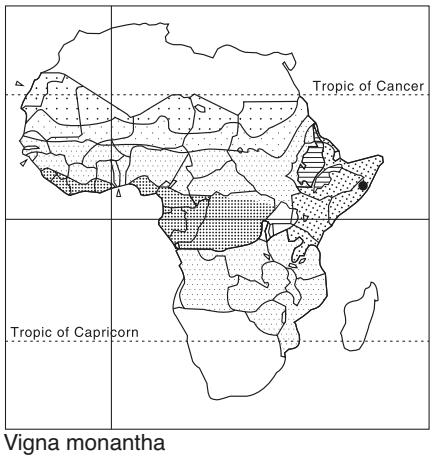
Vigna marina



Vigna membranacea



Vigna mendesii



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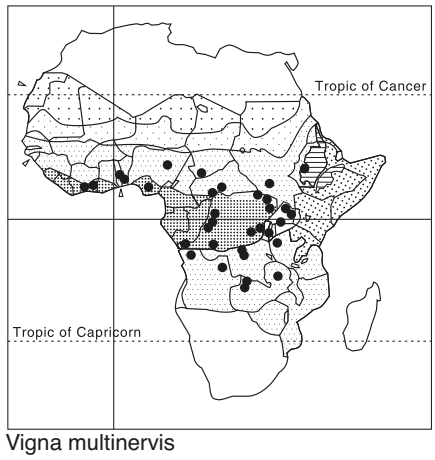
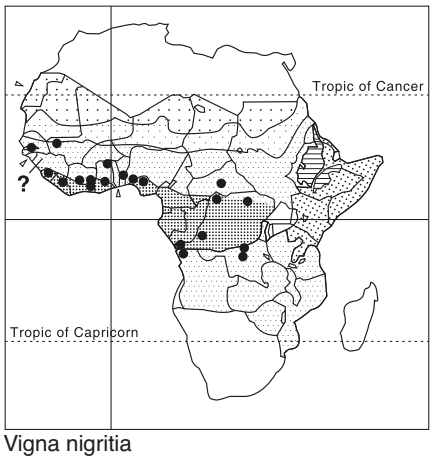
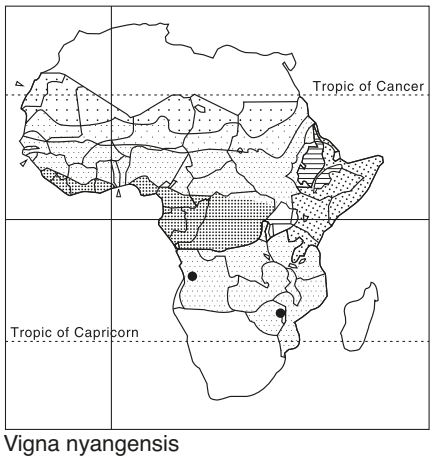


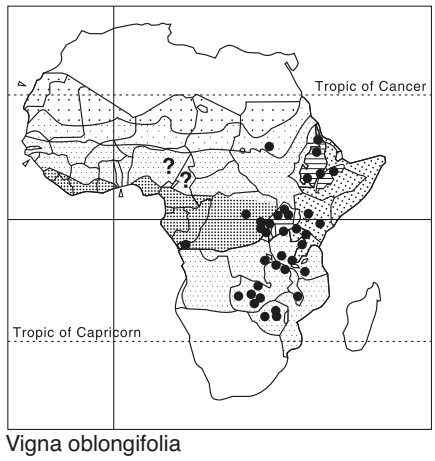
Vigna multinervis



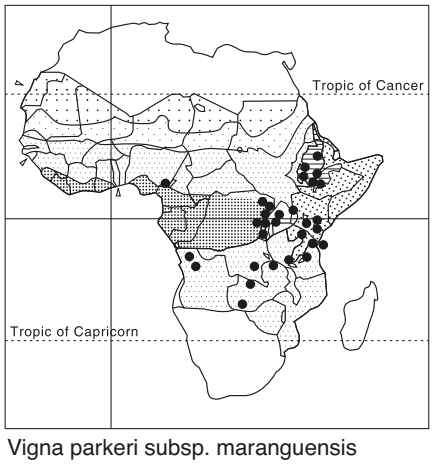
Vigna nigritia



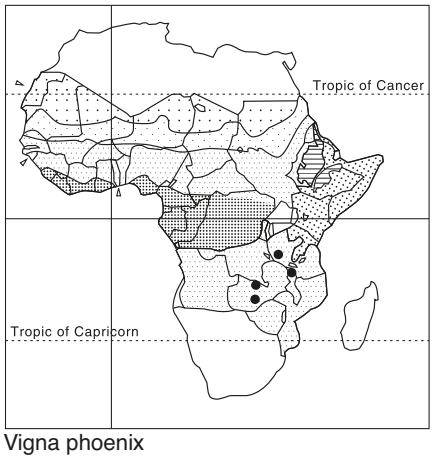
Vigna nyangensis



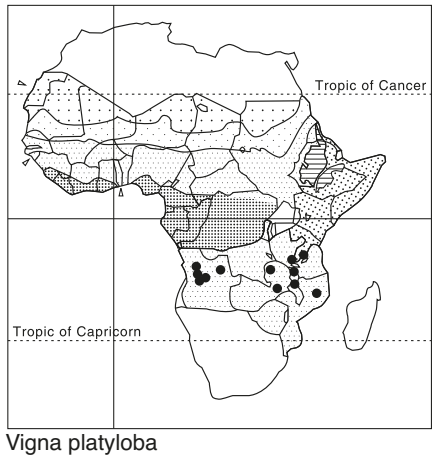
Vigna oblongifolia



Vigna parkeri subsp. maranguensis



Vigna phoenix



Vigna platyloba

VIGNA COMOSA

Comprises 2 subspp.: – subsp. **comosa** [syn.: *V. lebrunii* Bak. f.; *V. ntemensis* Pellegr.; *V. micrantha* Harms, incl. var. *lebrunii* (Bak. f.) R. Wilczek, non Chiov. (= *V. heterophylla); V. comosa* var. *lebrunii* (Bak. f.) Verdc.]; – subsp. **abercornensis** Verdc.

V. desmodioides R. Wilczek; Boissiera 28: 176, 1978.

Perennial climber 1,2-2,4 m long; stems covered with long yellow hairs.

Evergreen humid forest.

V. dolomitica R. Wilczek; Boissiera 28: 186, 1978.

Prostrate, tomentose to pubescent plant with greyish hairs; fruit unknown.

Dolomitic rocks.

V. filicaulis Hepper; Boissiera 28: 169, 1978.

Perennial herb; stems slender and wiry, pubescent, 60-100 cm long.

Swamp; grassland; humid meadows; periodically flooded areas.

Comprises 2 vars.

V. friesiorum Harms; Boissiera 28: 183, 1978.

Erect or decumbent perennial herb 7,6-30 cm tall, sometimes very ramose from the base, from a softly woody carrot-like or fusiform rootstock to 25 cm long; stems with dense to scattered spreading hairs.

Grassland; weed of wheat fields; deciduous bushland; *Combretum* woodland; grassland with scattered trees; 480-2400 m alt.

Comprises 3 vars.

V. frutescens A. Rich.; Boissiera 28: 188, 1978.

syn.: *V. decipiens* Harv.; *V. debanensis* Martelli; *Liebrechtsia esculenta* De Wild.; *Vigna pseudotriloba* Harms; *V. ledermannii* Harms; *V. glandulosa* Chiov.; *V. keniensis* Harms; *V. taubertii* Volkens ex Harms; *V. longiloba* Burtt Davy; *V. pongolensis* Burtt Davy; *V. sudanica* Bak. f.; *V. harmsiana* Buscalioni & Muschler; – All of subsp. **frutescens** var. **frutescens.**

Perennial herb from a woody rootstock (tuber often 5 cm wide), prostrate or climbing, 0,5-1,5 m long or erect at first and only 7-20 cm tall when appearing after burns, sometimes flowering before the leaves appear; stem sparsely pilose to densely ferrugineous pubescent, usually velvety, less often glabrous.

Woodland with *Combretum collinum, C. molle, Annona senegalensis;* or with *Combretum molle, Stereospermum kunthianum, Erythrina abyssinica, Entada abyssinica; Loudetia arundinacea* grassland on shallow soil, mostly subject to seasonal burning; bushland; cultivations; savanna (grassy or wooded); rocky screes; scrub; 500-2400 m alt.

Botswana, S. Africa, Namibia.

Comprises 3 subspp.: – subsp. **frutescens** with var. **frutescens** (synonyms, see above) and var. **buchneri** (Harms) Verdc. [syn.: *Vigna spartioides* Taub.; *Liebrechtsia spartioides* (Taub.) De Wild.; *L. katangensis* De Wild.; *L. schweinfurthii* De Wild.; *Vigna katangensis* (De Wild.) Th. Durand 1909, non De Wild. 1902 (= *Sphenostylis stenocarpa)*]; – subsp. **incana** (Taub.) Verdc.: – subsp. **kotschyi** (Schweinf.) Verdc. [syn.: *V. neumannii* Harms; *Liebrechtsia kotschyi* (Schweinf.) De Wild.].

VIGNA

V. gazensis Bak. f.; Boissiera 28:179, 1978.

Climbing perennial herb; stem sparsely pilose to velvety hairy.

Grassland; forest openings along streams; evergreeen forest margins; scrub; rocky grassland; river banks; 1200-2200 m alt.

Madagascar.

V. gracilis (Guill. & Perr.) Hook. f.; Boissiera 28: 175, 1978.

bas.: *Dolichos gracilis* Guill. & Perr.

syn.: *Vigna afzelii* Bak.; *V. parvifolia* Planch. ex Bak.; *V. racemosa* var. *glabrescens* Bak. f.; *V. occidentalis* Bak. f. – All of var. **gracilis.**

Slender extensively twining herb to 1 m long, spreading or reflexed pubescent.

Humid meadow and gallery edges; grassy savanna; swamp; old cultivations; fallow land; secondary formations; sunny places; to 600 m alt.

Very variable in foliage.

Bioko/Fernando Poo.

Comprises 2 vars.: – var. **gracilis** (synonyms see above); – var. **multiflora** (Hook. f.) Maréchal, Mascherpa & Stainier

V. haumaniana R. Wilczek, incl. var. *pedunculata* R. Wilczek; Boissiera 28: 181, 1978.

Erect subshrub, ± 0,7-1,2 m tall; stems branched, covered with dense whitish appressed pubescence.

Rocky hillsides; woodland; wooded or grassy savannas; rocks with *Uapaca robynsii* formation; miombo woodland on very dry sandy soil; granite kopje; 750-2100 m alt.

V. heterophylla A. Rich., incl. var. *heterophylla* R. Wilczek, var. *lanceolata* R. Wilczek; Boissiera 28: 172, 1978.

syn.: *V. abyssinica* Taub., incl. var. *ugandensis* Bak. f.; *V. ambacensis* Welw. ex Bak.,? incl. var. *pubigera* (Bak.) Maréchal, Mascherpa & Stainier; *V. stuhlmannii* Harms; *V. glabra* var. *villosa* sensu Hiern in Cat. Afr. Pl. Welw. 1: 260, 1896, non *V. villosa* Savi; *V. micrantha* Chiov., non Harms (= *V. comosa* subsp. *comosa)*; *V. chiovendae* Bak. f.; *V. congoensis* Bak. f.

Annual or perennial climbing, or rarely suberect herb 0,9-7 m long; stem pubescent, covered with spreading often dark ferruginous hairs 0,5-2 mm long.

Grassland; weed in wheat fields; bushland; sometimes by streams and in marshes; hollows; humid sands; along river sides; woodland; 750-2100 m alt.

[V. hosei (Craib) Backer] *excl.* subsp. *pubescens* Maréchal, Mascherpa & Stainier quoad spec. Troupin 5016 (Rwanda) = *V. sp. nov.* Boissiera 28: 172, 1978.

bas.: *Dolichos hosei* Craib

syn.: *Vigna oligosperma* Backer nom. nud.; *V. parkeri* subsp. *acutifoliola!* Verdc., excl. specimens from Ufipa and Zambia.

Annual or perennial, creeping herb to a few metres long; stem glabrous to villous, hairs to 0,8 mm long; flower *yellow* (not blue = *V. parkeri).*

Asian taxon used as a cover crop and naturalized in coastal plains from Kenya to Mozambique, around Lake Victoria.

Not mapped.

VIGNA

V. kirkii (Bak.) J. B. Gillett ; Boissiera 28 : 205, 1978.

Perennial or rarely annual climbing herb 1,8-4 m long ; stem glabrescent or with short appressed tubercular-based hairs which on the older stem lose their fine points and leave characteristic minute hooks.

Seasonally swampy grassland ; grassland with scattered trees ; old cultivations ; sandy soil by river in semi-desert bushland ; forests in river mouths ; 0-1250 m alt.

V. laurentii De Wild.; Boissiera 28 : 170, 1978.

Herbaceous liane 60-80 cm tall, yellowish pubescent.

Savanna ; swamp with *Loudetia ;* river sides.

V. longissima Hutch.; Boissiera 28 : 207, 1978.

Perennial erect herb 20-50 cm tall, sometimes trailing to 1 m long, with a fleshy rootstock and slender stems, ramose from the base, prostrate then ascendant, furrowed, sparsely hairy ; leaflets linear-lanceolate *all sessile* on the petiole. Pods known !

Open forests with *Brachystegia ;* damp sand ; sandy soil ; dambos ; wet pastures ; 1200-1700 m alt.

V. luteola (Jacq.) Benth., incl. var. *villosa* Micheli, *excl.* var. *villosa* Bak. (= *V. racemosa)* ; Boissiera 28 : 165, 1978. – Icon.: P. Beauv., Fl. Oware : t. 114, 1818 (sub nom. *Dolichos emarginatus)* ; Beyra & Reyes, Anal. Jard. Bot. Madrid 61 : 147 : 2004.

bas.: *Dolichos luteolus* Jacq.

syn.: *D. niloticus* Delile ; *D. emarginatus* P. Beauv. 1820, non Jacq. 1797 ; *D. repens* L.; *Scytalis helicopus* var. *major* E. Mey. and var. *minor* E. Mey.; *Vigna helicopus* (E. Mey.) Walp.; *Dolichos helicopus* (E. Mey.) Steud.; *Vigna nilotica* (Delile) Hook. f.; *V. lutea* (Sw.) A. Gray s. str.; *V. repens* (L.) O. Kuntze1891, non Bak., nom. illegit.; *V. fischeri* Harms ; *V. holstii* Harms ; *V. mildbraedii* Harms ; *V. jaegeri* Harms ; *V. nigerica* A. Chev.; *Dolichos luteus* Sw.; ? *Vigna longepedunculata* Taub.; *V. oblonga* sensu auctt., non Benth. (= *V. o-wahuensis* Vogel) ; *V. marina* subsp. *oblonga* sensu Padulosi 1993, non Benth.; *Vigna hirsuta* Feay ex Wood ; *V. acuminata* Hayata ; *Dolichos glycinoides* Kunth ; *Lablab javanicus* Miq.; *Orobus trifoliatus* Sessé & Moçino ; *Vigna villosa* Savi ; *Dolichos gangeticus* Roxb.; *Callicysthus volubilis* Endl.

Twining or trailing perennial herb 1,2-6 m long ; stems tough, creeping and bearing adventitious roots below ; stem sparsely covered with appressed hairs to densely covered with spreading ferruginous hairs, or glabrescent.

Fresh water shores : swampy grassland ; seasonally wet grassland ; reedy and sandy lake shores ; swamp forest ; *Papyrus* swamps ; stream sides ; forest edges ; 0-2200 m alt.

Bioko/Fernando Poo, Malabo Isl.; Egypt ; Botswana, Namibia, S. Africa. – Pantropical.

BOSCH, C. H. (2004). Vigna luteola (Jacq.) Benth. *In :* GRUBBEN, G. J. H. & O. A. DENTON, Eds., *Ressources végétales de l'Afrique tropicale 2. Légumes* [traduction de : Plant Resources of Tropical Africa 2. Vegetables]: 617-618. Fondation PROTA, Wageningen, etc.

PASQUET, R. S. (2004). New synonyms of Vigna luteola (Jacq.) Benth. (Leguminosae-Papilionoideae-Phaseoleae). *Kew Bull.* 59 : 637-638.

V. marina, V. oblongifolia are very close ; also confused with *V. o-wahuensis* Vogel (Hawaii = Sandwich Isl.).

VIGNA

V. marina (Burm.) Merr.; Boissiera 28 : 166, 1978.

bas.: *Phaseolus marinus* Burm.

syn.: *Scytalis retusa* E. Mey.; *Vigna retusa* (E. Mey.) Walp.; *V. lutea* (Sw.) A. Gray var. *samoensis* Hochr.

Climbing or scrambling perennial herb to several metres long ; stem thick, densely hairy when young, later glabrous or with a few scattered hairs.

Beach ; seashore ; recent sandstone ; coastal bushland ; sandy shores ; often with *Ipomoea pes-caprae ;* sea level and just above high tide mark.

Coast of E and S. Africa ; Madagascar ; Maldives ; Seychelles ; India, Sri Lanka, Bangladesh ; Philippines ; Japan ; Polynesia ; Australia ; America. – Adapted to marine environments.

V. membranacea A. Rich.; Boissiera 28 : 182, 1978.

Annual or perennial climbing or trailing herb, more rarely suberect 0,2-3 m long ; stems ridged, at first densely spreading pilose with usually rather tubercular-based hairs, later glabrescent.

Grassland ; scrub ; dry evergreen forest ; *Acacia, Commiphora* bushland ; coastal mixed bushland ; coastal grassland in thicket ; woodland ; swamp sides ; *Pennisetum* formations ; fallow land ; 0-2400 m alt.

SE Egypt.

Comprises 4 subspp.: – subsp. **membranacea** [syn.: *V. mensensis* Schweinf. var. *hastata* Chiov.; *V. leptodon* Harms]; – subsp. **caesia** (Chiov.) Verdc.: – subsp. **hapalantha** (Harms) Verdc.: – subsp. **macrodon** (Robyns & Boutique) Verdc.

V. mendesii Torre

Twining herb from a rhizome ; stems and branches glabrous ; leaflets elliptic, narrow.

Stream valley ; 1320 m alt.

Only known from the type collected in 1960.

V. monantha Thulin – Icon.: Nord. J. Bot. 11: 544, 1991.

Perennial herb with radiating trailing stems to 50 cm long ; young stems hirsute with somewhat retrorse hairs ; leaflets 3-lobed.

Sandy plains of ancient dunes now fixed with grasses, sedges and dicotyledons such as the endemics *Indigofera sparteola, Chamaecrista dunensis ;* 50-150 m alt.

V. multinervis Hutch. & Dalziel ; Boissiera 28 : 170, 1978.

syn.: *V. linearifolia* Hutch., 1929, non Hook. f., 1849 (= *V. reticulata)*.

Perennial climbing or trailing herb 0,3-2 m long ; stems slender, wiry, glabrous.

Grassland ; often on stony soil ; grassy savannas with *Hyparrhenia ;* periodically flooded savannas ; swamps ; dambos ; 500-1500 m alt.

V. nigrita Hook. f.; Boissiera 28 : 200, 1978.

syn.: *V. pubigera* Bak. var. *gossweileri* Bak. f.

Twining annual herb 2-7 m long, pubescent-hirsute.

Savanna ; fallow land ; moist meadows ; river backwaters ; ricefields and marigot edges ; swamps ; from sea-level to ? m. alt.

V. nyangensis Mithen

Perennial herb with rootstock ; stem glabrous, slightly ramose ; young stems with a short pubescence, scandant or procumbent, angular to subwinged, to 2,5 m long.

Climbing up *Hyparrhenia filipendula, Heteropogon contortus ;* riverine vegetation ; 1620-2000 m alt.

V. oblongifolia A. Rich.; Boissiera 28 : 167, 1978.

Annual, more rarely perennial, prostrate or climbing herb, rarely suberect, usually 0,9-4,8 m long from a somewhat woody rootstock ; stem slender, covered with appressed spreading or reflexed ± bristly hairs.

Damp grassland ; swamps particularly with *Echinochloa ; Acacia* scrub ; thicket ; woodland ; cultivations ; often on rocky soil ; frequently near edges of lakes, stream-banks ; bushland ; sandy reed-beds, at the banks of river ; 380-2000 m alt.

Botswana, Caprivi Strip, S. Africa ; Madagascar.

Comprises 2 vars.: – var. **oblongifolia** [syn.: *Dolichos dillonii* Delile ; *Vigna wilmsii* Burtt Davy]; – var. **parviflora** Welw. ex Bak.) Verdc. [bas.: *V. parviflora* Welw. ex Bak.; syn.: *V. hygrophila* Harms ; *V. uliginosa* R. Vig.].

V. parkeri Bak. [*excl.* subsp. *acutifoliola* Verdc. (= *V. hosei)*] subsp. **maranguensis** (Taub.)Verdc.; Boissiera 28 : 174, 1978.

Perennial climbing or prostrate herb, sometimes forming mats, 0,1-2 m long ; main rootstock rather slender but tough ; stems slender, often rooting at the nodes, sparsely to rather densely covered with mostly spreading hairs.

Grassland ; grassland with scattered trees ; thicket ; forest ; sometimes weed in cultivations ; dambos ; forest margins ; grassy clearings ; pathways ; savanna ; 270-2700 m alt.

Variable species ; further studies needed ; intermediates between *V. parkeri* and *V. hosei* occur.

Only subsp. **maranguensis** in tropical Africa ; subsp. **parkeri** in Madagascar.

Material from Angola and Cameroon (without fruit) is perhaps conspecific with *V. gracilis.*

V. phoenix Brummitt ; Boissiera 28 : 187, 1978.

Pyrophytic perennial plant ; stem pubescent, to 30 cm tall, from an elongate carrot-shaped woody rootstock 3-10 mm thick.

Seasonally burnt grassland ; plateau woodland ; rocky ground with scattered grasses and other herbs ; 1000-2500 m alt.

V. platyloba Hiern ; Boissiera 28 : 188, 1978.

Perennial climbing or trailing herb 0,9-2 m long ; stems ascending at the base and not rarely erect to 0,6-0,9 m height ; branches straggling, remote, ± angular, densely pubescent with short ± appressed or downward-curved hairs or longer spreading hairs ; rootstock thick.

Woodland ; bushland ; in the somewhat sandy thickets of the more open forests ; miombo woodland ; also as a weed ; 700-1800 m alt.

V. procera Welw. ex Hiern

Perennial herb with several annual erect stems leafy from the base, of a pretty green hue, from a woody rootstock ; stem hairy 0,6-1,5 m tall ; branchlets compressed-angular, furrowed, hairs glistening ; leaves sessile.

Near lakes or seasonal rivers and dambos, in grassy places ; sporadic ; 60-±1400 m alt.

V. pygmaea R. E. Fries, *excl.* var. *grandiflora* Verdc. (= *V. phoenix) ;* Boissiera 28 : 187, 1978.

Erect pyrophytic herb with several stems 3-30 cm tall, flowering when quite leafless, arising from slender underground rhizomes 1-1,5 mm thick (sometimes swollen into a small knot at ground level) which in turn bear beneath them slender fusiform tubers 1,3-7 cm long x 3-10 mm wide ; stem weakly pubescent with appressed somewhat bristly white or ferrugineous pubescence.

Uapaca woodland ; regularly burnt grassland ; miombo woodland ; savanna with *Andropogon ;* wooded savanna ; 900-2300 m alt.

Not in Cameroon (= *V. gracilis)*.

V. racemosa (G. Don) Hutch. & Dalziel, incl. fa. *glabrescens* Bak. f. and incl. var. *modesta* Pellgr., descript. gall.; Boissiera 28 : 176, 1978.

bas.: *Clitoria racemosa* G. Don

syn.: *Vigna donii* Bak., nom. illegit.; *V. luteola* (Jacq.) Benth. var. *villosa* Bak., non Micheli (= *V. luteola)*.

Perennial climbing herb 0,5-7 m long ; stems many, sparsely to densely covered with usually long (1,5-2 mm), spreading, bristly ferrugineous hairs.

Humid places in niayes ; forest gallery ; rocky outcrop with wet flushes and thin soil with *Selaginella njamnjamensis, Aeollanthus* spp., *Aloe* sp. and many annuals, growing along a small brook ; wooded savanna under shade ; road sides ; sandy or sandy-clayey humid places ; termite mounds ; coarse grassland ; recent fallows ; secondary formations ; swamp ; disturbed places ; near sea-level to 1400 m alt.

Not in Niger (= *V. parkeri)*.

V. radiata (L.) R. Wilczek var. **sublobata** (Roxb.)Verdc. – Wild form of Mungbean ; Boissiera 28 : 210, 1978 ; N. Tomooka & al., The Asian Vigna… : 121-127, 2002 (map p. 122, illust., p. 124-125).

bas.: *Phaseolus sublobatus* Roxb.

syn.: *P. trinervius* Wight & Arn.; *Vigna opisotricha* A. Rich.; *V. perrieriana* R. Vig.

Annual twining herb to >1 m tall ; stem with long (1,2-1,9 mm) spreading hairs ; stipules ovate, narrow (although broader than in *V. mungo)*; flower pale greyish yellow.

Swampy grassland ; disturbed ground ; ± 1-1000 m alt.

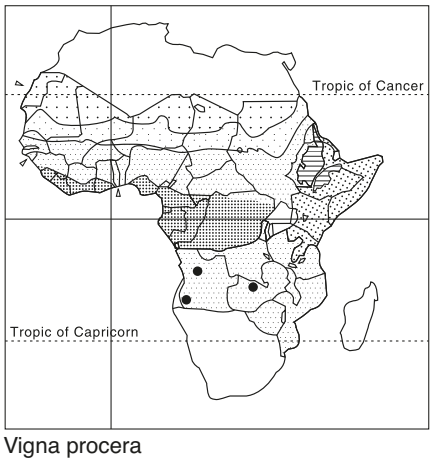
Madagascar ; Middle East-Oman ; S Asia-India, Sri Lanka, Bangladesh ; SE and E Asia, Papua New Guinea ; Australia.

Var. **radiata** is the cultivated true mungbean or green gram [bas.: *Phaseolus radiatus* L.; syn.: *P. aureus* Roxb.; *Vigna mungo* sensu Hepper im F.W.T.A., Ed. 2,1: 569, 1959, non (L.) Hepper ; *Phaseolus mungo* sensu auctt., e. g. Torre in Consp. Fl. Angol. 3 : 261, 1966, non L.]. Believed to have been domesticated in India, but domestication that happened more than once is not excluded.

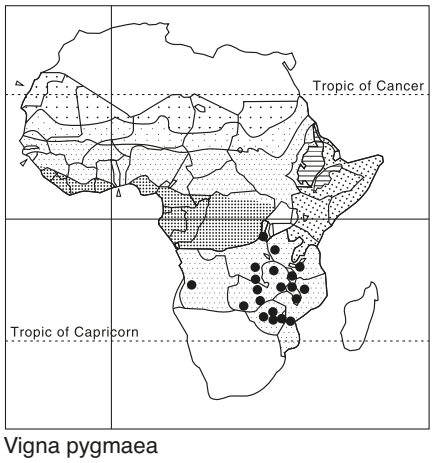
Nomenclature often confused with that of *V. mungo* (L.) Hepper, a plant limited to India, Pakistan, etc.

According to P. Saravanakumar & al. [AFLP and RAPD analyses of intra- and interspecific variation in some Vigna subgenus Ceratotropis (Leguminosae) species] in Austral. J. Bot. 52 : 417-424, 2004, *V. radiata* var. *sublobata* and *V. trinervia* (Heyne ex Wight & Arn.) Tateishi & Maxted, are two distinct species. For *V. trinervia,* maps in N. Tomooka & al., The Asian Vigna : p. 101 and 105, 2002.

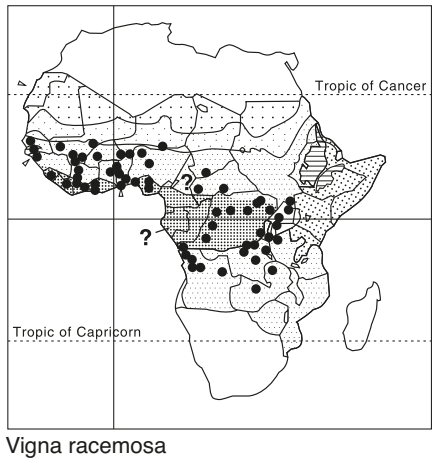
Not mapped (See above, Tomooka & al., l.c.).



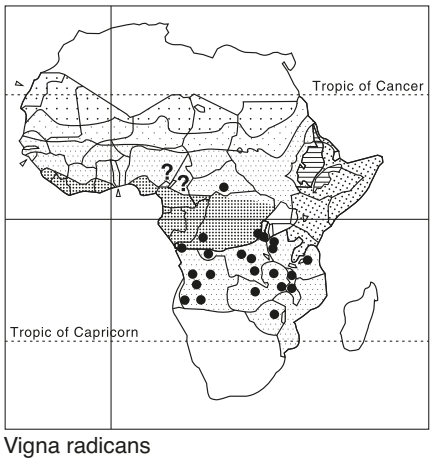
Vigna procera



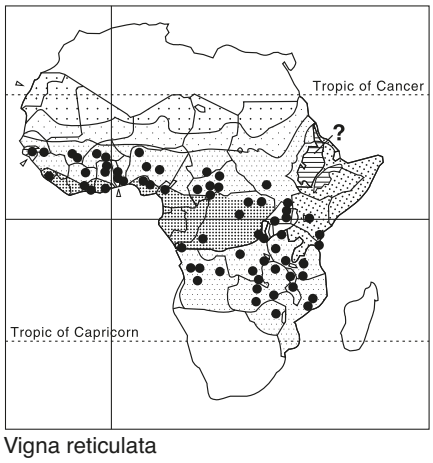
Vigna pygmaea



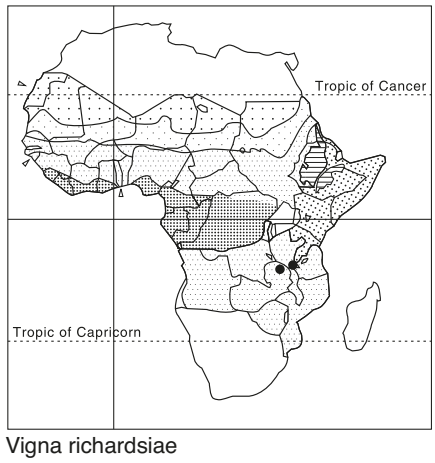
Vigna racemosa



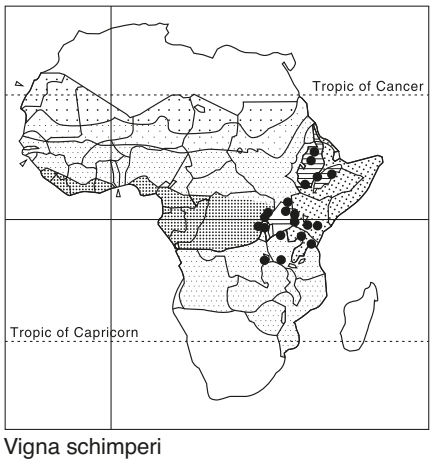
Vigna radicans



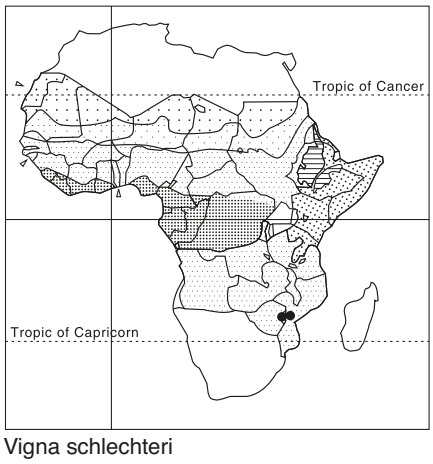
Vigna reticulata



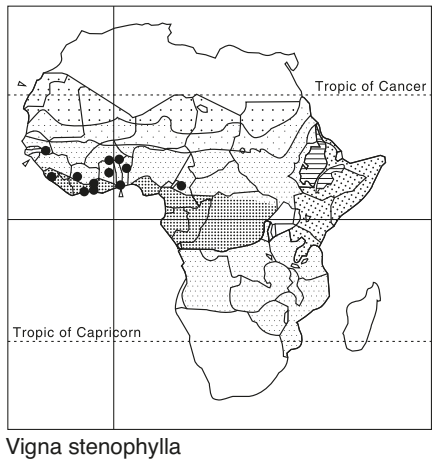
Vigna richardsiae



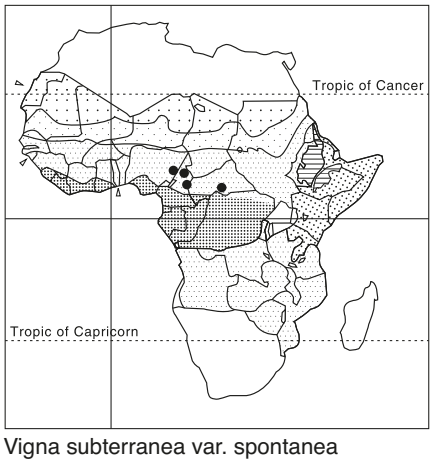
Vigna schimperi



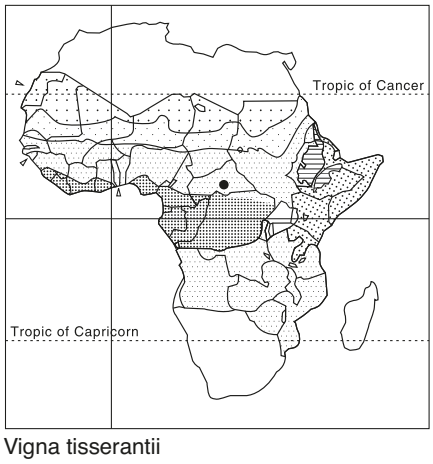
Vigna schlechteri



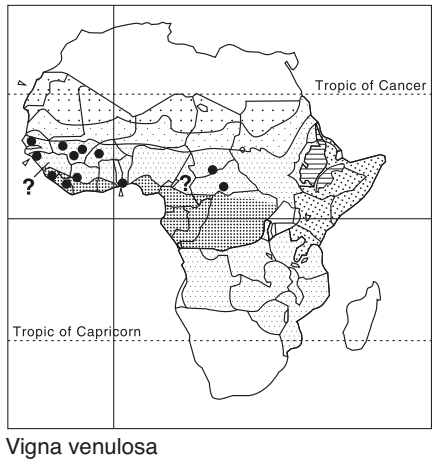
Vigna stenophylla



Vigna subterranea var. spontanea



Vigna tisserantii



Vigna venulosa

VIGNA

V. radicans Welw. ex Bak.; Boissiera 28 : 186, 1978.

syn.: *V. wittei* Bak. f.; *V. stenodactyla* Harms ; *V. oubanguensis* Pellegr.; *V. kassneri* R. Wilczek

Annual or perennial trailing or entirely prostrate herb, to 1,8 m long, or sometimes suberect and short, ± 15 cm tall ; stems slender, rooting at the nodes, densely covered with spreading yellowish or dark brown bristly hairs ; rootstock slender, fusiform.

Remarkably gregarious, resembling clover in European meadows ; damp pastures ; savanna ; sandy plains near lake ; grassland ; dry woodland ; dambos and flood plains ; roadsides ; 250-1900 m alt.

Intermediates occur between this species and *V. reticulata.*

V. reticulata Hook. f., incl. var. *linearifolia* (Hook. f.) Bak.; *non Dolichos reticulata* Schltr.; Boissiera 28 : 184, 1978.

syn.: *V. linearifolia* Hook. f., *non* Hutch. (= *V. multinervis) ; V. polytricha* Bak.

Annual or perennial trailing or climbing herb 0,3-3 m long ; stem densely covered with retrorse or spreading yellowish-brown hairs.

Inundated places ; hollows ; edge of forest ; grassland ; woodland ; grassy woods ; miombo woodland ; rocky and sandy places ; savanna ; termite mounds ; also as a weed : fallow land, cultivations ; 0-2400 m alt.

Not collected in Ethiopia since the 1840's.

V. richardsiae Verdc.; Boissiera 28 : 199, 1978.

Twining or procumbent herb ± 1,5 m long ; stems slender, somewhat angular, practically glabrous ; seeds unknown.

Woodland ; climbing up low bushes and along the ground ; open bush ; sometimes common ; 1440-1800 m alt.

V. schimperi Bak.; *excl.* syn. *V. longepedundulata* Taub. (= *?V. luteola)*; Boissiera 28 : 199, 1978.

Twining perennial herb ± 2 m long from a large fibrous or woody rootstock ; stems velvety with dense appressed ferruginous hairs, becoming glabrescent.

Bushland ; forest edges ; cultivated ground ; sometimes by streams and rivers ; grassy savannas ; open woodland ; *Loudetia arundinacea* grassland with scattered trees ; thickets ; 1200-2800 m alt.

Very similar to *V. luteola.*

V. schlechteri Harms

syn.: *Dolichos reticulatus* Schltr., non *Vigna reticulata* Hook. f.; *Vigna nervosa* Markötter ; *V. galpinii* Burtt Davy

Perennial plant with a rootstock ; stem glabrous or slightly pubescent.

Grassland ; 1800-2250 m alt.

S. Africa.

V. stenophylla Harms 1911, *non* (Harv.) Burtt Davy 1932 (= *V. unguiculata* subsp. *stenophylla)*; Boissiera 28 : 178, 1978.

syn.: *V. dauciformis* A. Chev., incl. var. *elata* A. Chev.

Annual stems suberect, slender, 15-50 cm tall with trailing glabrous branches, arising from a spindle-shaped tuberous root, 8-12 cm long x 1-3 cm wide.

Sandy savannas humid in rainy saison, and becoming arid ; under *Afzelia* (shade) ; lateritic plateau ; 1123 m alt.

VIGNA

V. subterranea (L.) Verdc.; Jacques-Félix, Bull. Soc. Bot. France 93 : 360-362, 1946 ; Agron. Trop. 5 : 62-73, 1950 ; Hepper, Kew Bull. 16 : 395-403 and pl. 9-11, 1963 ; Brink, M. & al. in Oyen, L. P. A. & R. M. M. J. Lemmens (Eds.) Ressources végétales de l'Afrique tropicale. Précurseur : 162-167, 2002 (illustr. p. 163). – Bambara groundnut.

Annual herb ; stem creeping, sparsely pubescent, densely leafy ; internodes short 0,5-5,5 cm long ; geocarpic with fertile flowers without petals and functionally male flowers possessing petals.

With the wild plant the following species are cited in close association : *Isoberlinia doka, Combretum glutinosum, Boswellia dalzielii, Securidaca longepedunculata, Gardenia aqualla, Indigofera macrocalyx, Hibiscus asper* (at Faran, Nigeria) ; at ± 3 km N of Belel (Cameroon) : *Acacia dudgeonii, Combretum glutinosum, C. hypopilinum, Aeschynomene lateritia.*

Comprises 2 vars.: – var. **subterranea** [syn.: *Voandzeia subterranea* (L.) DC. fa. *sativa* Jacq.-Fél.]; – var. **spontanea** (Harms) Pasquet [bas.: *Voandzeia subterranea* fa. *spontanea* Harms ; syn.: *V. subterranea* var. *spontanea* (Harms) Hepper].

The wild variety is only known from Nigeria to Central African Republic (see map). – The cultivated variety is widely cultivated throughout the tropics (for Africa and Madagascar, see map in Jacques-Félix, o.c.: 361).

"… an important crop in semi-arid regions of West Africa. They are remarkably drought resistant". [L. J. Musseliman in review, Econ. Bot. 53 : 456-457, 1999, of J. Heller & al., 1997 : Promoting the Conservation and Use of Underutilized and Neglected Crops. 9. Bambara groundnut Vigna subterranea (L.) Verdc. International Plant Genetics Research Institute, Italy. VI + 166 pp.].

OSUJI, J. O. & H. O. EDEOGA (2005). Karyological studies on Vigna subterranea (L.) Verdc. from Nigeria. *Cytologia* 70 : 167-169

V. tisserantii Pellegr. ± 26. X. 1945 non A. Chev. post X. 1945 (= *V. nigritia)*; Boissiera 28 : 186, 1978.

Herb to 10 cm tall, often less ; flowering stems prostrate, slender, arising from a subfleshy rhizome ; flowers appear when the plant is leafless ; leaves suborbicular.

Savanna with *Berlinia angolensis* near river.

Only known from the type.

Perhaps near Irwin 138 from Kenya (= *V.* sp. B in Fl. Trop. E. Africa).

V. triphylla (R. Wilczek) Verdc. – See **Haydonia.**

[V. umbellata (Thunb.) Ohwi & Ohashi]

bas.: *Dolichos umbellatus* Thunb.

syn.: *Vigna calcarata* (Roxb.) Kurz ; *Phaseolus calcaratus* Roxb.; *P. pubescens* Blume

Short-lived erect or twining annual herb 1-3 m tall ; closely related to V. radiata, but with glabrous adult pods and entirely smooth brown seeds.

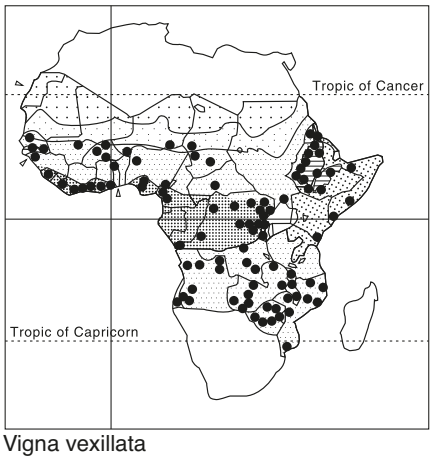
Native of SE Asia ; cultivated in W and E Africa ; also found in waste places.

Not mapped.

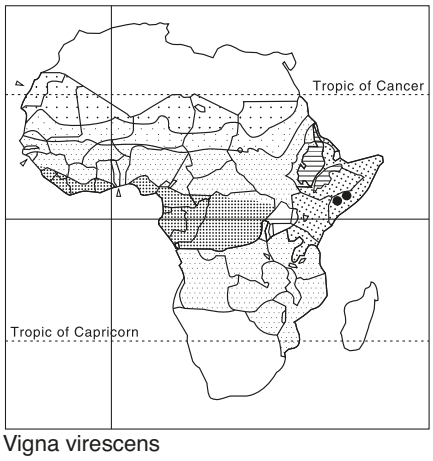
V. unguiculata (L.) Walp. – Niébé ; Boissiera 28 : 191, 1978.

bas.: *Dolichos unguiculatus* L.

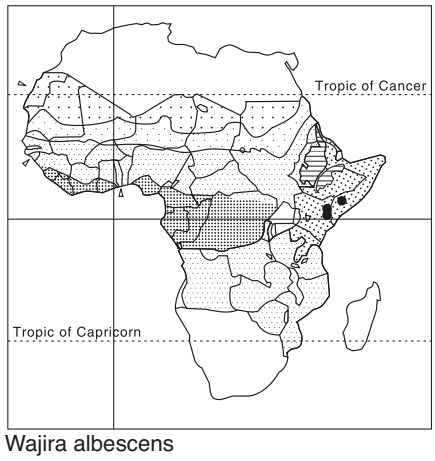
Annual or perennial (with a rootstock) erect trailing or climbing herb 0,5-3 m long ; stem striate, glabrous, scabrous, pubescent or slightly hairy particularly near the petiole-bases, sometimes with minute stiff hook-like hairs.



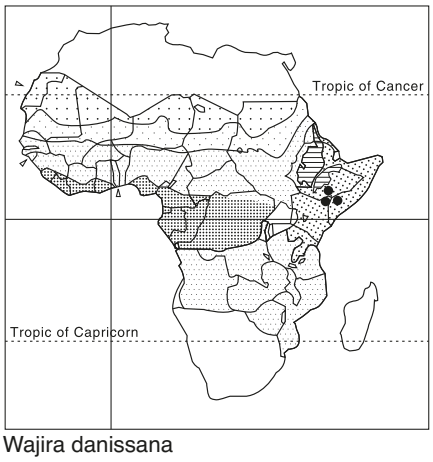
Vigna vexillata



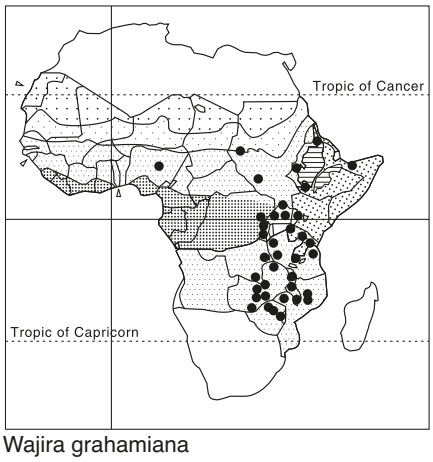
Vigna virescens



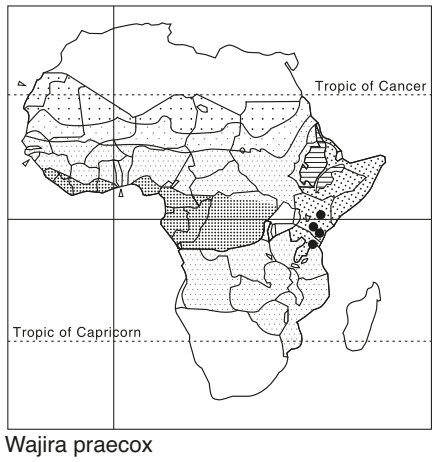
Wajira albescens



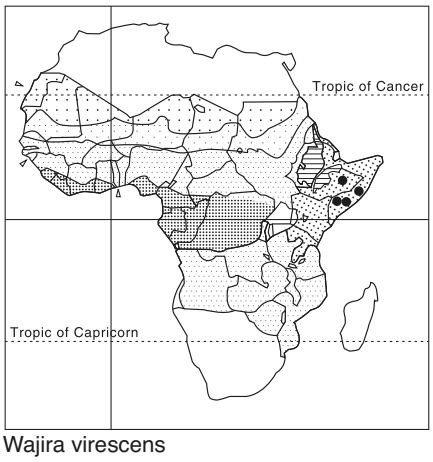
Wajira danissana



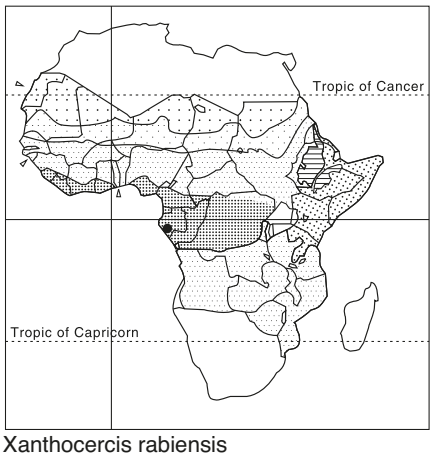
Wajira grahamiana



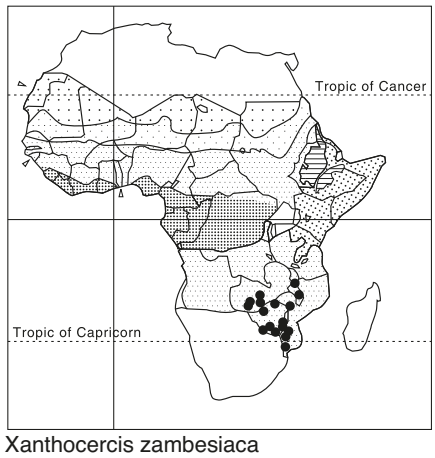
Wajira praecox



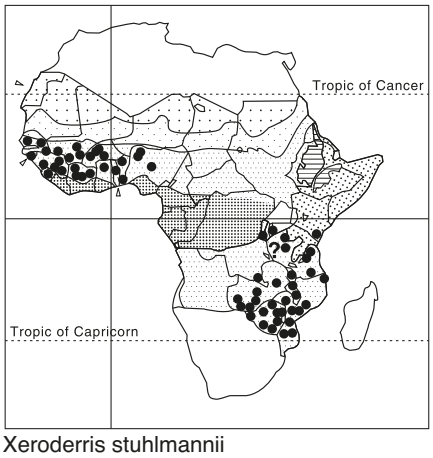
Wajira virescens



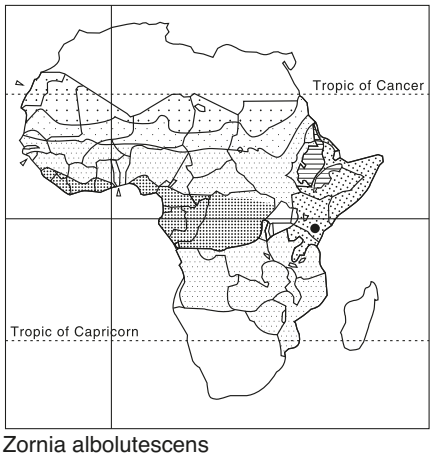
Xanthocercis rabiensis



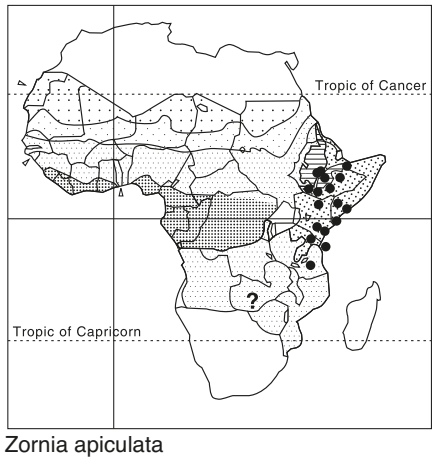
Xanthocercis zambesiaca



Xeroderris stuhlmannii



Zornia albolutescens



Zornia apiculata

In Africa the spontaneous forms are generally found in various formations, e.g. savanna, grassland, sometimes near water ; 0-2600 m alt. – In Guinean forest and at high altitudes in other formations.

Comprises 11 subspp. in our area (cf. also Enum. 3 : 315-316, 1995, for other synonyms, etc.) :

- Subsp. **unguiculata** [var. **unguiculata**] [syn.: *Dolichos catjang* Burm. f.; *Vigna catjang* (Burm. f.) Walp.; *V. unguiculata* subsp. *cylindrica* (L.) Verdc.] – the cultivated annual form catjang cowpea, including several cultivar-groups (cf. Fl. Zambes. 3/5 : 139-140, 2001) ; var. **spontanea** (Schweinf.) Pasquet [syn.: *Dolichos obliquifolius* Schnitzl.; *D. hastifolius* Schnitzl.; *Vigna brachycalyx* Bak.] – the wild (sometimes as a weed) usually annual form (a perennial in the Indian Ocean forest belt) ;
- subsp. **aduensis** Pasquet [syn.: *V. unguiculata* subsp. *mensensis* sensu Verdc., Kew Bull. 24 : 545, 1970 p.p. quoad specim. Pearse s.n.; Verdc. in Gillett & al., Fl. Trop. E. Afr., Legum., Papil.: 646, 1971, *excl.* Ethiopia ; *V. unguiculata* subsp. *dekindtiana* (Harms) Verdc. var. *mensensis* sensu Maréchal & al. in Taxon 27 : 200, 1978 and Boissiera 28 : 194, 1978 p.p. quoad specim. Schimper 754] – an Ethiopian wild plant with very large stipules ;
- subsp. **alba** (G. Don) Pasquet [syn.: *V. alba* (G. Don) Bak. f.], perennial with a woody rootstock, from W Centr. Africa, Angola ; São Tomé, in coastal grassland, open woodlands ;
- subsp. **baoulensis** (A. Chev.) Pasquet, a perennial from Sierra Leone to Cameroon ;
- subsp. **burundiensis** Pasquet, perennial from higher elevations in E Africa ;
- [subsp. *cylindrica* (L.) Eseltine = **V. unguiculata** subsp. **unguiculata];**
- subsp. **dekindtiana** (Harms) Verdc., incl. var. *huillensis* (Welw. ex Bak.) Mithen [bas.: *V. huillensis* Welw. ex Bak.], perennial with a rootstock, often pyrophytic, in Fl. Zambes. area and Angola, in grassland subject to seasonal burning at higher altitudes ;
- subsp. **letouzeyi** Pasquet, perennial, from Cameroon-Gabon to E Zaire, sometimes difficult to distinguish from subsp. *burundiensis ;*
- [subsp. *mensensis* Schweinf. = ? *V. membranacea,* ? *V. unguiculata* – difficult to solve ; see Pasquet in Bull. Jard. Bot. Natl. Belgique 60 : 163, 1993];
- subsp. **pawekiae** Pasquet, perennial with a carrot-shaped rootstock, from E and SE Africa, at forest edges and swampy areas at higher altitudes ;
- [subsp. *protracta* (E. Mey.) B. J. Pienaar = **V. unguiculata** subsp. **stenophylla];**
- subsp. **pubescens** (Wilczek) Pasquet [bas.: *V. pubescens* Wilczek ; syn.: *V. unguiculata* subsp. *dekindtiana* var. *pubescens* (Wilczek) Maréchal, Mascherpa & Stainier], a robust scabrous or pubescent annual or perennial, from E Zaire-Uganda to Mozambique, in grassland and savanna, near water, at low altitudes ;
- [subsp. *sesquipedalis* (L.) Verdc. = **V. unguiculata** subsp. **unguiculata** var. **unguiculata,** cultivar-group *Sesquipedalis];*
- subsp. **stenophylla** (Harv.) Maréchal, Mascherpa & Stainier [syn.: *Scytalis protracta* E. Mey.; *S. hispida* E. Mey.; *Vigna hispida* (E. Mey.) Walp.; *V. triloba* Walp., nom. illegit. (based on *Dolichos trilobus* sensu Thunb., non L.) ; *V. triloba* var. *stenophylla* Harv.; *V. stenophylla* (Harv.) Burtt Davy ; *V. rhomboidea* Burtt Davy ; *V. unguiculata* subsp. *dekindtiana* var. *protracta* (E. Mey.) Verdc.; *V. unguiculata* subsp. *protracta* (E. Mey.) B. J. Pienaar p.p.; *V. unguiculata* subsp. *dekindtiana* var. *kgalagadiensis* Mithen ; *V. angustifoliolata* Verdc.; *V. huillensis* sensu A. Schreib. in Merxmüller, Prodr. Fl. SW Afr., fam. 60 : 122, 1970, non Welw. ex Bak.; *V. unguiculata* subsp. *dekindtiana* var. *huillensis* sensu Pienaar in S. Afric. J. Bot. 58 : 420, 1992, non *V. huillensis* Welw. ex Bak.; *V. antunesii* sensu Torre, Consp. Fl. Angol. 3 : 274, 1966, quoad spec. Baum 196, non Harms], perennial with a woody rootstock, scabrous stems, lobed leaflets and small flowers ; on Kalahari sand in Fl. Zambes. area and S. Africa, Namibia, Caprivi Strip, Botswana, probably also in Angola ; three groups within this subspecies are distinguished by Pasquet in Fl. Zambes. 3/5 : 144, 2001;
- subsp. **tenuis,** incl. var. *ovata* (E. Mey.) B. J. Pienaar [syn.: *V. unguiculata* subsp. *dekindtiana* var. *dekindtiana* Maréchal, Mascherpa & Stainier in Boissiera 28 : 193, 1978, p.p.; *V. unguiculata* subsp. *dekindtiana* var. *tenuis* (E. Mey.) Mithen], perennial with a rootstock and glabrous stems, from Fl. Zambes. area and S. Africa, in grassland, miombo woodland, sandy places near the coast, at lower altitudes.

Cultivated in the tropics and other warmer parts of the world, e.g. in the Mediterranean area, Iran, China, S USA, etc. – "Africa is the only continent where wild forms of cowpea are encountered, and cowpea was also domesticated in Africa" (Garba & Pasquet, S. Afr. J. Bot. 64 : 163, 1998).

BERNARDI, R. & al. (2001). Ulteriore caratterizzazione delle proteine di riserva di semi di Vigna unguiculata (L.) Walp. Del Mozambico. *Informat. Bot. Ital.* 33(1) : 60-62.

GALASSO, I. & al. (1998). Cytotaxonomic studies in Vigna. IV. Variation of the number of active and silent rDNA sites in Vigna unguiculata populations. *Caryologia* 51 : 95-104.

MADAMBA, R. & G. J. H. GRUBBEN (2004). Vigna unguiculata (L.) Walp. *In :* GRUBBEN, G. J. H. & O. A. DENTON, Eds., *Ressources végétales de l'Afrique tropicale 2. Légumes :* 618-625. [Traduction de : Plant Resources of Tropical Africa 2. Vegetables.] Fondation PROTA, Wageningen, etc.

NG, N. Q. & B. B. SINGH (1997). Cowpea. *In :* FUCILLO, D. & al., Eds., *Biodiversity in Trust. Conservation and Use of Plant Genetic Resources in CGIAR Centres :* 82-99 [map p. 86]. Cambridge University Press.

NKONGOLO, K. K. (2003). Genetic characterization of Malawian cowpea (Vigna unguiculata (L.) Walp.) landraces : diversity and gene flow among accessions. *Euphytica* 129 : 219-228.

OBUTE, G. CHIBUZO (1999). Breeding systems and associated mechanisms in Vigna unguiculata (L.) Walpers (Phaseoleae-Fabaceae). *Rev. Biol. Cytol. Végét., Le Botaniste* 21 (3-4) : 31-38.

Threatened by the parasitic weed *Striga gesnerioides* (Canad. J. Bot. 79 : 1225-1240, 2001).

Not mapped (cf. Ng & Singh, o.c.).

V. venulosa Bak., incl. var. *lathyroides* A. Chev., *excl.* var. *pubescens* A. Chev.; Boissiera 28 : 201, 1978.

syn.: *V. marchali* A. Chev.

Very slender climbing annual herb, glabrous or with scattered hairs, to 2 m tall.

Swamp edges ; permanent-humid places ; flooded hollows ; meadows ; savannas ; colluvium ; deep soil.

V. vexillata (L.) A. Rich.; Boissiera 28 : 202, 1978.

bas.: *Phaseolus vexillatus* L.

Perennial climbing or trailing herb 0,3-6 m long, from a tuberous, spindle-shaped woody ; rootstock, stems sparsely to very densely covered with brown hairs (dried specimens) or often quite pale (fresh specimens) or bristles ; leaflets lobed (var. **lobatifolia)** or ± entire.

VIGNA VEXILLATA

Grassland ; grassland with scattered trees ; thicket ; *Acacia, Commiphora* bushland ; forest ; abandoned cultivations ; near beach behind dunes ; secondary formations ; meadows ; sunny places ; grassy inundated plain ; humid, clayey soils ; sandy-clayey places ; regenerating mixed woodland (*Combretum collinum, Stereospermum kunthianum, Acacia hockii, Albizia grandibracteata)* on ground with rocky outcrops ; rainforest with *Albizia, Macaranga, Croton, Ocotea,* forest edge ; Kalahari sand ; sandy schist ; bushy pastures at the borders of forests with two species of *Protea ;* termite mounds ; swamp edges ; 0-2500 m alt.

Bioko/Fernando Poo ; Namibia, Botswana, S. Africa ; India ; Malaysia ; Australia. Pantropical.

Comprises 3 vars. in our area : – var. **vexillata** [syn.: *V. crinita* A. Rich.; *V. tuberosa* A. Rich.; *V. vexillata* var. *tuberosa* (A. Rich.) Chiov.; *Phaseolus quadriflorus* Hochst. ex A. Rich.; *Plectrotropis hirsuta* Schumach. & Thonn.; *Vigna hirta* Hook.; *V. scabra* Sond., non (De Wild.) T. & H. Durand (= *V. unguiculata)*; *V. golungensis* Bak.; *V. phaseoloides* Bak.; *V. vexillata* var. *hirta* (Hook.) Bak. f.; *V. crinita* A. Rich.; *V. thonningii* Hook. f.; *V. vexillata* var. *thonningii* (Hook. f.) Bak.; *V. dolichonema* Harms ; *V. vexillata* var. *dolichonema* (Harms) Verdc.; *V. senegalensis* A. Chev.; *Phaseolus glyciniformis* Weinm.; *Dolichos cylindricus* Desv. ex Ham.; *Phaseolus humifusus* Savi], a densely ferruginous-pubescent or bristly plant with large ovate leaflets ; pantropical ; in grassland, thicket, bushland, forest ;

– var. **angustifolia** (Schumach. & Thonn.) Bak. [bas.: *Plectrotropis angustifolia* Schumach. & Thonn.; syn.: *Dolichos angustifolius* Vahl ex Guill. & Perr.; *Vigna angustifolia* (Schumach. & Thonn.) Hook. f.], a glabrescent plant with narrow leaflets, in grassland, from W and E Africa, India to Australia ;
– var. **lobatifolia** (Bak.) Pasquet [bas.: *Vigna lobatifolia* Bak.; *V; dinteri* Harms 1911, non *Phaseolus dinteri* Harms 1913], a scabrous-stemmed plant with lobed leaflets, from S Africa, on Kalahari sand.

Intermediates occur between var. **vexillata** and var. **angustifolia.**

In S. Africa also var. **davyi** (Bolus) B. J. Pienaar [bas.: *Vigna davyi* Bolus] and var. **ovata** (E. Mey.) B. J. Pienaar [bas.: ? *Phaseolus capensis* Thunb. var. *ovatus* E. Mey.; syn.: *Strophostyles capensis* (Thunb.) E. Mey., non *Phaseolus capensis* Thunb. 1800 s. str., nec Burm. f.; *P. capensis* var. *lanceolata* E. Mey. and var. *longifolia* E. Mey.; *Vigna capensis* (Thunb.) Burtt Davy 1932, non *V. capensis* (L.) Walp., nom. illegit.].

GARBA, M. & R. S. PASQUET (1998). Isozyme diversity in Vigna vexillata (L.) A. Rich. (Fabaceae) complex. *S. Afric. J. Bot.* 64 : 163-175.

OGUNDIWIN, E. A. & al. (2005). A genetic linkage map of Vigna vexillata. *Pl. Breeding* 124 : 392-398.

Perhaps subspontaneous on Mt. Nimba.

V. virescens Thulin

Perennial climber several metres long ; young stems herbaceous and appressed pubescent with retrorse hairs, older stems woody, glabrous, straw-coloured and with the epidermis peeling in stripes ; seeds unknown.

Limestone hillside ; sandstone escarpment ; granitic outcrops ; 200-300 m alt

INSUFFICIENTLY KNOWN :

Vigna pusilla A. Chev. (? = **V. vexillata**).

VIGNA

SYNONYMS :

(cf. also Enum. 3 : 315-317, 1995) :

Vigna abyssinica Taub., incl. var. *ugandensis* Bak. f. = **Vigna heterophylla**

acuminata Hayata = **V. luteola**

afzelii Bak. = **V. gracilis** var. **gracilis**

alba (G. Don) Bak. f. = **V. unguiculata** subsp. **alba**

ambacensis Welw. ex Bak., ? incl. var. *pubigera* (Bak.) Maréchal & al. = **V. heterophylla**

andongensis Bak. = **V. reticulata**

angustifolia (Schumach. & Thonn.) Hook. f. = **V. vexillata** var.

angustifoliolata Verdc. = **V. unguiculata** subsp. **stenophylla**

antunesii sensu Torre (Angola) = **V. unguiculata** subsp. **stenophylla**

baoulensis A. Chev. = **V. unguiculata** subsp.

benthamii Vatke = **Pseudovigna argentea**

brachycalyx Bak. = **Vigna unguiculata** subsp. **inguiculata** var. **spontanea**

briartii De Wild. = **Sphenostylis**

buchneri Harms = **Vigna frutescens** subsp. **frutescens** var.

bukombensis Harms (“bukobensis”) = **V. luteola**

burchellii (DC.) Harv. = **Otoptera**

caesia Chiov. = **Vigna membranacea** subsp.

calcarata (Roxb.) Kurz = **V. umbellata**

capensis (Thunb.) Burtt Davy = **V. vexillata** var **ovata**

catjang (Burm. f.) Walp. = **V. unguiculata** subsp. **unguiculata** var. **unguiculata**

chiovendae Bak. f. = **V. heterophylla**

coerula Bak. = **V. unguiculata** subsp. **tenuis**

comosa Bak. var. *lebrunii* (Bak. f.) Verdc. = **V. comosa** subsp. **comosa**

congoensis Bak. f. = **V. heterophylla**

crinita A. Rich. = **V. vexillata** var. **vexillata**

dauciformis A. Rich., incl. var. *elata* A. Chev. = **V. stenophylla**

davyi Bolus = **V. vexillata** var.

debanensis Martelli = **V. frutescens** subsp. **frutescens** var. **frutescens**

decipiens Harv. = **V. frutescens** subsp. **frutescens** var. **frutescens**

dekindtiana Harms = **V. unguiculata** subsp.

dinteri Harms = **V. vexillata** var. **lobatifolia**

dolichonema Harms = **V. vexillata** var. **vexillata**

donii Bak. = **V. racemosa**

esculenta (De Wild.) De Wild. = **V. frutescens** subsp. **frutescens** var. **frutescens**

fischeri Harms = **V. luteola**

fragrans Bak. f. = **V. frutescens** subsp. **frutescens** var. **frutescens**

galpinii Burtt Davy = **V. schlechteri**

glabra var. *villosa* sensu Hiern = **V. heterophylla**

glandulosa Chiov. = **V. frutescens** subsp. **frutescens** var. **frutescens**

golungensis Bak. = **V. vexillata** var. **vexillata**

grahamiana (Wight & Arn.) Verdc. = **Wajira**

hapalantha Harms = **Vigna membranacea** subsp.

harmsiana Buscalioni & Muschler = **V. frutescens** subsp. **frutescens** var. **frutescens**

hastifolia Bak. = **Nesphostylis holosericea**

helicopus (E. Mey.) Walp. = **Vigna luteola**

hirsuta Feay ex Wood = **V. luteola**

hirta Hook. = **V. vexillata** var. **vexillata**

hispida (E. Mey.) Walp. = **V. unguiculata** subsp. **stenophylla**

holosericea Welw. ex Bak. = **Nesphostylis**

holstii Harms = **Vigna luteola**

homblei De Wild. = **Sphenostylis briartii**

huillensis Welw. ex Bak. = **Vigna unguiculata** subsp**. dekindtiana**

huillensis sensu A. Schreib. (SW Afr.) = **V. unguiculata** subsp. **stenophylla**

hundtii Rossberg = **V. antunesii**

hygrophila Harms = **V. oblongifolia** var. **parviflora**

incana Taub. = **V. frutescens** subsp. **incana**

jaegeri Harms = **V. luteola**

juncea Milne Redh., incl. vars. = **Haydonia**

junodii Harms = **Nesphostylis**

kassneri R. Wilczek = **Vigna radicans**

katangensis (De Wild.) T. Durand 1909 = **V. frutescens** subsp. **frutescens** var. **frutescens**

katangensis De Wild. 1902 = **Sphenostylis stenocarpa**

keniensis Harms = **Vigna frutescens** subsp. **frutescens** var. **frutescens**

kotschyi Schweinf. = **V. frutescens** subsp. **kotschyi**

lancifolia A. Rich. = **V. oblongifolia** var. **oblongifolia**

lebrunii Bak. f. = **V. comosa** subsp. **comosa**

ledermannii Harms = **V. frutescens** subsp. **frutescens** var. **frutescens**

leptodon Harms = **V. membranacea** subsp. **membranacea**

linearifolia Hook. f. = **V. reticulata**

linearifolia Hutch. = **V. multinervis**

lobatifolia Bak. = **V. vexillata** var.

longepedunculata Taub. = ? **V. luteola**

longiloba Burtt Davy = **V. frutescens** subsp. **frutescens** var. **frutescens**

lutea (Sw.) A. Gray = **V. luteola**

var. *samoensis* Hochr. = **V. marina**

luteola (Jacq.) Benth. var. *villosa* Bak. = **V. racemosa**

macrantha Harms = **Spathionema kilimandscharicum**

macrodon Robyns & Boutique = **Vigna membranacea** subsp.

macrorhyncha (Harms) Milne Redh. = **Wajira grahamiana**

malosana Bak. = **Vigna unguiculata** subsp. **tenuis**

maranguensis (Taub.) Harms p.p. = **V. parkeri** subsp.

marchali A. Chev. = **V. venulosa**

marginata (E. Mey.) Benth. ex Harv. = **Sphenostylis**

marina (Burm.) Merr. subsp. *oblonga* (Benth.) Padulosi = **Vigna oblonga**

subsp. *oblonga* sensu Padulosi 1993 = **V. luteola**

matengoana Harms = **Sphenostylis briartii**

membranaceoides Robyns & Boutique = **Vigna membranacea** subsp. **membranacea**

mensensis Schweinf. = ? **V. unguiculata ;** see under **V. unguiculata**

mensensis Schweinf. var. *hastata* Chiov. = **V. membranacea** subsp. **membranacea**

micrantha Chiov. = **V. heterophylla**

micrantha Harms, incl. var. *lebrunii* (Bak. f.) R. Wilczek = **V. comosa** subsp. **comosa**

mildbraedii Harms = **V. luteola**

monophylla Taub. = **Haydonia**

multiflora Hook. f. = **Vigna gracilis** var.

mungo sensu Hepper, F.W.T.A., Ed. 2 = **V. radiata** var. **radiata**

nervosa Markötter = **V. schlechteri**

neumannii Harms = **V. frutescens** subsp. **kotschyi**

nigerica A. Chev. = **V. luteola**

nilotica (Delile) Hook. f. = **V. luteola**

ntemensis Pellegr. = **V. comosa** subsp. **comosa**

nuda N. E. Br. = **V. antunesii**

oblonga Benth. = **V. o-wahuensis** (cf. **V. luteola**)

oblonga sensu auctt. = **V. luteola**

occidentalis Bak. f. = **V. gracilis** var. **gracilis**

oligosperma Backer = **V. hosei**

opisotricha A. Rich. = **V. radiata** var. **sublobata**

ornata Welw. ex Bak., incl. var. *latifoliolata* De Wild. = **Sphenostylis stenocarpa**

ostininii Chiov. = **Haydonia monophylla**

oubanguensis Pellegr. = **Vigna radicans**

parkeri Bak. subsp. *acutifoliola* Verdc. = **V. hosei** p.p.

parviflora Welw. ex Bak. = **V. oblongifolia** var. **parviflora**

parvifolia Planch. ex Bak. = **V. gracilis** var. **gracilis**

perrieriana R. Vig. = **V. radiata** var. **sublobata**

phaseoloides Bak. = **V. vexillata** var. **vexillata**

polytricha Bak. = **V. reticulata**

pongolensis Burtt Davy = **V. frutescens** subsp. **frutescens** var. **frutescens**

praecox Verdc. = **Wajira**

proboscidella Chiov. = **W. grahamiana**

pseudolablab Harms = **Vatovaea**

pseudotriloba Harms = **Vigna frutescens** subsp. **frutescens** var. **frutescens**

pubescens R. Wilczek = **V. unguiculata** subsp. **pubescens**

pubigera Bak. = **V. heterophylla**

var. *gossweileri* Bak. f. = **V. nigritia**

punctata Micheli = **Adenodolichos**

pygmaea R. E. Fr. var. *grandiflora* Verdc. = **Vigna phoenix**

racemosa var. *glabrescens* Bak. f. = **V. gracilis** var. **gracilis**

repens (L.) O. Kuntze = **V. luteola**

retusa (E. Mey.) Walp. = **V. marina**

rhomboidea Burtt Davy = **V. unguiculata** subsp. **stenophylla**

ringoetii (De Wild.) De Wild. = **V. antunesii**

scabra (De Wild.) T. & H. Durand = **V. unguiculata** subsp. **unguiculata** var. **spontanea**

scabra Sond. = **V. vexillata** var. **vexillata**

scabrida Burtt Davy = **V. unguiculata** subsp. **unguiculata** var. **spontanea**

schliebenii Harms = **V. kirkii**

senegalensis A. Chev. = **V. vexillata** var. **vexillata**

sinensis Hassk. subsp. *spontanea* Schweinf. = **V. unguiculata** subsp. **unguiculata** var. **spontanea**

spartioides Taub. = **V. frutescens** subsp. **frutescens** var. **buchneri**

stenodactyla Harms = **V. radicans**

stenophylla (Harv.) Burtt Davy = **V. unguiculata** subsp. **stenophylla**

strophiolata Piper = **V. racemosa**

stuhlmanni Harms = **V. heterophylla**

sudanica Bak. f. = **V. frutescens** subsp. **frutescens** var. **frutescens**

taubertii Volkens ex Harms = **V. frutescens** subsp. **frutescens** var. **frutescens**

tenuis (E. Mey.) D. Dietr. = **V. unguiculata** subsp. **tenuis**

thonningii Hook. f. = **V. vexillata** var. **vexillata**

tisserantii A. Chev. = **V. nigritia**

triloba Walp. = **V. unguiculata** subsp. **stenophylla**

var. *stenophylla* Harv. = **V. unguiculata** subsp. **stenophylla**

triphylla (R. Wilczek) Verdc. = **Haydonia**

tuberosa A. Rich. = **Vigna vexillata** var. **vexillata**

uliginosa R. Vig. = **V. oblongifolia** var. **parviflora**

ulugurensis Harms = **V. friesiorum** var.

unguiculata (L.) Walp.

subsp. *cylindrica* (L.) Verdc. = **V. unguiculata** subsp. **unguiculata** var. **unguiculata**

subsp. *dekindtiana* (Harms) Verdc.

var. *dekindtiana* sensu Maréchal & al., p.p. = **V. u.** subsp. **tenuis ; V. u.** subsp. **unguiculata** var. **spontanea**

var. *huillensis* (Welw. ex Bak.) Mithen = **V. u.** subsp. **dekindtiana**

var. *huillensis* sensu Pienaar = **V. u.** subsp. **stenophylla**

var. *kgalagadiensis* Mithen = **V. u.** subsp. **stenophylla**

var. *mensensis* sensu Maréchal & al., sensu Mithen = **V. u.** subsp. **pawekiae**

var. *mensensis* auctt. = **V. u.** subsp. **aduensis**

var. *protracta* (E. Mey.) Verdc. = **V. u.** subsp. **stenophylla**

var. *pubescens* (R. Wilczek) Maréchal & al. = **V. u.** subsp. **pubescens**

var. *tenuis* (E. Mey.) Mithen = **V. u.** subsp. **tenuis**

subsp. *mensensis* sensu auctt., e.g. Verdc., non Schweinf. = **V. u.** subsp. **pawekiae**

subsp. *protracta* (E. Mey.) B. J. Pienaar = **V. u.** subsp. **stenophylla**

subsp. *sesquipedalis* (L.) Verdc. = **V. u.** subsp. **unguiculata** var. **unguiculata** cultivar-group **Sesquipedalis**

venulosa sensu auctt., non Bak. = **V. multinervis**

vexillata (L.) A. Rich.

var. *dolichonema* (Harms) Verdc. = **V. vexillata** var. **vexillata**

var. *hirta* (Hook.) Bak. = **V. vexillata** var. **vexillata**

var. *thonningii* (Hook. f.) Bak. = **V. vexillata** var. **vexillata**

var. *tuberosa* (A. Rich.) Chiov. = **V. vexillata** var. **vexillata**

villosa Savi = **V. luteola**

violacea Hutch. = **V. frutescens** subsp. **frutescens** var. **frutescens**

virescens Thulin = **Wajira**

wilmsii Burtt Davy = **Vigna oblongifolia** var. **oblongifolia**

wittei Bak. f. = **V. radicans**

WAJIRA / *5*

THULIN, M. & al. (2003). Phylogeny and biogeography of Wajira (Leguminosae-Phaseoleae) : a monophyletic segregate of Vigna centrered in the Horn of Africa region. *In :* SEBSEBE DEMISSEW & al., Eds., *XVIIth AETFAT Congress 21-26 September 2003, Abstracts/résumés :* 50-51. Addis Ababa University Press.

THULIN, M. & al. (2004). Phylogeny and Biogreography of Wajira (Leguminosae) : A Monophyletic Segregate of Vigna in the Horn of Africa Region. *Syst. Bot.* 29 : 903-920.

Wajira albescens Thulin – Icon.: Syst. Bot. 29 : 912, 915, 2004.

Trailing or climbing perennial plant with woody stems, sparsely appressed pubescent with retrorse hairs when young ; flowers in dense axillary clusters ; upper 2 lobes of calyx joined to form a rounded lip ending in a spur-like appendage ; corolla white, tinged pink, standard asymmetrical, large ; keel with spirally incurved beak ; pod 9-10 cm long.

Acacia-Commiphora-Dalbergia bushland on limestone, red sandy loam ; c. 300 m alt.

Two collections known from NE Kenya (Wajir Distr.), and 2(?) from Somalia.

W. damissana Thulin – Icon.: Syst. Bot. 20 : 914, 2004.

Woody climber to 1,5 m or more long ; young stems sparsely appressed pubescent with retrorse hairs, older stems 3 mm or more thick, glabrous, gray or straw-colored, epidermis ± cracking, apparently lacking corky ridges.

Acacia-Commiphora or *Acacia-Terminalia* bushland ; usually on red sandy soil ; 350-1300 m alt.

W. grahamiana (Wight & Arn.) Thulin & Lavin – Icon.: Syst. Bot. 29 : 912, 2004.

bas.: *Phaseolus grahamianus* Wight & Arn.

syn.: *Vigna grahamiana* (Wight & Arn.) Verdc. ; *Dolichos grahamianus* (Wight & Arn.) Niyomdham ; *D. subcarnosus* Wight & Arn. ; *Phaseolus schimperi* Taub. ; *P. macrorhynchus* Harms ; *Vigna macrorhyncha* (Harms) Milne-Redh. ; *Phaseolus stenocarpus* Harms ; *Vigna proboscidella* Chiov.

WAJIRA GRAHAMIANA

Herbaceous or rarely slightly woody climber to 4 m long, from a ± woody rootstock to 10 cm thick ; young stems sparsely appressed pubescent with retrorse hairs or subglabrous, older stems to 2 mm thick, glabrous, greenish to pale brown, epidermis entire to cracking, not forming corky ridges.

Savanna ; grassland ; bushland ; woodland ; forest of different types ; often in areas subject to seasonal burning ; 0-2100 m alt.

Saudi Arabica ; S India, Sri Lanka.

W. praecox (Verdc.) Thulin & Lavin – Icon.: Syst. Bot. 29 : 912, 2004.

bas.: *Vigna praecox* Verdc.

Robust woody climber to 3 m or more long ; young stems sparsely appressed pubescent with retrorse hairs, older stems to 1 cm thick, glabrous, pale brown, with numerous narrow intersecting ridges.

Acacia, Terminalia, Commiphora bushland and other types of arid bushland ; 80-1000 m alt.

W. virescens (Thulin) Thulin – Icon.: Syst. Bot. 29 : 912, 915, 2004.

bas.: *Vigna virescens* Thulin

Woody climber to 5 m or more long ; young stems appressed pubescent with retrorse hairs, older stems to 1 cm thick, glabrous, straw-colored or greyish, epidermis peeling in strips, apparently lacking corky ridges.

Deciduous bushland or woodland on limestone hillsides, sandstone escarpments, granitic outcrops ; 140-1260 m alt.

XANTHOCERCIS / *2*

A genus of 3 species, one in Madagascar (*X. madagascariensis* Baill.).

DÉTIENNE, P. (1998). Le bois d'une nouvelle espèce de la forêt gabonaise. *Bois Forêts Trop.* 256/2 : 71-74.

Xanthocercis rabiensis van der Maesen, Bull. Jard. Bot. Natl. Belgique 66 : 20, 1997 – Icon.: ibid.: 21, 23.

Tall tree c. 40 m ; bole straight, cylindrical, to c. 3 m Ø d b h ; branches with grey-brown bark ; branchlets short appressed-hairy to glabrescent ; leaflets 5, large, to 13 cm long ; flowers white, in lax pseudoracemes ; pods moniliform, 1-2-seeded drupes, constricted between the seeds ; seeds germinate without dormancy.

Primary lowland rain-forest, c. 30 m alt.

Cultivated in greenhouse at Wageningen (Netherlands).

Inflorescences resembling those of *Oubanguia africana* Baill. (*Scytopetalaceae)*, common in the same area.

X. zambesiaca (Bak.) Dumaz-le-Grand – Icon.: B. van Wyk & al., Photographic guide trees S. Africa : 322, 2000.

Evergreen tree 7-18(-30) m, with a stout trunk branching low ; more often with many stems to 8 m tall ; crown heavy rounded, with somewhat drooping branchlets ; bark grey, tinged yellow, rough, cracked into small squares ; leaflets (3-)15, oval, small, to 6 cm long, bright shining green above, pale dull green beneath ; flowers white, pea-like, in short racemes ; pod a 1-2 seeded drupe.

Hot dry bushveld on deep alluvial soils near rivers and termite mounds, in valleys on river banks ; up to 1500 m alt.

S. Africa, Botswana. – Fl. Zambes. 3/3 : 30-32, 2007.

XERODERRIS / *1*

Xeroderris stuhlmannii (Taub.) Mendonça & E. P. Sousa

syn.: *Derris stuhlmannii* (Taub.) Harms ; *Ostryoderris stuhlmannii* (Taub.) Dunn ex Harms ; *O. chevalieri* Dunn ; *Xeroderris chevalieri* (Dunn) Roberty ; *Lonchocarpus argentea* A. Chev., nomen.

Deciduous tree, 5-20 m with ascending branches and rounded or spreading crown ; bole c. 2 m in girth ; bark grey-brown, rough flaking ; young branchlets golden-brown or rusty hairy (in W Africa floccose-tomentose) ; older branches thickened, corky, much scarred, glabrescent ; leaves mostly aggregated near branch-tips, 25-45 cm long ; leaflets golden or silvery hairy, later glabrescent ; panicles crowded, rusty to floccose-tometose ; flowers white or greenish-white ; pods to 18(-30) cm long, broad, winged, 1-3-seeded, indehiscent, sometimes replaced by hard subglobose galls.

Various types of deciduous woodland, grassland, savanna and bushland, particularly on well-drained soils ; in hot dry sandy country ; 1-1650 m alt.

S. Africa (Transvaal), Caprivi Strip, Botswana, Swaziland.

Resembling a young *Daniellia oliveri,* or a *Spathodea* when not flowering. – Fl. Zambes. 3/3 : 84-86, 2007.

ZORNIA / *12*

A mainly S. American genus of c. 80 species. – Pod flattened, jointed ; segments usually with bristles. Leaves with 2 or 4 leaflets. Inflorescence bracts ± enclosing flowers, densely punctate-glandular.

Zornia albolutescens Mohlenbr.

syn.: Z. *diphylla* sensu Hutch. & E. A. Bruce in Bull. Misc. Inform. Kew 1941:123, 1941, non (L.) Pers. ; Z. *apiculata* sensu Milne-Redh. in Bol. Soc. Brot., Sér. 2, 28 : 90, 1954, quoad specim. Bogdan 1361, non Milne-Redh. sens. str.

Perennial herb with tufted habit and woody roots ; plant with a striking whitish-yellow appearance ; stems erect or decumbent, shortly pilose, glabrescent towards base, to 50 cm long ; leaves 2-foliolate ; petals yellow ; pod without (or with few) bristles.

Combretum-Commiphora bushland ; 1050-1200 m alt.

Known only from one locality (Kenya, Machakos Distr.).

Z. apiculata Milne-Redh.

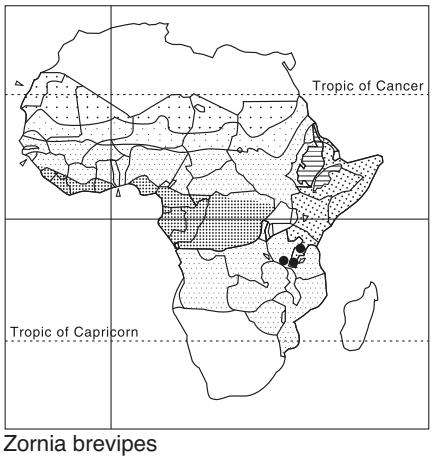
Perennial or sometimes annual herb ; stems erect or decumbent, branched, puberulent or glabrous, to 50 cm long ; leaves 2-foliolate, punctate ; petals yellow, sometimes veined red.

Grassland, bushland, dunes, dry scrub ; rocky places ; also often a weed ; 1500-2210 m alt.

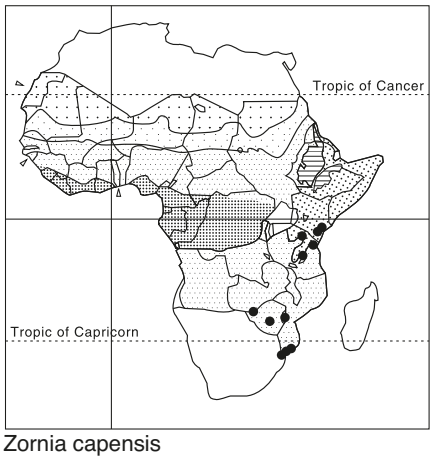
Very variable species, in : degree of indumentum of stems, leaves, bracts ; degree of glandular punctation of leaflets ; size and shape of leaflets and bracts ; size of petals.

In Somalia material referred to *Z. glochidiata* seems better placed in *Z. apiculata* (fide Thulin Fl. Somal. 1: 427, 1993).

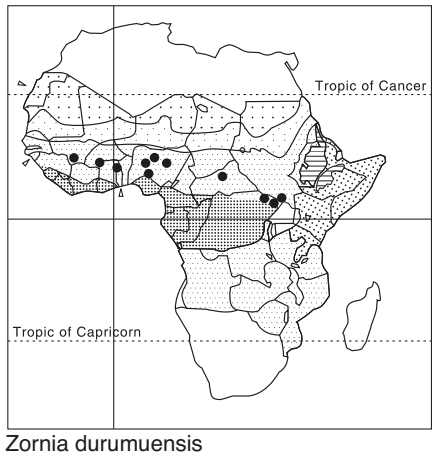
Similar to *Z. pratensis.*



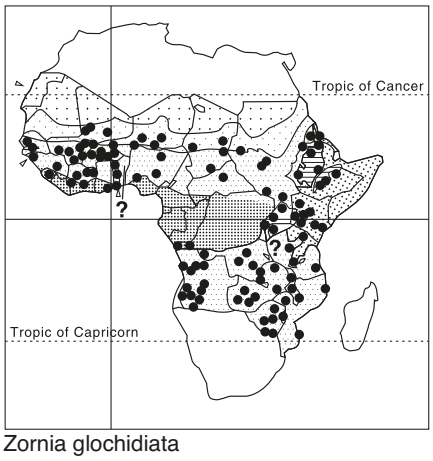
Zornia brevipes



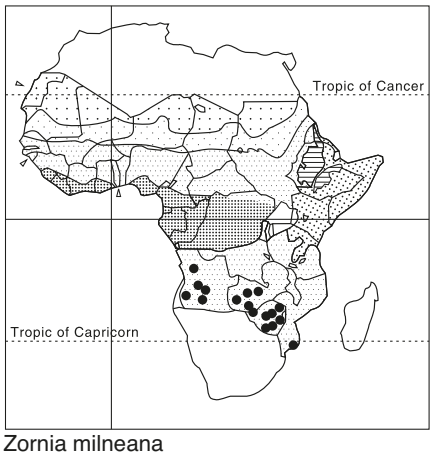
Zornia capensis



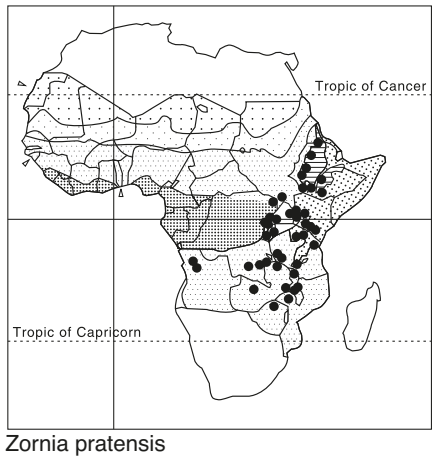
Zornia durumuensis



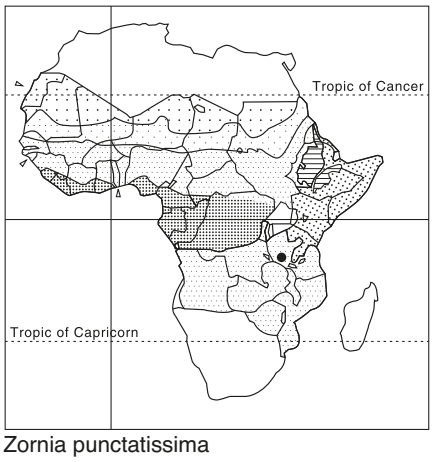
Zornia glochidiata



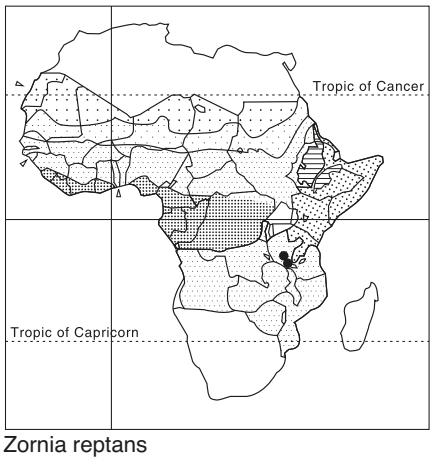
Zornia milneana



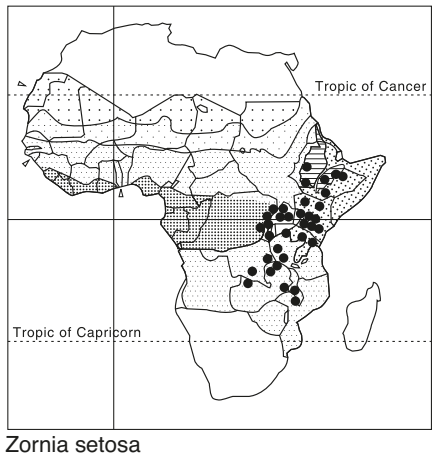
Zornia pratensis



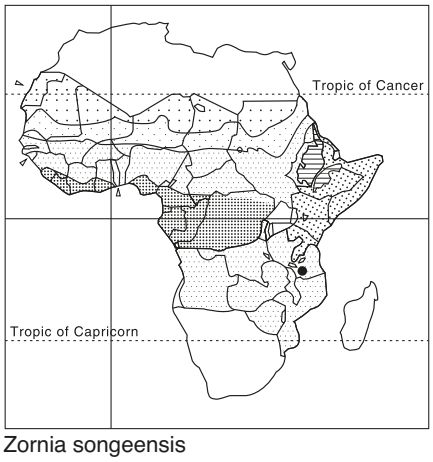
Zornia punctatissima



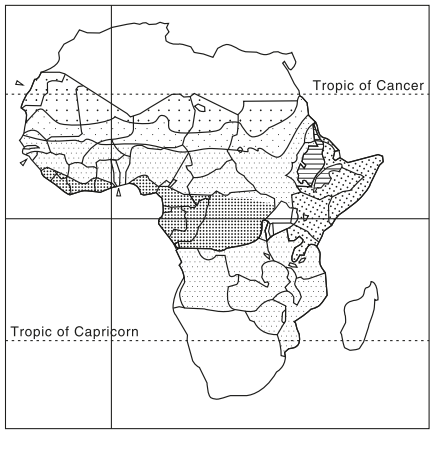
Zornia reptans

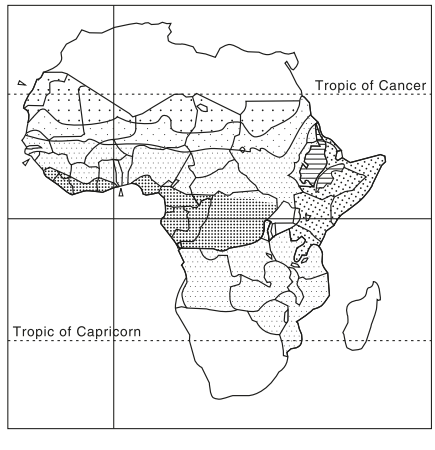


Zornia setosa



Zornia songeensis





Z. brevipes Milne-Redh.

Perennial herb, prostrate, with ascending stems, branched, glabrous, to 15 cm tall ; leaves 2-foliolate, densely punctate ; inflorescence bracts large (c. 16 × 5 mm), punctate ; petals yellow ; pod without bristles, glabrous.

Brachystegia woodland, secondary bushland, old cultivations ; 1350-1500 m alt.

Z. capensis Pers. – Icon.: Du Puy & al., Legum. Madag.: 660, 2002 (subsp. **capensis)**.

syn.: *Hedysarum tetraphyllum* Thunb.

Perennial herb, rarely annual with decumbent or prostrate stems 15-75(-300) cm long from a slender fibrous rootstock ; stems much-branched at base, usually glabrous, rarely densely pubescent ; leaves 4-foliolate ; petals yellow, lined red or purple ; pod glabrous and glandular or with bristles.

Grassland, dambo edges, open mixed deciduous woodland with *Acacia, Sclerocarya, Albizia,* etc., also cultivated ground ; 0-1080 m (subsp. **capensis)**. – Dry scrub on shallow soil in rocky places, also weed of cultivations ; 0-1140 m (subsp. **tropica)**.

Variable in pubescence of leaves and pods : leaflets conspicuously glandular punctate and fruit ± glabrous (subsp. **capensis)**; leaflets slightly punctate and pod with long glochidiate bristles (subsp. **tropica)**.

Swaziland, S. Africa ; SW Madagascar.

Comprises 2 subspp.: – subsp. **capensis** [syn.: *Z. tetraphylla* Michx. var. *capensis* (Pers.) Harv.] in S part of range and Madagascar : – subsp. **tropica** Milne-Redh. [syn.: *Z. tropica* (Milne-Redh.) Mohlenbr.] in N part of range.

Sometimes (= subsp. **capensis)** difficult to distinguish from **Z. milneana.**

Z. durumuensis De Wild.

syn.: *Z. lelyi* Hutch. & Dalziel

Perennial rhizomatous herb with erect stem, simple or branched from the base, hirsute to ± glabrous, 5-20 cm tall ; leaves 2-foliolate ; petals yellow, lined red ; pod with long bristles (similar to *Z. pratensis* subsp. *barbata, Z. setosa* subsp. *setosa)*.

Savanna, edges of paths, clayey pavement soil.

Z. glochidiata Rchb. ex DC. – Icon.: Du Puy & al., Legum. Madag.: 660, 2002.

syn.: *Z. biarticulata* G. Don ; *Z. diphylla* (L.) Pers. fa. *perrieri* R. Vig. p.p., lecto inclu.; *Z. diphylla* var. *platyphylla* Welw. ex Bak. f.; *Z. diphylla* auctt., non (L.) Pers.

Annual herb (rarely perennial) from a slender taproot ; stems suberect, slender, branched, glabrous or strigose, to 40 cm tall ; leaves 2-foliolate ; flowers *inconspicuous,* yellow with or without red markings, or red ; pod with long (2-3 mm) stiff hooked bristles.

Grassland, clearings, open *Brachystegia, Julbernardia, Acacia* or *Colophospermum* woodland, *Brachystegia-Hyparrhenia* mosaics ; waste places, riverbanks, roadsides, cultivations ; inland and coastal sand dunes ; seasonally flooded meadow with *Cynodon* (Mali) ; mostly on sandy soils ; rocky places ; also semi-evergreen forest ; 0-2000 m alt. (550-2000 m in Ethiopia). – Invasive plant.

Cape Verde Isl.; Botswana, Namibia, S. Africa ; Madagascar.

DIOUF, M. (2004). Zornia glochidiata C. Rchb. ex DC. *In :* GRUBBEN, G. J. H. & O. A. DENTON, Eds., *Ressources végétales de l'Afrique tropicale 2. Légumes :* 626. [Traduction de : Plant Resources of Tropical Africa 2. Vegetables. 2004]. Fondation PROTA, Wageningen, etc.

KUSSEROW, H. & al. (1997). Genetische Diversität von wildwachsenden Futterpflanzen im Sahel Westafrikas am Beispied von Alysicarpus ovalifolius und Zornia glochidiata. *Giessener Beiträge zur Entwicklungsforschung* 24 : 269-282.

Not in Somalia *(= Z. apiculata)*.

Has often been confused with *Z. diphylla* (L.) Pers. [hitherto known as *Z. conjugata* (Willd.) Sm. native of S India, Sri Lanka].

[Z. latifolia Sm. var. **latifolia**]

syn.: *Z. gracilis* DC.; *Z. diphylla* sensu auctt. p.p., non (L.) Pers.; *Z. surinamensis* Miq.; *Z. diphylla* var. *gracilis* (DC.) Benth.

Perennial herb with wiry stems to 1 m tall with broad basal (caducous) leaflets ; leaves 2-foliolate ; pod villous with retrorse bristles.

Widespread as a weed from Senegal to Nigeria, Zaire, waste places (previously misidentified *Z. diphylla,* or lumped with *Z. glochidiata)*.

Native of E S. America.

Not mapped.

Z. milneana Mohlenbr.

syn.: *Z. bracteata* sensu Hiern, Cat. Afr. Pl. Welw. 1: 240, 1896, non Gmel.

Perennial (rarely annual) herb, prostrate or suberect with sparsely to densely pubescent stems 8-75 cm long, usually much branched at base ; leaves 4-folliolate, densely glandular-punctate ; petals yellow or orange ; pod with hooked bristles, eglandular.

Sandy grasslands, floodplain grassland ; *Brachystegia, Terminalia-Parinari* woodland, also other types of woodland ; old cultivations ; usually on sandy soils ; 900-1900 m alt.

Variable in shape and size of leaflets (linear to elliptic).

Caprivi Strip, Namibia, Botswana, S. Africa.

Forms similar to *Z. capensis* exist.

Z. pratensis Milne-Redh.

Perennial herb, decumbent, sometimes erect, with many branched, glabrous-pubescent stems 5-45 cm long, from a woody rootstock ; leaves 2-foliolate, glabrous ; petals yellow or orange, marked red or brown, or sometimes pink ; pod usually eglandular, with plumose or glabrous bristles.

Grassland, open bushland, dambo margins, *Acacia* woodland ; burnt grassland, open *Brachystegia-Piliostigma* woodland ; grassland with scattered trees ; often on volcanic soils or near rock outcrops ; 350-1600 m alt. (Fl. Zambes. area), 1500-1800 m (Zaire), 1250-2100 m (Ethiopia) ; 1200-2300 m (E Africa) ; subsp. **pratensis.** – Grassland, lateritic soils, steppe, open woodland, rocky places, dry grassland and dambos especially subjected to severe burning ; 1300-1900 m (subsp. **barbata)**.

Variable in shape and size of leaflets, pubescens of pod.

Botswana (subsp. **pratensis** var. **pratensis)**.

Comprises 2 subspp. one of which with 2 vars.: – subsp. **barbata** J. Léonard & Milne-Redh. [syn.: *Z. setifera* Mohlenbr.] in WC part of range, with long hairy bristles on pod ; – subsp. **pratensis :** – var. **pratensis** (syn.: *Z. glochidiata* sensu A. Rich., Tent. Fl. Abyss., non DC.; *Z. diphylla* sensu auctt. mult., p.p., non (L.) Pers.] widespread ; – var. **glabrior** Milne-Redh. with completely glabrous bristles on pod, from Tanzania, Mozambique, Malawi.

ZORNIA

Z. punctatissima Milne-Redh.

Perennial densely tufted herb with erect glandular-punctate stems to 40 cm tall, arising among burnt-off bases of previous seasons' stems ; root often thick ; leaves 2-foliolate, glabrous, densely glandular-punctate ; petals yellow ; pod densely glandular-punctate, shortly pubescent, without bristles.

Edge of cultivated land in grassland and *Brachystegia longifolia* woodland ; 1400 m alt. Rare.

Known from one locality only (Lupa North Forest Reserve, Tanzania).

Z. reptans Harms

Perennial herb with prostrate pilose stems to 50 cm long, radiating from a central rootstock ; leaves usually 2-foliolate (sometimes 3-4-foliolate), sparsely pilose above, glandular-punctate on both surfaces ; petals yellow, long ; pod glabrous, without bristles.

Brachystegia, Uapaca, Philippia woodland in short grass on sand or gravel ; 1500-1800 m alt.

Z. setosa Bak. f. – Icon.: Troupin, Fl. Rwanda 2 : 63, 1983 (subsp. **obovata)**.

Perennial erect or prostrate (trailing) herb with pubescent stems 3-60 cm long from a deep root (forming adventitious buds) ; leaves (2-3-)4-foliolate, densely glandular-punctate ; petals yellow, orange or pink to purple, veined with darker colour ; pod glabrous, glandular or not, with plumose or glabrous bristles.

Grassland subject to severe burning, grassland, dambos, open *Brachystegia* woodland ; on sandy soil, also disturbed ground, 900-2400 m alt. (subsp. **setosa)**. – (Short) grassland, in very sandy often damp places, cultivated land ; 1100-2400 m (subsp. **obovata.**

Variable in pubescence of pod and bracts, and in type of bristles on pod. Subsp. **obovata** in particular, is very variable.

Comprises 2 subspp.: – subsp. **setosa** in S part of range ; subsp. **obovata** (Bak. f.) J. Léonard & Milne-Redh. [bas.: *Z. tetraphylla* Michx. var. *obovata* Bak. f.; syn.: *Z. obovata* (Bak. f.) Mohlenbr.; *Z. tetraphylla* sensu auctt., non Michx.].

Z. songeensis Milne-Redh.

Perennial herb with wiry roots and decumbent glabrous stems to 60 cm long ; leaves 2-foliolate, glabrous, obscurely glandular-punctate beneath ; petals cream with red veins, wings and keel with yellow tips ; pod glabrous, without bristles.

Grassy space in secondary *Brachystegia, Uapaca* woodland, on grey sandy soil ; 990-1120 m alt.

Similar to *Z ; brevipes* (confusion possible).

Known only from 2 localities (Songea Distr., Tanzania).

ZORNIA

SYNONYMS :

Zornia apiculata sensu Milne-Redh., p.p. = **Zornia albolutescens**

biarticulata G. Don = **Z. glochidiata**

diphylla Pers. fa. *perrieri* R. Vig., p.p. = **Z. glochidiata**

var. *gracilis* = **Z. latifolia** var. **latifolia**

var. *platyphylla* Welw. ex Bak. f. = **Z. glochidiata**

diphylla sensu auctt. = **Z. albolutescens, Z. glochidiata, Z. latifolia** var. **latifolia, Z. pratensis** subsp. **pratensis** var. **pratensis**

glochidiata sensu A. Rich., non DC. = **Z. pratensis** subsp. **pratensis** var. **pratensis**

gracilis DC. = **Z. latifolia** var. **latifolia**

lelyi Hutch. & Dalziel = **Z. durumuensis**

obovata (Bak. f.) Mohlenbr. = **Z. setosa** subsp. **obovata**

setifera Mohlenbr. = **Z. pratensis** subsp. **barbata**

surinamensis Miq. = **Z. latifolia** var. **latifolia**

tetraphylla Michx. var. *capensis* (Pers.) Harv. = **Z. capensis** subsp. **capensis**

tetraphylla sensu auctt., non Michx. = **Z. setosa** subsp. **obovata**

tropica (Milne-Redh.) Mohlenbr. = **Z. capensis** subsp. **tropica**

INDEX TO FAMILIES AND GENERA

LEGUMINOSAE

Volume 3 and volume 4

This Index only gives reference to current names of families and genera used in the text (not on the maps which are in turn placed as closely as possible to the matching descriptions). Synonyms are not cited.

Howeyer, many synonyms, but perhaps not all, families and genera figure in the Cumulative Index “Enumération des plantes à fleurs d’Afrique tropicale” present at the end of the forth volume (1997 : pp. 678-712). Readers are invited to consult that index.

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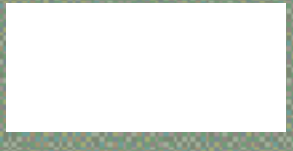

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