

A KEY TO THE SPECIES OF ADENIA SECTION OPHIOCAULON (PASSIFLORACEAE) MAINLY BASED ON VEGETATIVE CHARACTERS, WITH THE DESCRIPTION OF TWO NEW TAXA

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The section *Ophiocaulon* (Hook.) Harms¹ is fairly well distinguished from the other sections of *Adenia*, from which it differs mainly by structure of the receptacle and the single, spatulate gland at the transition from petiole to blade. Recent studies of the pollen by SPIRLET (1965)² also seem to set it apart.

The section is restricted to Africa and is distributed all over this continent south of the Sahara, though not found in the extreme N.E. corner comprising Ethiopia and Somalia. It seems to be absent from Madagascar.

The most recent synoptic monographic treatment of the section is by ENGLER, in Pfl. Welt Afr. III, 2, (1921) 601–603, but since then several new names have been proposed.

In view of the forthcoming revision of the genus *Adenia* I made a survey of the species belonging to the present section, for which I had the material from the following herbaria at my disposal: B, BR, C, COI, EA, G, HBG, L, LISU, M, PRE, S, WAG, and W, together providing me with an important amount of specimens. Of the twenty two specific names existing in the section, nine are retained. Moreover, two taxa new to science, a species and a subspecies, were recognized.

It must be observed that, after this reduction, most of the accepted species are still closely allied, and that inadequate material, without well-developed leaves (sustaining the inflorescences-bearing twigs), flowers and fruits, will sometimes be difficult to identify.

Although many species of *Adenia* – as many lianas do – display an astonishing variability in leaf shape and consistency, it appeared that within the section *Ophiocaulon* – beside characters of fruits and flowers – the shape, nervation and texture of the blade, and the situation of the glands on the lower surface, provide apparently some of the most important and most practical characters for the delimitation of the species. Engler used as the most important character for a splitting of the section the amount and perceptibility of the punctation (if present caused by tannin conglomerations in the leaf tissue) on the lower surface of the blade, as he puts: “Blätter unterseits reichlich punk-

¹ HOOKER, J. D., in Bentham & Hooker, Gen. Pl. I (1867) 813; HARMS, H., in Engler & Prantl, Nat. Pfl. fam. Nachtr. 1 (1897) 255.

² SPIRLET, M. L., Utilisation taxonomique des graines de pollen de Passifloracées I – Pollen et spores 7, 2 (1965) 249–301.

tiert" opposite to "Blätter unterseits hellgrau, nicht oder nur stellenweise wenig punktiert". In my opinion this feature is certainly valuable, but since it is strongly variable in some of the species, it can serve only for additional evidence.

The design of the presently given key is primarily based on leaf-characters.

The flowers seem, on the other hand, for a field key of less practical value than originally expected, because of their rather small size and relative superficial resemblance, and their variability as well. The female flowers are, within one species, generally considerably smaller than the males; great variability in shape and size of the various flower parts of one sex within one species may occur, as was previously also observed by me e.g. in the Asian *Adenia penangiana* (Wall. ex G. Don) de Wilde and *Adenia heterophylla* (Blume) Koord. In the male flowers (male plants are much more frequently present than females) the degree of development of the corona (absent, or as five cap-shaped organs, or as a ring; never consisting of threads), of the septa to the filamental tube at the bottom of the receptacle, and the degree of coalescence of the filaments are, though variable, of great taxonomic value. These characters are, however, not easily to observe, as the receptacle is only 2-4 mm wide. The fruits, though generally variable too, provide more easily observable characteristics, but fruiting specimens form, as a rule, only a small part of the material. Therefore it is a fortunate circumstance that a key primarily based on leaf characters could be framed, with which it will be possible to identify the majority of the specimens.

In the key the gross-distribution and the synonymy are given. Of each taxon a leaf is illustrated.

1. Leaves 3-5-plinerved 2
1. Leaves 3-plinerved but in addition with one or more pairs of main lateral nerves springing from the midrib, at least from 2-20 mm above its base 4
2. Leaves ovate to oblong with cuneate, rounded, or rarely more or less cordate base; the lower surface not punctate. Main nerves 3, with a distinct ladder-like secondary venation in between. Some minute glands only on the margin of the blade. Male flowers 10-18 mm long; sepals connate for 4-8 mm. Corona well developed, composed of two superposed rings. Septa absent or inconspicuous. Filaments 2-3 mm, connate for 1.5-2 mm. Fruits smooth or nearly so, c. 2.5-3 cm long. S.E. Cameroon, (N.) Congo, Uganda; probably also to be found in the Central African Republic. 400-1400 m alt. *Fig. 1, f;3* *A. tricostata* de Wilde
2. Leaves (broadly) ovate to orbicular, with cordate base. Main nerves 5, with ladder-like or coarsely reticulate secondary venation in between. Sepals free 3
3. One or two glands axillary to the upper lateral nerves, rarely also to the nerves of the basal pair. Leaves generally densely punctate beneath. Male flowers 6-8 mm long. Corona well developed, consisting of 5 separate cap-shaped parts. Septa inconspicuous. Filaments c. 1.5 mm, connate for 1-1½ mm. Fruits shallowly pitted, 2.5-3 cm long. S.E. Cameroon, N.

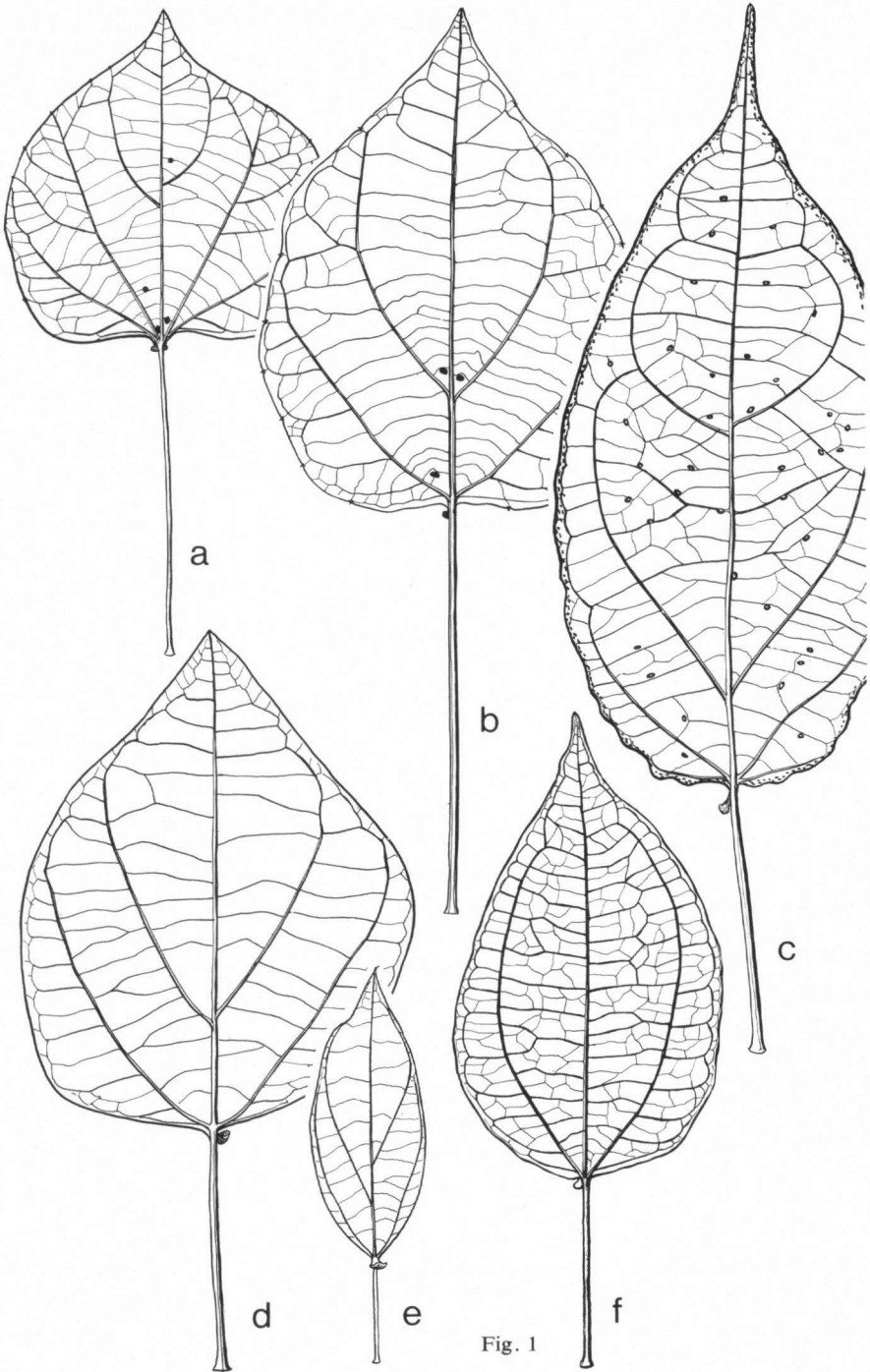


Fig. 1

and W. Congo, N. Angola. 0–1000 m alt. *Fig. 1, a; 3*

A. bequaertii Robijns & Lawalrée, subsp. *occidentalis* de Wilde

3. No glands axillary to the upper and basal pair of lateral nerves. Leaves punctate or not. Male flowers and fruits see below. S. Cameroon, Congo, Uganda. *Fig. 2, j, l.* . . . *Adenia reticulata* (De Wild. & Th. Dur.) Engler
4. All leaves oval to oblong with a more or less cordate base, or only those sustaining the inflorescences oval to oblong, with a more or less cuneate base 5
4. All leaves (broadly) ovate or triangular, with cordate, truncate or rounded base 7
5. Lower leaves (those sustaining the inflorescences-bearing lateral twigs) (broadly) ovate, with one pair of main lateral nerves springing from the midrib. Leaves when dry dark brown (-green) above, grey-glaucous, not punctate, beneath; the nerves yellowish to more or less reddish-brown. No glands on the lower surface. Male flowers 6–8(-9) mm long. Corona absent. Septa absent or inconspicuous. Filaments 1–1.5 mm, free, or connate for up to c. 0.5 mm. Sometimes an androgynophore is developed. Fruits smooth, c. 1.5 cm long. S. Cameroon, Congo. 0–800 m alt. *Fig. 1, d, e.* – *Adenia apiculata* (De Wild. & Th. Dur.) Engler, *A. dewevrei* (De Wild. & Th. Dur.) Engler; *A. poggei* (Engler) Engler
5. Lower leaves oval or oblong, with (1-) 2–3 (-4) pairs of main lateral nerves springing from the midrib. Nerves in dry leaves greenish 6
6. Leaves when dry more or less concolorous green on both surfaces, densely punctate only near the very margin on the lower surface. Lower surface with scattered glands. Male flowers 6–7.5 mm long. Corona well developed, consisting of 5 broadly cap-shaped parts. Septa inconspicuous. Filaments 2–2.5 mm, connate for 1.5–2 mm. Mature fruits not seen, but at least 2 cm long. ? Sierra Leone, Fernando Po, S. Cameroon, Congo 0–800 m alt. *Fig. 1, c.* –? *Modecca parviflora* G. Don, *Ophiocaulon lanceolatum* Engler, *Adenia mukengensis* Harms.; . . . *A. cynanchifolia* (Benth.) Harms
6. Leaves distinctly paler, punctate or not, beneath; glandless or with some glands only on or near the margin. Male flowers and fruits, see below. Filaments free. W. Africa. *Fig. 2, k, m.* *A. gracilis* Harms
7. Glands on the lower surface of the blade not, or only partly axillary to the upper pair of lateral nerves. Never glands tightly axillary to the basal side-nerves present. Leaf tops blunt, acute or acuminate 9

Fig. 1. Leaves of various species of *Adenia* sect. *Ophiocaulon*, seen from beneath: a. *Adenia bequaertii* Robijns & Lawalrée subsp. *occidentalis* de Wilde, $\times \frac{1}{2}$ (from Gillardin 340, BR); b. *Adenia bequaertii* Robijns & Lawalrée subsp. *bequaertii*, $\times 1$ (from Bequaert 3814, BR, the holotype); c. *Adenia cynanchifolia* (Benth.) Harms, $\times 1$ (from de Wilde 1620, WAG); d. *Adenia poggei* (Engler) Engler, $\times 1$; e. id, an inflorescence sustaining leaf, $\times 1$ (d and e from de Wilde 2684, WAG); f. *Adenia tricostata* de Wilde, $\times \frac{1}{2}$ (from Breteler 1465, WAG, the holotype).

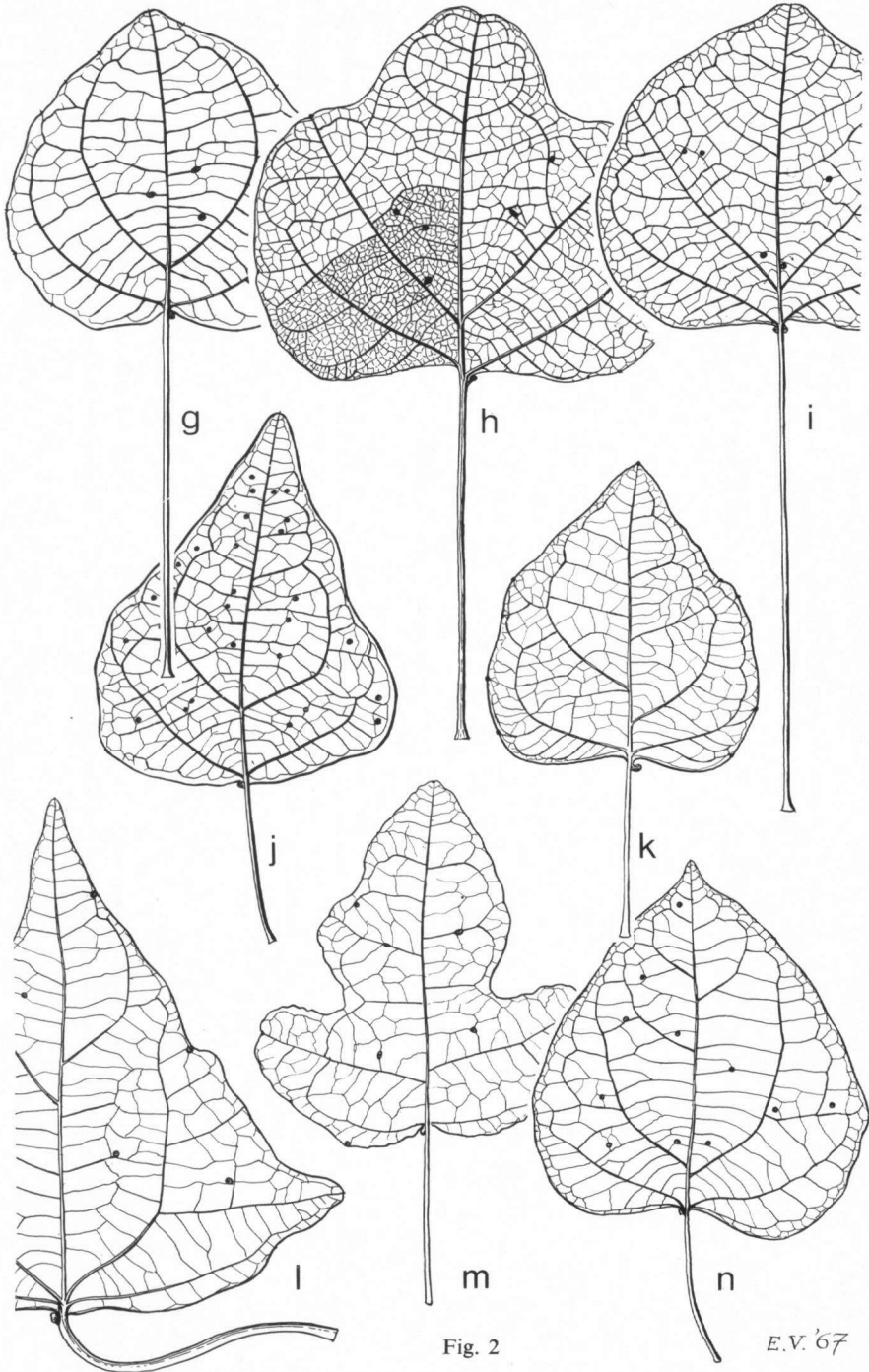


Fig. 2

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7. All glands on the lower surface of the blade (glands not in every leaf present) tightly axillary to the basal- and upper pair of lateral nerves, or tightly axillary only to the upper pair. Leaves generally 0.5–1.5 cm long acuminate. *Fig. 1, a, b.* 8
8. Glands axillary to the upper- and basal pair of lateral nerves. Lower side of leaves not punctate. Male flowers 8–12 mm long. Corona well developed, consisting of 5 cap-shaped parts, superposed by wart-like appendages. Septa inconspicuous. Filaments 2–3 mm, connate for 1–1.5 mm. Fruits finely granulate, 3–5 cm long. E. Congo (Kivu Prov.), Ruanda, Burundi, Uganda (Ruwenzori Mt), W. Kenya. 1500–2500 m alt. *Fig. 1, b; 3*
A. bequaertii Robijns & Lawalrée subsp. **bequaertii**
8. Glands axillary only to the upper pair of lateral nerves. Lower (and often also the upper) surface of leaves strongly punctate. Male flowers 6–8 mm long. Corona well developed, consisting of 5 cap-shaped parts. Septa inconspicuous. Filaments c. 1.5 mm, connate for 1–1½ mm. Fruits shallowly pitted, 2–3 cm long. Main nerves of the leaves 5, generally all springing from the top of the petiole; see above. S.E. Cameroon, N. and W. Congo, N. Angola. 0–1000 m alt. *Fig. 1, a; 3*
A. bequaertii subsp. **occidentalis** de Wilde
9. Tertiary venation on the lower side of the leaves well visible; leaves not or only incidentally punctate. S. or E. Africa 10
9. Tertiary venation on the lower side of the leaves not or hardly visible. Leaves (strongly) punctate or not. W. or E. Africa 11
10. Leaves broadly ovate to orbicular, cordate, more or less chartaceous, not punctate. Lateral nerves neatly arching towards the top. Male flowers 10–14 mm long. Corona absent. Septa absent. Filaments c. 2 mm, connate for about the half. Fruits smooth, c. 4–4.5 cm long. W. Tanzania, S.E. Congo, Nyasaland. 1000–2000 m alt. *Fig. 2, g* **A. stolzii** Harms
10. Leaves broadly ovate, orbicular, or triangular, entire or often bluntly three-lobed in the upper half, cordate or truncate at the base, herbaceous to leathery, not punctate. Lateral nerves spreading, the upper pair terminating in small glands on the margin, which are generally the tips of the lateral lobes. Male flowers 7–11 mm long. Corona absent. Septa inconspicuous or absent. Filaments 2–3 mm, connate for 0.5–1 mm. Fruits smooth or finely granulate, or pitted, (2-) 2.5–4.5 cm long. E. and S. Africa, from N.E. Congo, Tanzania and Angola to S. Africa. 0–1100 m alt. *Fig. 2, h.* – **A. rhodesica** Suesseng.; **A. gummifera** (Harvey) Harms

Fig. 2. Leaves of various species of *Adenia* sect. *Ophiocaulon*, seen from beneath: g. *Adenia stolzii* Harms, × ½ (from Stolz 541, M); h. *Adenia gummifera* (Harvey) Harms, × 1 (from Schweickerdt 1039, W); i. *Adenia cissampeloides* (Planch. ex Benth.) Harms, × 1 (from de Wilde 2641, WAG); j. *Adenia reticulata* (De Wild. & Th. Dur.) Engler, × 1, (from Dewèvre 691a, BR, the holotype; 1 id. (from Louis 7660, BR)); k. *Adenia gracilis* Harms, × 1 (from Zenker et Staudt 457, B, a syntype); m id. (from Bos 1491, WAG); n. *Adenia dinklagei* Hutch. et Dalz., × ½ (from Dinklage 2109, B, an isotype).

- 11. Leaves lobed14
- 11. Leaves entire, rarely hastate12
- 12. Upper main lateral nerves arching towards the top, anastomosing . . .13
- 12. Upper pair of main lateral nerves more or less directly ending in small glands on the margin of the blade. Leaves broadly ovate to orbicular, often faintly 5-angular, with blunt, rarely acute top, 4–12 cm long. Glands on the lower surface few, partly (tightly) axillary to the upper pair of main lateral nerves, rarely glands absent. Male flowers 8–11 mm long. Corona absent, or consisting of 5 cap-shaped parts. Septa inconspicuous to well developed. Filaments 1.5–2 mm, free or nearly so, connate for up to c. 0.5 mm. Fruits smooth or inconspicuously pitted, 2.5–4 cm long. Liberia to E. Africa, S. to Congo. 0–1300 m alt. *Fig. 2, i* –? *Passiflora marmorea* Linden, *Adenia rowlandii* (Baker) Harms, *Ophiocaulon tropeoloides* A. Cheval., nom. subnud., *A. triloba* Engler;
 A. cissampeloides (Planch. ex Benth.) Harms
- 13. Filaments free, or up to halfway connate14
- 13. Filaments entirely connate or nearly so. Leaves (broadly) ovate, shortly acuminate, 6–14 cm long. Glands scattered, partly axillary to the lateral nerves. Male flowers 7–9 (-10) mm long. Corona absent. Septa absent. Filaments 1.5–2.5 mm, connate for 1.5–2 mm. Fruits sparsely, finely pitted or warted, 2–2.5 cm long. Senegal to Ivory Coast. 0–500 m alt. *Fig. 2, n.* *A. dinklagei* Hutch. & Dalz.
- 14. Corona in male flowers well developed. Leaves small, broadly ovate to oblong, entire to deeply 3–7 lobed, with blunt or acute top, 2–6 cm long. Glands in entire leaves only on or near the margin, in lobed leaves sometimes scattered. Male flowers 7–10 (-14) mm long. Corona well developed, consisting of an uninterrupted ring or of 5 broadly cap-shaped parts. Septa well developed or inconspicuous. Filaments 1–2 mm, free, or up to $\frac{3}{4}$ mm connate. Fruits small, smooth or rarely finely granulate, 1–2 (-2.5) cm long. W. Africa: Liberia to Angola. 0–1000 m alt. *Fig. 2, k, m.* –? *Modecca incisa* A. Cheval. nom. subnud., ? *Modecca quercifolia* A. Cheval. nom. nud.; *A. gracilis* Harms
- 14. Corona in male flowers absent, or inconspicuous. Leaves ovate to triangular, entire or 3(-5) lobed, mostly long acuminate, 4–10 cm long. Glands several, scattered, or only near the margin, or glands absent. Male flowers 6–10 mm long. Corona absent. Septa well developed. Filaments 1.5–2 mm, connate for 0.5–1 mm. Fruits mostly thick-walled, rugose or wrinkled, rarely nearly smooth, 2–3 cm long. S. Cameroon, Congo, Uganda, N. Angola. 0–1200 m alt. *Fig. 2, j, l.* – *Adenia lobulata* Engler;
 A. reticulata (De Wild. & Th. Dur.) Engler

REMARKS

The species *Adenia dinklagei*, *A. gracilis*, *A. reticulata*, and *A. cissampeloides* form a group in which, in certain specimens, difficulties with the identifi-

cation may rise. Here it will be generally necessary to analyse the flowers. Apparently, hybrids with reduced fertility do not exist in this group, as I never observed reduction of the pollen in specimens with seemingly intermediate habit.

Adenia gummifera resembles in many respects *Adenia cissampeloides*. It is, however, easily recognized by the distinct, much finer reticulation of the leaves, a valid character put forward by L. C. C. LIEBENBERG, in *Bothalia* 3, 4 (1939) 535 and A. & R. FERNANDES in *Garcia de Orta* 6, 2 (1958) 17, fig. 12, 13.

Adenia stolzii, *A. poggei* and *A. bequaertii* are next the most related to this group. They are without difficulty distinguished by several features of the leaves.

Adenia stolzii and *A. bequaertii* subsp. *bequaertii* are montane species.

A relatively isolated position in the section is occupied by *Adenia cynanchifolia* and *A. tricostata*. Both have distinct types of leaves (fig. 1, c, f).

In *Adenia dinklagei*, *A. bequaertii*, *A. cynanchifolia* and *A. tricostata* the filaments are for the larger part united into a tube; in the other species they are free, or up to about halfway connate. Besides, *Adenia tricostata* is deviating in the flowers by the well developed, double corona and the largely connate sepals.

In all other species of the section the sepals are free, or united only at the very base.

This is possibly also the case in the holotype of *Adenia dinklagei* Hutchinson & Dalziel, which was mainly distinguished by having the sepals halfway connate. According to KEAY in the second edition of the *Flora of West Tropical Africa*, Vol. I, 1 (1954) 202 the sepals are connate for one third. I found, in an isotype in B, Dinklage 2109, a female specimen, the sepals entirely free. The species is, however, characterized by the connate filaments and some characters of the leaves.

Adenia tricostata de Wilde, spec. nov.

Scandens, gracilis. *Folia* ovata ad oblonga, 4–14 × 1.5–7 cm, basi cuneata, rotundata vel raro cordata, acuminata, acumine 0.5–2.5 cm longo, integra, 3-nervia, nervis subparallelis, venis secundariis distincte trabecularibus, supra obscure viridia, subtus pallide viridia opaca, epunctata, eglandulosa, venis viridibus vel aurantiaco-brunneis. Margine minute dentata, dentibus in utroque latere (0-)3–10, pallide fuscis, quam 0.5 mm brevioribus. Petiolus 1.5–7 cm longus, apice glandula spathulata munitus. Stipulae parvae reniformes, margine laceratae, c. 1 mm latae. *Cirrho* axillares, 10–15 cm longi, interdum apice ramosi. *Inflorescentiae* axillares, cymosae, laxae, pauciflorae. Pedunculus gracilis, c. 4–15 cm longus, interdum cirrho 1–2 cm longo terminatus. Bracteae et bracteolae acute acuminatae, 0.5–1 mm longae. Flores viridi-lutei. *Flores masculi* tubulosi, 10–18 × 2–3.5 mm. Pedicellus 2–4 mm infra apicem articulatus. Receptaculum 1–2.5 × 1.5–3 mm, plus minusve carnosa. Calycis tubus 4–8 mm longus; calycis lobi oblongi ad lanceolati, 3–8 mm longi. Petala lanceolata, basin versus decurrentia, apice acuta, 5–10 × 1 mm, 1-nervia, 1.5–2.5

mm infra calycis lobos inserta. Corona subcarnosa, e costis (haud filamentis) duabus superpositis composita, costa superiori undulata subquinelobata, costa inferiori ut annulus apparet, ambo c. 0.5–1 mm altae. Coronae squamulae desunt. Stamina 5, ad receptaculi basin inserta. Filamenta 2–3 mm longa, parte inferiori in tubum 1.5–2 mm longum coalita. Antherae lanceolatae, acutae vel obtusae, 8–11 mm longae. Ovarium imperfectum, stipite incluso c. 1 mm longum. *Flores feminei* tubuloso-campanulati, 7–13 × 2.5–3.5 mm. Pedicellus 1–1.5 mm infra apicem articulatus. Receptaculum 1.5–2 × 2.5–3 mm, subcarnosum. Calycis tubus brevis, 1–3 mm longus; calycis lobi oblongi ad lanceolati, 5–11 mm longi. Petala lanceolata, 3–4 × 0.3 mm, 1-nervia, 0–1.5 mm infra calycis lobos inserta. Corona subcarnosa, c. 0.5 mm alta, obsolete 5-lobata. Coronae squamulae desunt. Staminodia 5, c. 1 mm longa, basi in tubum

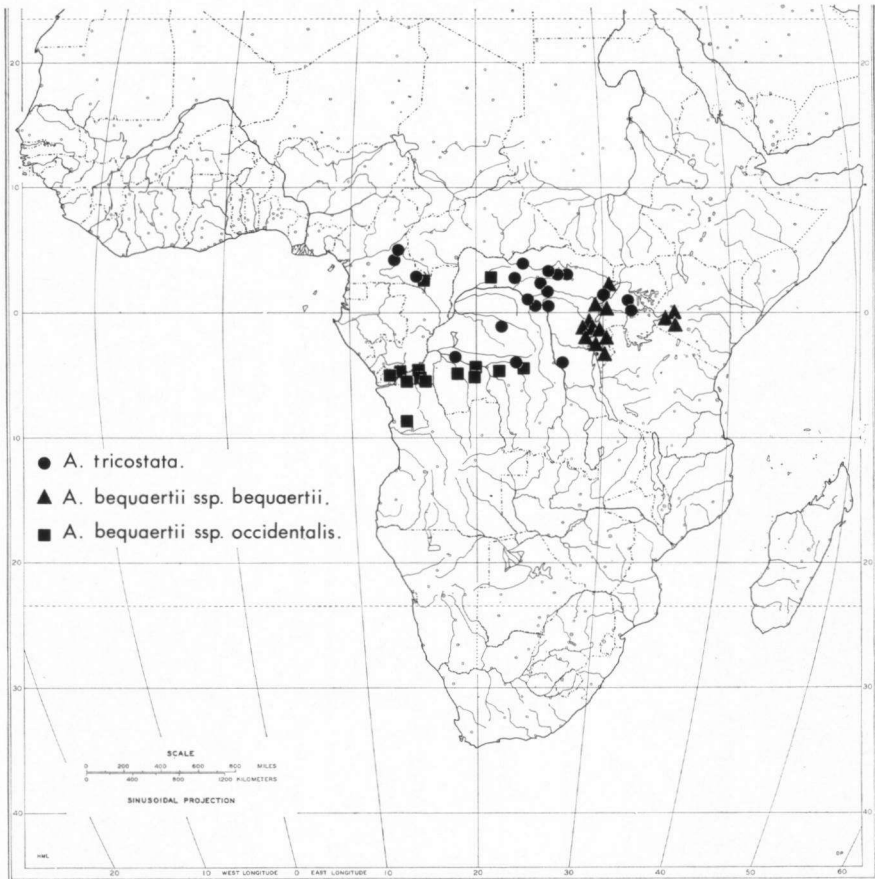


Fig. 3. Localities of *Adenia tricostata* de Wilde, *Adenia bequaertii* Robijns & Lawalrée subsp. *bequaertii* and *Adenia bequaertii* subsp. *occidentalis* de Wilde.

brevem coalita. Ovarium ovatum, 3.5–4 × 2–2.5 mm, stipitatum. Gynophorium c. 1 mm longum. Stylus c. 2.5 mm. Stigmata 3, lacerata, sessilia, totum c. 2 mm diam. *Fructus* ovalis, c. 2.5–3 × 2 cm, stipiti (gynophorio) c. 6 mm longo.

Distribution and material examined (*fig. 3*):

CAMEROON: Bertoua, 650 m, gallery forest, moist site, male flowers, June 1961: Breteler 1465 (WAG, holotype); Yokadouma, c. 600 m, edge of plantation, male flowers, June 1961: Breteler 1503 (WAG); Bertoua, 640 m, secondary forest, male flowers, Jan. 1962: Breteler c.s. 2410 (WAG).

CONGO: Sankuru, forest, female flowers, April 1906: Anon. s.n. (BR); Barumbu (Basoko), sterile, Nov. 1913: Bequaert 1148 (BR); Mandini (Banalia), forest, galled flowers, Dec. 1913: Bequaert 1451 (BR); La Kulu, forest, sterile, Oct. 1931: de Brander 728 (BR); Bas Uele, male flowers, June 1935: Dewulf 904 (BR); Station Inéac Beketa, semideciduous forest, male flowers, April 1955: Evrard 657 (BR); Batite (Zobia), forest, sterile, Nov. 1955: Gerard 1991 (BR); Madabu (Zobia), sterile, April 1957: Gerard 2830 (BR); Bambesa, galled flowers, May 1957: Gerard 2910 (BR); Irumu, Mont Homas, 1300–1400 m, secondary forest, half mature fruits, June 1949: Germain 5217 (BR); Makaw (Kutu), sterile, Sept. 1953: Jans 955 (BR); Stanleyville, sterile, Jan. 1904: Laurent s.n. (BR); Yangambi, 470 m, roadside, sterile, Dec. 1938: Louis 13033 (BR); Congo, without locality and date, sterile: Louis 15828 (BR); Lutshi-River, sterile: Louis 16103 (BR); Buta à Banalia, secondary forest, male flowers, Jan. 1926: Robijns 1340 (BR); Mobwana, sterile, Sept. 1914: Vermoesen 391 (BR).

UGANDA: Entebbe, 3900 ft, male flowers, Aug. 1934: Chandler 1162 (BR); Kajansi Forest, 3850–3900 ft, galled flowers, May 1937: Chandler 1641 (B, BR, EA).

Adenia bequaertii Robijns & Lawalrée subsp. *occidentalis* de Wilde, subsp. nov.

Liana modice alta. Ramuli vulgo tenuiter maculata. *Folia* late ovata, basi cordata, apice acuta vel in acumen ad c. 1.5 cm longum angustata, integra, herbacea, 3–13 × 2.5–12 cm, palmato quinquenervia, nervis vulgo e petioli apice ortis, venis secundariis ac tertiariis sat obscuris, grosse reticulata, subtus dense punctata et glandulis in axillis paris superioris nervorum primariorum positis munita, ad marginem minute glandulifera. Petiolus 1.5–6 cm longus, apice glandula spatulata praeditus. Stipulae reniformes, margine incisae, c. 1 mm latae. *Cirrho* axillares, 10–20 cm longi, saepe apice ramosi. *Inflorescentiae* axillares, cymosae, floribus primo ac secundo natis interdum cirrho 1–3 cm longis subitis. Pedunculi 1.5–15 cm longi. Bractee et bracteolae exiguae, acutae, vulgo margine tenuiter incisae, 0.5–1 mm longae. Flores viridi-lutei, vulgo pallide rubro-venosi ac tenuiter punctati. *Flores masculi* campanulate conniventes, 6–8 mm longi. Pedicellus 1.5–2 mm infra apicem articulatus. Receptaculum crateriforme, c. 0.5–1 × 2 mm, plus minusve carnosum. Calycis lobi liberi, oblongo-lanceolati, 5–7 × 1.5–2 mm. Petala lanceolata, basin versus angustata, 5–7 × 1.5–2 mm, 3-nervia, margine laciniata, 0–0.5 mm infra calycis lobos inserta. Corona ex organis quinque carnosis plus minusve late cucullatis, cum petalis alternantibus, c. 0.5 mm altis composita. Coronae squamulae ad receptaculi basin desunt. Stamina 5, ad receptaculi basin inserta. Filamenta 1.5–1½ mm longa, parte inferiori in tubum 1–1½ mm longum coalita.

Antherae oblongae, subcurvatae, obtusae, c. 3 mm longae. Ovarium imperfectum, c. 0.5 mm longum. *Flores feminei* campanulati, 4–5 × 2–3 mm. Pedicellus 0.5–1 mm infra apicem articulatus. Receptaculum 0.5 × 1.5 mm. Calycis lobi oblongo-lanceolati, 4–4.5 × 1.5–2 mm. Petala lanceolata, uninervia, c. 3 × 0.5 mm, inter calyces lobos inserta. Corona 5-partita, c. $\frac{1}{2}$ mm alta, ut annulus infra petala interruptus apparet. Coronae squamulae ad receptaculi basin desunt. Staminodia 5, c. 0.5 mm longa. Ovarium ovatum, c. 2 × 1.5–2 mm. Gynophorium c. 0.5 mm longum. Stylus $\frac{3}{4}$ mm longus. Stigmata 3, sessilia, lanata, totum c. 2 mm diametentia. *Fructus* subovales, 2–3 × 1.5–2 mm, paullum depresso-punctati.

Distribution and material examined (*fig. 3*):

CAMEROON: Yokadouma, c. 500 m, secondary forest, female flowers and fruits, July 1965: Leeuwenberg 6120 (WAG).

CONGO: Ngembo (Léopoldville), sterile, 1909: Allard 66 (BR); M'vuazi, forest, male flowers, Sept. 1951: Devred 656 (BR); Kakenge, forest, c. 170 m, male flowers, Dec. 1937: Gillardin 340 (BR); Sangaie (Lusambo terr.), c. 100 m, male flowers, Feb. 1939: Gillardin 511 (BR); Likimi, sterile, 1910: Malchair 371 (BR); Gimbi (Vallée de la Mvuzi), secondary forest edge, male flowers, Jan. 1949: Toussaint 763 (BR); Thysville, fruits, Feb. 1909; Vanderyst s.n. (BR); Kikwit, male flowers, Jan. 1914: Vanderyst 2930 (BR, holotype); Ipamu, male flowers, Jan. 1921: Vanderyst 8592 (BR); Idiofa, flowers, Jan. 1921: Vanderyst 8663 (BR); Ipamu, flowers, Jan. 1921: Vanderyst 8723 (BR); Byri (Kisantu), female flowers, Jan. 1933: Vanderyst 37540 (BR); do, female flowers, Jan. 1933: Vanderyst 37592 (BR); do, female flowers, Jan. 1933: Vanderyst 38394 (BR).

ANGOLA: Golungo Alte (prov. Cuanza Norte), forest edge, sterile, Nov. 1855: Welwitsch 870 fol. 4 (LISU).

Note: Subspecies *occidentalis* has its distribution in the lower west part of equatorial Africa, whereas subspecies *bequaertii* is confined to the montane zone at an altitude of 1500–2500 m of E. Congo (Kivu Prov.), Ruanda, Burundi, Uganda and W. Kenya, as is shown in *fig. 3*.

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