

THE IDENTITY OF *ADENIA SCHWEINFURTHII* ENGLER (PASSIFLORACEAE), WITH A KEY TO THE AFRICAN SPECIES OF *ADENIA* SECTION *BLEPHARANTHES* (J. E. SMITH) MIQUEL

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SUMMARY

Notes are given on *Adenia* sect. *Blepharantes* (*Passifloraceae*) in Africa, with a key to the species. *Adenia schweinfurthii* Engler is a species restricted to eastern Central Africa, not occurring in West- and all over East Africa as was often assumed. *Adenia lobata* (Jacq.) Engler is restricted to West Africa. The in Africa widely spread species should be called *Adenia rumicifolia* Engler. Lectotypes are chosen from isotype material for both *Adenia schweinfurthii* and *Adenia rumicifolia* of which the holotypes were lost in Berlin. *Adenia miegei* Aké Assi is reduced to a variety of *Adenia rumicifolia*.

The African representatives of *Adenia* sect. *Blepharantes* (J. E. Smith) Miquel except the slender oblong-leaved forest species *Adenia mannii* (Mast.) Engler, are robust lianas with broadly bell-shaped yellowish-green flowers, and with (mostly) variable cordate-ovate or orbicular, entire or palmately lobed leaves with two gland-bearing auricles at the top of the petiole. They occur in West-, Central- and East Africa in the forest- and savanna region from Senegal to S. Rhodesia and Mozambique; they are found north to the fringing scrub along water-courses on the slopes of the Marra Mountains in Darfur Province (Sudan) and in the gallery forests of tributaries of the Blue Nile, East of Lekemti, Ethiopia. The West African specimens of the section are, except those belonging to *Adenia mannii*, in literature and in the herbaria generally referred to *Adenia lobata*, the East African plants to *Adenia schweinfurthii* or to *Adenia lobata*.

After a revision of the section, 18 names for Africa appeared actually to belong to it, of which six are retained. One, *Adenia miegei* Aké Assi, is reduced to a variety of *Adenia rumicifolia* Engler & Harms.

The only Asian representative, and the type species of the section, is *Adenia hondala* (Gaertn.) de Wilde from India and Ceylon.

It was found that *Adenia lobata* (Jacq.) Engler – “*lobata*” being the oldest epithet for the African species of this section – is a species restricted to West Africa, from Senegal to Cameroon, occurring apparently not too far from the coast. The other West African specimens belong for the greater part to *Adenia rumicifolia* Engler & Harms var. *miegei* (Aké Assi) de Wilde comb. nov. *Adenia rumicifolia* extends over the entire area of the section in Africa. Its (sterile) holotype, A. Engler 3362, from East Usambara (N.E. Tanzania), was destroyed in Berlin, but an isotype in the East African Herbarium has been examined by me, and is herewith designated as substitute of the holotype. Most East African

specimens belong to the type variety of this species, *Adenia rumicifolia* var. *rumicifolia*.

Adenia schweinfurthii was described in 1892 (Bot. Jahrb. 14, p. 377) by Engler on material collected by G. Schweinfurth in 1870 in "Niam-niamland" and in "Mambutoland" (that is in the frontier-region of the Central African Republic, the Congo Republic and the Sudan, and in N.E. Congo, N.W. of Lake Albert), mainly on account of the terete stems, and the relatively small, suborbicular leaves. The two syntypes, Schweinfurth 2974¹⁾ and 3485, are no longer present in the Berlin Herbarium. According to the protologue they were both male specimens, but under No. 3485 Engler also mentioned specimens with semi-mature fruits. These female specimens apparently were collected from another individual plant, as the species are almost always dioecious. As specimens with unripe fruit are easily confused it is not entirely certain that these female specimens really belonged to the same species as the male specimens.

The Director of the Kew Herbarium was kind enough to send me duplicates of the two mentioned Schweinfurth collections. They both are male, and belong to a species with a restricted distributional area in eastern Central Africa, namely in Central- and N.E. Congo (Prov. Equateur, Orientale, and Kivu), S. Uganda and N.W. Tanzania.

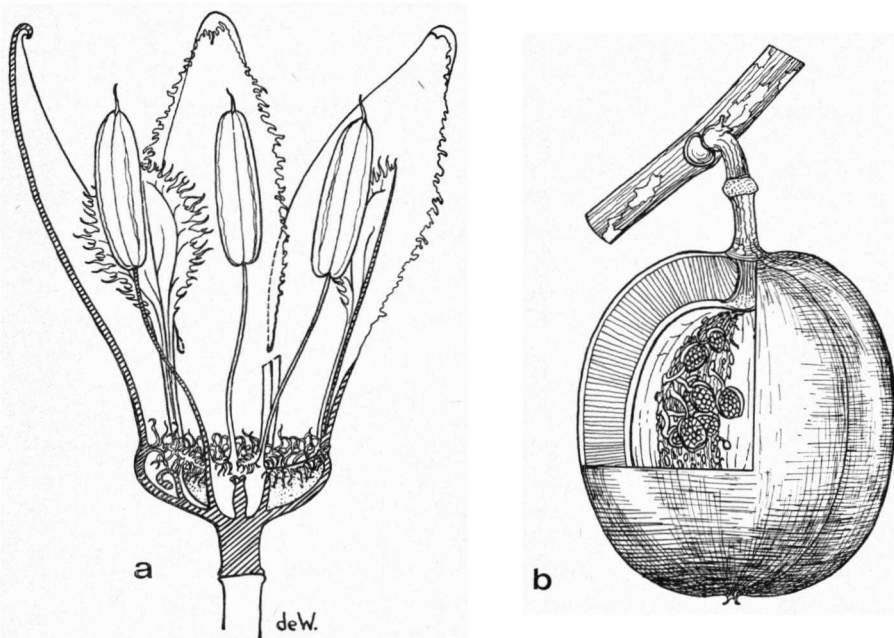


Fig. 1. *Adenia schweinfurthii* Engler: a. halved male flower showing anthers on long filaments (x5) (Schweinfurth 3485, K, lectotype); b. fruit, showing thick pericarp and one of the three parietal placentas (x1) (J. Louis 10681, BR).

¹⁾ No. 2974 is by Engler, probably erroneously, cited as 2947.

Of the two Kew specimens, Schweinfurth 2974 and 3485, Schweinfurth 3485 is richest in flowers and is chosen as lecto-type. Duplicates are expected to be preserved also in the Paris Herbarium.

Adenia schweinfurthii is characterized by the small flowers with small anthers on filaments much longer than the anthers (fig. 1, a.), by the subglobular, glossy, orange-yellow fruits (fig. 1, b.) and to a less extent by the relatively small, mostly (sub-) orbicular leaves. In Engler's description it is erroneously stated: "*staminum filamentis quam antherae lineari-oblongae mucronulatae brevioribus*", whereas actually, as also in the isotype specimens, the filaments are much longer than the anthers (fig. 1, a). The species was later on interpreted by Engler, and by him and Harms in such a wide circumscription that it was assumed to occur all over Africa. According to them (in Engl. Pfl. welt Afr. III, 2 (1921) p. 603, 604) it was found "in Sierra Leone, Togo and Lagos, im Ghasalquellengebiet¹⁾, am Kiwu-See und anderen Plätzen des zentralafrikanischen Seengebiets, sowie in Ost-USambara um 900 m". Harms (in Engl. & Prantl, Nat. Pfl. fam. 21 (1925) p. 491, fig. 218 G.H.) noted "in West- und Ostafrika verbreitet."

In 1923 Harms, in Notizbl. Bot. Gart. Berlin 8, p. 296, gave an extended description of the sterile type specimen of *Adenia rumicifolia*, named after the more or less hastate leaves, at the same time withdrawing that species, as appears from his list of accepted species. In a discussion he stated: "Ich halte dieses Stück nur für ein vielleicht noch jugendliches oder dem unteren Teil der Pflanze angehörendes Sprossstück der in Usambara vorkommenden grossblütigen Form von *Adenia Scheinfurthii* Engler. A. Stolz hat dieselbe grossblütige Form auch im Nyassa-Seegebiet bei Kyimbila gesammelt (n. 409), und eine von ihm eingesandte Keimpflanze hat lanzettliche, am Grunde etwas spießförmige Blätter, ausserdem schickte er neben Sprossen mit ± rundlichen bis breit-eiförmigen Blättern auch solche mit eiförmigen, am Grunde schwach spießförmigen Blättern. Danach wechselt offenbar die Blattgestalt bei derselben Art in der angegebenen Weise, so dass man der Ausbildung der kurzen spießförmigen Lappen keinen Wert beilegen kann."

Übrigens dürfte die *A. lobata* var. *grandiflora* R. E. Fries (in Wiss. Ergebn. Schwed. Rhodesia-Kongo-Exped. I (1914) 157; Bangweolo-See) mit den genannten Formen übereinstimmen oder ihnen sehr nahe stehen. Freilich scheinen mir die Unterschiede von *A. lobata* (Jacq.) Engl. und *A. Schweinfurthii* Engl. noch nicht völlig geklärt, und möglicherweise sind sie zu vereinigen."

The present study has revealed that the majority of the East African specimens, generally referred to *Adenia schweinfurthii* or to *Adenia lobata* var. *grandiflora* Fries, should be called *Adenia rumicifolia*. *Adenia schweinfurthii* is a subendemic species of eastern Central Africa; *Adenia lobata* var. *grandiflora* is a synonym of *Adenia rumicifolia* Engl. & Harms var. *rumicifolia*.

In the key to the recognized African species of *Adenia* sect. *Blepharantes* also the main distribution and the synonyms are given.

¹⁾ This is the type locality.

1. Plants slender, c. 5 m long, with terete stems. Leaves ovate to oblong-lanceolate, with acute or rounded base. Mature flowers slender, (10-) 15-25 × 5-8 mm. Fruits fusiform, 2.5-3.5 × 1.5-2 cm. Forest region of West and equatorial Africa. *Adenia oblongifolia* Harms; *Modecca tenuispira* Stapf; *Adenia tenuispira* (Stapf) Engler; *Modecca nigricans* A. Chev. nom. nud.; *Modecca mannii* Mast.....*Adenia mannii* (Mast.) Engler
1. Plants robust, up to 30 m long, with terete, angular or tubercled stems. Leaves ovate, orbicular, rarely oblong, entire or lobed, with cordate, truncate, hastate or acute base. Mature flowers 8-35 × 5-15 mm. Fruits globular, elliptic or pear-shaped, always with rounded apex.
 2. Anthers 3.5-5 mm, shorter than the filaments. Mature male flowers 8-15 (-20) mm long. Leaves mostly suborbicular, up to 15 cm long. Fruits sub-globular to elliptic, 3.5-5 × 2.5-4 cm, 5-10 mm stiped. Stems terete or (rarely) winged. Congo (Equateur-, Orientale- and Kivu-Prov.), S. Uganda, N.W. Tanzania. *Fig. 1, a, b.Adenia schweinfurthii* Engler
 2. Anthers (5-) 6-11 mm, much longer than the filaments. Mature male flowers 10-35 mm long. Leaves variable, up to 30 cm long. Fruits globular or pear-shaped.
 3. Anthers blunt, not or shortly (generally less than 0.5 mm) apiculate (if longer apiculate, then with lanceolate, not spatulate, petals). Fruits (sub-)globular, 1-3 per inflorescence. Leaves often lobed.
 4. Petals of male flowers linear-lanceolate, long laciniate-fimbriate. Petals of female flowers smaller. Anthers blunt, not or short-apiculate. Fruit 3.5-7 × 2.5-6 cm, (5-) 7-15 mm stiped. Pericarp fleshy, 5-15 mm thick. Leaves entire or (deeply) 3-5 (-7) lobed. Older stems densely tubercled. W. Africa, from Senegal to Cameroon. *Kolbia elegans* P. Beauv.; *Modecca lobata* Jacq. var. *elegans* (P. Beauv.) Mast., *quoad basion.*; *Modecca diversifolia* Schum. & Thonn., non Wall.; *Modecca tenuifolia* Planch. ex Benth.; *Modecca caricifolia* A. Chev. nom. nud.; *Modecca incisa* A. Chev. nom. nud.; *Adenia mildbraedii* Harms.....*Adenia lobata* (Jacq.) Engler
 4. Petals of male flowers broadly spatulate, short lacerate-fimbriate; petals of female flowers lanceolate, not or short-fimbriate only near the top. Anthers blunt, not apiculate. Fruits 2.5-3.5 × 2.5-3 cm, 2-5 mm stiped. Pericarp not particularly fleshy, 2-3 mm thick. Leaves entire or bluntly, shallowly 3-lobed. Stems relatively slender, terete. S. Rhodesia and Mozambique, once in S. Tanzania near Lindi.....*Adenia panduraeformis* Engler
 3. Anthers bluntish to acute, 0.5-2 mm apiculate; petals of male flowers spatulate. Fruits globular or pear-shaped, 1-8 per inflorescence. Leaves only rarely (shallowly) lobed.
 5. Fruits small, (sub-)globular, 2-3 (-3.5) × 1.5-3 cm, not or up to 2 mm stiped, 2-8 together in (sub-) sessile inflorescences. Pericarp 1.5-3 mm thick. Flowers small, 10-20 × 5-8 (-10) mm. Older stems terete or (3-4)-angular or -winged. W. equatorial

- Africa: S. Cameroon, Gabon, W. Congo (Léopoldville-Prov.)
*Adenia letouzeyi* de Wilde
5. Fruits pear-shaped, 3.5–8 × (1.5–) 2.5–4.5 cm, 3–6 mm stiped, 1–3 per stalked- or sub-sessile inflorescence. Pericarp 4–10 mm thick. Flowers (10–) 15–35 × 7–15 mm. Older stems terete or 3–5-angular or winged, or coarsely tubercled. Forest and savanna region of West, Central and East Africa.....
*Adenia rumicifolia* Engler & Harms
6. Plants robust, with large orbicular to broadly ovate, mostly deeply cordate leaves 9–30 × 8–25 cm. Male flowers up to 25 mm long. Fruits long-pyriform, (3.5–) 5–8 cm, the attenuated part about as long to half as long as the remainder of the fruit. W. and Central Africa; east to N.E. Congo, south to N. Angola. *Modecca lobata* Jacq. var. *elegans* [non (P. Beauv.) Mast.] Mast.; *Modecca koutiensis* A. Chev., *nom. nud.*; *Adenia koutiensis* (A. Chev.) Obaton, *nom. inval.*; *Adenia miegei* Aké Assi, Bull. Jard. Bot. État. Brux. 31 (1961) 311, fig. 1.....var. *miegei* (Aké Assi) de Wilde, *comb. nov.*
6. Plants less robust, with orbicular, oval or ovate-oblong, variable leaves 5–20 × 5–10 cm, with cordate, truncate, cuneate or hastate base. Male flowers up to 35 mm long. Fruits short-pyriform, 3–5 cm, the attenuated part about half as long or shorter than the remainder of the fruit. Central and East Africa. *Adenia lobata* Jacq. var. *grandiflora* Fries.....
var. *rumicifolia*

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