

NOTES ON MYRTACEAE VII

MYRTACEAE OF FRENCH EQUATORIAL AFRICA

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While studying the *Myrtaceae* of Africa in the Paris herbarium, I found a few apparently new species among those collected in Gaboon and the French Congo. These regions are not covered by the Flora of West Tropical Africa, and none of the species of *Eugenia* known from West Tropical Africa north of the French Cameroons have so far been discovered in Gaboon or the French Congo. The descriptions of the new species follow here:

***Eugenia Tholloni* Amsh. n.sp. Fig. 1.**

Frutex ramosus ramulis juvenilibus brunneo-tomentosis, adultis glabris, rimosis; internodiis brevibus circ. $\frac{1}{2}$ – $1\frac{1}{2}$ cm longis. Foliorum petioli brevissimi, circ. 2 mm longi, pubescentes, glabrescentes. Lamina oblanceolata, apice obtusa, basi attenuata, tenuiter coriacea, novella utrinque praesertim ad costam pubescentia, adulta glabra, tenuiter coriacea, $3\frac{1}{2}$ –6 cm longa, $\frac{1}{2}$ – $1\frac{1}{2}$ cm lata, costa supra plana, subtus prominente, nervis lateralibus tenuibus, utrinque circ. 8, patentibus, paullulum obliquis, in nervum collectivum circ. 1 mm a margine distantem conjunctis. Inflorescentia glomerata, floribus sessilibus vel interdum nonnullis breviter pedicellatis. Sepala rotundata, sparse pubescentia vel glabra, $1\frac{1}{2}$ mm longa, ciliata. Stylus filiformis; stigma parvum, saepe breviter bifidum. Bacca globosa, in sicco \pm 6 mm in diametro. Embryo homogeneous, rectus, nudus.

GABOON: Ogooue R., between the rocks of the rapids, Thollon 767 (P); 807 (P); 808 fl.fr., type (P).

A very distinct species, characterized by its oblanceolate, obtuse leaves and glomerate, pubescent flowers. The narrow leaves and the habitat suggest that this species is a typical rheophyte, i.e. a plant restricted to riverbeds with swiftly running water, and adapted to this habitat by the development of narrow leaves and a strongly branched rootsystem.

***Eugenia librevillensis* Amsh. n.sp.**

Arbor 7–9 m alta. Ramuli novelli fere glabri; internodiis apice paullulum dilatatis. Folia elliptica, basi acuta, apice abrupte acuminata, herbacea, glabra, 5–10 cm longa, 3–4(– $4\frac{1}{2}$) cm lata, costa supra impressa, subtus prominente, nervis lateralibus utrinque 9–10, tenuibus, patentibus, in nervum marginalem 2–3 mm a margine distantem conjunctis. Petiolus gracilis, \pm 4 mm longus. Inflorescentia

breviter racemosa, dense florifera, rachide dense bracteata, circ. 5 mm longa, bracteis tomentosis, \pm 1 mm longis. Pedicelli circ. 5 mm longi, griseo-tomentosi. Flores albi, hermaphroditi adhuc

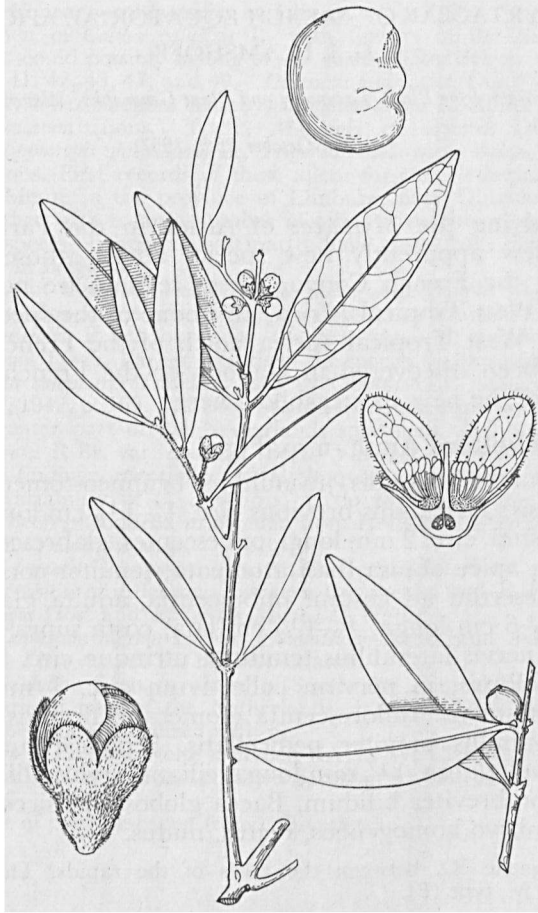


Fig. 1. *Eugenia Tholloni* Amsh. n.sp. Embryo, flowerbud and longitudinal section of the flower \times 4.

ignoti, ♂ cum vix ullo stylo. Ovarium basi tomentosum, in flore ♂ excavatum. Sepala rotundata, glandulosa, glabra. Petala circ. 4 mm longa. Bacca ignota.

GABOON: near Libreville, Klaine 3509, type (P).

By its shortly racemose flowers, abruptly acuminate leaves, distinct pedicels and partly pubescent ovary this species seems to be sufficiently distinct. Its nearest ally is perhaps *E. Gilgii* Engl et v. Brehm., from the Cameroons, with obtuse or acutish leaves and quite glabrous ovary. The species may also be compared with *E. Kalbreyeri* Engl. et v. Brehm., which however has a more or less yellow indumentum

and the lateral nerves of the leaves more distinctly ascending and more strongly curved. Two other specimens collected by Klaine near Libreville, nrs. 1691 and 1692, may also belong to *E. librevillensis* Amsh., but have a scarcely developed rachis.

***Eugenia diminutiflora* Amshoff n.sp. Fig. 2.**

Frutex glaber valde ramosus, ramulis dense foliatis, novellis breviter pubescentibus, internodiis brevibus circ. 1 cm longis. Folia breviter petiolata petiolo circ. 1 mm longo. Lamina elliptica, apice acuta vel inconspicue acuminata, basi acuta, glabra, tenuiter coriacea, $1\frac{1}{2}$ –3 cm longa, 7–15 mm lata, costa supra impressa, subtus prominente, nervis

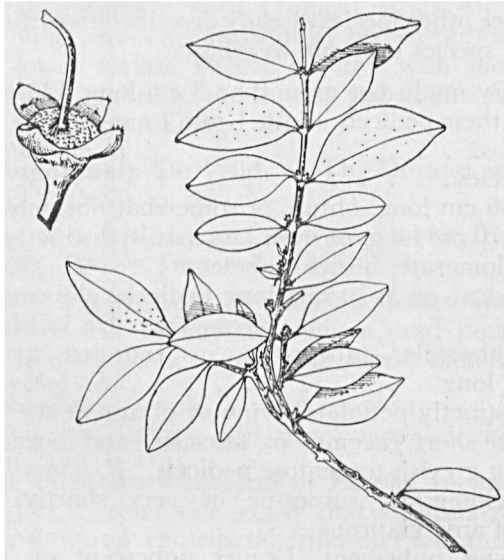


Fig. 2. *Eugenia diminutiflora* Amsh. n.sp. Deflorated flower $\times 12$.

lateralibus utrinque circ. 5, obsolete. Flores solitarii vel bini, glabri, pro genere minimi. Pedicelli circ. 1 mm longi, glabri. Ovarium vix 1 mm in diametro; sepalis minimis. Stylus filiformis; stigma acutum. Bacca ignota.

FRENCH CONGO: without precise locality, Thollon s.n., type (P).

A very distinct species, well characterized by its densely foliate twigs, small leaves and minute flowers. *Eugenia rupestris* Engl. et v. Brehm., according to later authors merely a small-leaved, stunted form of *E. leonensis* Engl. et v. Brehm., has larger flowers and longer pedicels, the flowerbuds being described as $1\frac{1}{2}$ –2 mm in diameter and the pedicels as 3–4 mm long.

***Eugenia gabonensis* Amsh. n.sp.**

Frutex vel arbor. Folia subsessilia, magna, 18–20 cm longa, circ. 6 cm lata, obovato-oblonga, basi subcordata vel rotundata, apice

obtuse acuminata, glabra, costa crassa, nervis lateralibus utrinque circ. 12–15. Petiolus brevissimus, incrassatus. Flores ignoti. Bacca subsessilis, globosa, sepalis minimis coronata. Embryo rectus, homogeneus, sed fissura brevi instructus.

GABOON: near Libreville, Klaine 2827 fr. (K., P.), 2737 fr. (P); without further locality, Jolly 66 (P).

This species has sometimes been confused with *E. Klaineana* (Pierre) Engl., a still imperfectly known, but at any rate quite distinct species with distinctly petiolate leaves that are acute at their base. Both species agree in having an embryo with a short split at one side, which is an unusual character.

So far, seven species have been found in Gaboon and the French Congo, the three other species already described in earlier publications. A key to these species may run as follows:

- 1 a Leaves very small, not more than 3 cm long. Flowers minute, glabrous, their pedicels about 1 mm long *E. diminutiflora* Amsh. 2
- b Other species 2
- 2 a Leaves 3–6 cm long, obtuse or somewhat obtusely acuminate 3
- b Leaves 5–10 cm long, or even larger still, distinctly acuminate 4
- 3 a Flowers glomerate, brown-pubescent . . . *E. Tholloni* Amsh.
- b Flowers borne on 3–10 mm long pedicels, glabrous *E. congolensis* De Wild. et Durand
- 4 a Leaves subsessile, subcordate or rounded at the base, 18–20 cm long *E. gabonensis* Amsh.
- b Leaves distinctly petiolate, acute or obtuse at the base . . . 5
- 5 a Flowers in short racemes or fascicles, and borne by up to 5 mm long greyish-tomentose pedicels *E. librevillensis* Amsh.
- b Flowers glomerate, subsessile or very shortly pedicelled; pedicels, if any, glabrous 6
- 6 a Young twigs pubescent. Leaves pubescent on the midrib beneath, at least when young. French and Belgian Congo *E. Demeusei* De Wild.
- b Twigs scaly, glabrous even when young. Leaves quite glabrous. Gaboon. *E. Klaineana* (Pierre) Engl.

Eugenia Klaineana (Pierre) Engl., Pflanzenwelt Afrikas III.2 (1921) p. 735; — *Chloromyrtus Klaineana* Pierre in Bull. Soc. Linnéenne Paris n.s. I (1898) p. 71; — *Eugenia Soyauxii* Engler in Notizblatt II (1899) p. 291 p.p.; A. Chevalier, Bois du Gaboon (1911) p. 211.

GABOON: Environs de Libreville, Klaine 128 and 1224, type of *Chloromyrtus Klaineana* Pierre in Bull. Soc. Linnéenne Paris n.s. I (1898), p. 71; Minda region, near Sibanga farm, Soyaux 109, 162, named *E. Soyauxii* Engler l.c. (P).

Chloromyrtus Klaineana Pierre was reduced by Niedenzu in E. P. Nachtr. II zu III 7 (1900) p. 49 to *E. Soyauxii* Engler; the combination *Eugenia Klaineana* however was apparently used for the first time in 1917 by Engler in Engler, Bot. Jahrb. LIV (1917) p. 339 and in Engler, Pflanzenwelt Afrikas III.2 (1921) p. 735; Engler however omitted to cite either Pierre's name or his original description.

Englers description of *E. Soyauxii* Engl. is partly based on Soyaux 109 and 162a, which indeed belong to *E. Klaineana* (Pierre) Engl., and partly on Kalbreyer 157, afterwards made by Engler and v. Brehmer in Engler, Bot. Jahrb. ILV (1917) p. 291 the type of a distinct species, *E. Kalbreyeri* Engl. et v. Brehmer.

Eugenia Demeusei De Wild. in Ann. Mus. Congo Serie V.2 (1908) p. 325; Durand, Syll. Fl. Congo (1908) p. 202; — *Eugenia landolphoides* A. Chevalier, Etudes Fl. Afrique Centr. française I (1912) p. 127, nomen nudum; Engler, Die Vegetation Afrikas Bd. III.2 (1921), p. 734 in key.

This species can perhaps best be compared with *E. calophylloides*, the most common species of West Tropical Africa. In *E. calophylloides* however, the young leaves are beautifully brown-pubescent, the adult leaves on the lower surface evenly covered with short decolorated hairs but otherwise glabrous, the flowers pubescent. *Eugenia Demeusei* is known from the Belgian Congo also.

Eugenia congolensis De Wild. et Th. Durand in Th. Durand, Mat. Fl. Congo V (1899) p. 5.

FRENCH CONGO: North of Stanley Pool, De Wevre 719 (BR), type of *E. congolensis* De Wild. et Durand.; Gaboon, Ogooue R., Thollon 771.

This species is known from the Belgian Congo and from Angola too; it is however still imperfectly known, and possibly not easily distinguishable from the Rhodesian *E. chirindensis* Baker.

Eugenia liberiana Amsh. nomen novum; — *Eugenia calycina* Bentham, Fl. Nigrít. (1849) p. 358, non *Eugenia calycina* Camb. 1829.

A worldwide satisfactory revision of *Eugenia* L. has not yet been accomplished, but it seems safe to say that an apparently undivided embryo, a few-flowered centripetal inflorescence and a calyx limb not produced above the ovary are essential characters of the genus. The American species of the genus *Eugenia* L., moreover, have the following characters in common (cf. Merrill and Perry in Journ. Arn. Arb. 19 (1938) p. 99–100).

Embryo apparently undivided, pseudomonocotyledonous; seed coat smooth and free from the pericarp; inflorescence centripetal with the pedicels 1-flowered; flowers hermaphrodite; petals free; stigma punctiform; calyx limb not produced above the ovary. If we characterize the genus *Eugenia* L. in this manner, the American genus *Ananomis* Griseb. (*E. fragrans* (Sw.) Willd. and allies) with few-flowered, centrifugal inflorescence and free cotyledons, must be accepted as distinct.

The African members of the genus *Eugenia* L. agree with the American species in having an apparently undivided embryo; this embryo however is naked, with the seedcoat probably adhering to the pericarp, as in *Syzygium* Gaertn. It is however, not certain that all American species of *Eugenia* L. have a free testa. The inflorescence of the African species is quite typical, though the pedicels may be

3-flowered (e.g. in *E. albanensis* Sond., in *E. Woodii* Dümmer, and in some specimens of *E. malangensis* (Hoffm.) Engl.).

As peculiarities of the African species can be noted that the stigma is often capitate or (*E. coronata*) orbicular or (*E. Aschersoniana* Hoffm. and *E. mossambicensis* Engl.) bifid, not always punctiform. The flowers are as a rule polygamous or (in *E. Tisserantii* Aubréville et Pellegrin according to the collector) dioecious. If the flowers are polygamous, there may be several short-styled male flowers and one or two long-styled hermaphrodite flowers in one fascicle. In *E. calophylloides* DC, a quite common West African species, the flowers are apparently always shortstyled; therefore these flowers are apparently at least partly fertile. For *E. albanensis* Sond. it is stated that the style is in the beginning very short, but lengthens afterwards; these flowers therefore are apparently protandric. Observations in the field are needed to throw light on these questions, and on the mode of pollinisation.

In Africa, there is no reason at all to unite *Syzygium* Gaertn. with *Eugenia* L., all African species of the genus *Syzygium* can be easily distinguished by their free cotyledons and \pm manyflowered, centrifugal inflorescence and cohaerent petals. The genus *Jambosa* DC. appears to be restricted to Asia, with no representatives either in Africa or in America; although it has free petals and a distinct plumule, it is usually united with *Syzygium* Gaertn. (Miss Perry).

Most African species of *Eugenia* are shrubs or small trees, but especially interesting, as already indicated by Engler, *Pflanzenwelt Afrikas* IX Bd. 3.2 (1922) p. 731, are the geophytic species, which develop annual herbaceous shoots from woody subterranean rootstocks. To this group belongs a.o. *E. malangensis* (Hoffm.) Engl. (including, in my opinion, *E. Laurentii* Engl. and *E. angolensis* Engl.) from the Belgian Congo, Angola, Rhodesia, Nyassaland and Tanganyika, but not yet found in French territory.