

**On the *Ximenia* (Olacacées) of Madagascar.
A new species of *Olax* (*)**

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I. – On the *Ximenia* of Madagascar.

During our study of the Olacaceae of Madagascar, we found two new species of *Ximenia*. The flowers of this pantropical genus are hermaphrodite, known to everyone. However, by analyzing the flowers of these two Malagasy species, we found that they are unisexual and have a rudimentary ovary in the only male flowers observed (Figures 1 and 2).

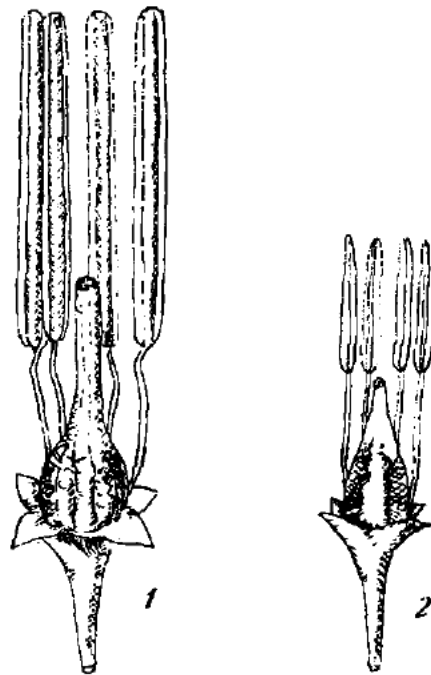


Fig. 1. *Ximenia madagascariensis* X 1.5. – Fig. 2. *Ximenia Perrieri* X 4.5

One may wonder whether the phylum of Malagasy species does not derive from more archaic African types with hermaphrodite flowers, admitting that there were ancient territorial connections between Africa and Madagascar. Moreover, most modern morphologists agree to consider the reduction of an organ (staminodes instead of stamens, pistillode instead of gynaeceum) as an evolutionary character. Under these conditions, it is conceivable that these *Ximenia* of Madagascar represent an advanced stage of differentiation already well established, acquired through random crosses and accepted by the environment, the separation of the Great Island from the African continent having acted by isolating these 2 species.

* Meeting of 25 March 1955

1. **Ximenia perrieri** Cavaco et Keraudren, sp. nov.

Planta fruticosa 2-4 m. alta, spinosa glabra, spinis rectis axillaribus; ramuli sæpius albido-grisei; spinæ 2,5 cm. longæ. Folia ovata, retusa, vel obovata emarginata, coriacea, integra, supra glabra, subtus puberula, petiolata, 2 cm. longa, 1.5 cm. lata; nervis secundariis, subtilibus, utrinque circiter 4; petioli circiter 7 mm. longi, pilosuli. Flores solitarii axillares; pedicelli 5-7 mm. longi glabri. Calyx minimus 4-fidus persistens, non ampliatus. Petala 4, intus pilosa, basi conniventia, 6 mm. longa. Stamina 8 quam petala breviora, æquilonga; filamentis glabris brevissimis antheris brevioribus; antheræ 3 mm. longæ. Pistillum conicum 2 mm. longum: ovarii rudimentum quadrilobum (flores dioici ?).

Plant a shrub 2-4 m. tall, spiny, glabrous, with straight axillary spines; branches often whitish-gray; spines 2.5 cm. long. Leaves ovate, retuse or obovate emarginate, coriaceous, entire, adaxially glabrous, abaxially puberulent, petiolate, 2 cm. long, 1.5 cm. wide; secondary nerves, thin, slender, about 4; petioles of about 7 mm. long, pilose. Flowers solitary and axillary; pedicels 5-7 mm. long, glabrous. Calyx at least 4-merous, persistent, not accrescent. Petals 4, pilose inside, base connivent, 6 mm. long. Stamens 8, of equal length and shorter than the petals; filament glabrous, much shorter than anthers; anthers 3 mm. long. Pistil conical 2 mm. long, rudimentary ovary 4-lobed (flowers dioecious?).

Bush or small shrub. On the dunes and limestones.

West: around Tuléar, *Humbert et Perrier de la Bâthie* 2567; amongst Anakao et Betioky, *Decary* 16.101 (type).

South West: Manampetsa, *Perrier de la Bâthie* 19.030.

The drawing of this plant will appear in the Flore de Madagascar et des Comores.

2. **Ximenia madagascariensis** Cavaco et Keraudren, sp. nov.

Arbor; caulis inermis, ramosus, glaber, albidus; ramuli teretes, inermis. Folia elliptica vel ovata, retusa, subcoriacea, integra, glabra, petiolata, 4-5 cm. longa, 1,5-2 cm. lata; nervis secundariis, subtilibus, utrinque circiter 4-5, petioli circiter 1 cm. longi, glabri. Flores fasciculati axillares; pedicelli 5-6 m. longi, glabri. Calyx 4-fidus, persistens, non ampliatus. Petala 4, intuspilosa extus glabra, 9 mm. longa, 1.5-2 mm. lata. Stamina 8, æquilonga; filamentis antheris brevioribus, 3 mm. longis; antheræ 5 mm. longæ, 0.5 mm. latæ. Pistillum rudimentum rugosum 3 mm. longum (fl. ♂). Fructus drupaceus, 6 mm. longus, 3 mm. latus.

Tree; the stem is unarmed, branched, glabrous, whitish; branches terete, unarmed. Leaves elliptical or ovate, retuse, subcoriaceous, entire glabrous, petiolate, 4-5 cm. long, 1.5-2 cm. broad; secondary veins, thin, slender, about 4-5, petioles about 1 cm. long, glabrous. Flowers in axillary fascicles; pedicel 5-6 m. long, glabrous. Calyx 4-merous, persistent, and not accrescent. Petals 4, interior pilose, exterior glabrous, 9 mm. long, 1.5-2 mm. wide. Stamens 8, of equal length; anther filaments shorter than 3 mm. long; anthers 5 mm. long, 0.5 mm. wide. Rudimentary pistil rugose, 3 mm. long (fl. ♂). Fruit drupaceus 6 mm. long, 3 mm. wide.

Tree. On the sands.

East: around Fort-Dauphin, between Pic St-Louis and the sea, *Humbert* 5962.

On the other hand, we found a *Ximenia* belonging to a phylum common to *Ximenia caffra* Sond. of Africa, whose flower has not sufficiently differentiated from that of the species described above. Despite the clear differences it presents compared to *Ximenia caffra* Sond. as regards the hairiness, the length of flower pedicels, etc., we attach it to this species as a variety, taking into account the polymorphism of the genus *Ximenia*.

Ximения caffra Sond. in Linnæa, XXIII (1850) 21 var. **longipedicellata** Cavaco et Keraudren, nov. - A var. *caffra* differt: arbuscula omnino glabra; floribus semper fasciculatis; pedicellis longioribus. [Differing from var. *caffra*: small tree, glabrous throughout; flowers always in fascicles; pedicels long].

Shrub of 1 to 3 m., Deciduous, with yellowish flowers. On the coastal dunes.
East: Antalaha, *Perrier de la Bâthie* 8610.

Ximения americana L., a pantropical species, has not yet been reported in Madagascar. It is distinguished from all Malagasy species by its flowers arranged in racemose or umbelliform cymes, the species of the Great Island still bearing flowers or solitary, or fasciculate and axillary.

II. – A new species of *Olox*.

The genus *Olox* is represented in Madagascar by 6 species. However, two other Malagasy species have been described, one of which, *Olox boiviniana* Baill., reduced to twigs without flowers, is perhaps not an *Olox*, and the other, *Olox thouarsiana* Baill. is actually a Meliaceae, *Turraea thouarsiana* (Baill.) Cavaco and Keraudren comb. nov. (= *Olox thouarsiana* Baill. in Adansonia, III (1862-1863) 121).

We will describe a new species collected by Prof. H. Humbert, in his 4th Mission to Madagascar.

Olox Humbertii Cavaco et Keraudren, sp. nov. (sect. *triandra* Engl.).

Frutex vel arbor parva ad 2 m. alta; ramuli teretes, brunei, glabri. Folia alterna, exstipulata, petiolata, integra, coriacea, glabra, glauca, elliptica, apice acuminata, basi subobtusata, 4-5.5 cm. longa, 1.5-2.5 cm. lata; nervus medius subtus prominens; nervi laterales utrinque 4-5, leviter arcuatis e margine circiter 2 mm. conjuncti, subtus inconspicuis; petioli 1-2 mm. longi, glabri, crassi. Flores racemosi; inflorescentia 1 cm. longa pedicelli crassi, puberuli, 2 mm. longi. Calyx: disciformis 1 mm. longus. Petala 3 subspathulata, 5-7 mm. longa, 1.5 mm. lata. Stamina 3, æquilonga, filamenta brevissima petalis inter se coalitis adnata; antheræ 1.5 mm. longæ; staminodia 6, bifida, petalis breviora. Pistillum conicum 2 mm. longum, 3-sulcatum, ovarium 3-loculare, ovulis solitariis, stylo 2 mm. longo, stigmatate subcapitato. Fructus drupaceus, 1.5 cm. longus, 1.5 cm. latus.

Shrub or small tree up to 2 m. high; branches terete, brown, glabrous. Leaves alternate, estipulate, petiolate, entire, leathery, glabrous, glaucous, elliptic, apex acuminate, base subobtusate, 4-5.5 cm. long, 1.5-2.5 cm. wide; the central vein underneath prominent; lateral veins 4-5 on both sides, slightly curved and conjoined about 2 mm from the margin, inconspicuous below; petiole 1-2 mm. long, glabrous, thick. Flowers in racemes; Inflorescences 1 cm. long, pedicel, thick, puberulent, 2 mm. long. Calyx: disciform, 1 mm. long. Petals 3, subspathulate 5-7 mm. long 1.5 mm. wide. Stamens 3, of equal length, filaments very short, adnate to the petals, becoming confluent with each other; anthers 1.5 mm. long; staminodia 6, bifid, shorter than petals. Pistil conical 2 mm. long, 3-sulcate, ovary 3-locular, ovules solitary, style 2 mm. long, stigma subcapitate. Fruit drupaceus 1.5 mm. long and 1.5 cm. wide.

Center: Andohahela massif, upper Sakamalio valley, alt. 1,100 m., Rain forest, banks of the river, rocky banks (gneiss), Humbert 13.544 (type).

East (?): Small forest of Ménaloha, at the edge of the road of Nichelville, *Cours* 1985.

Tree or shrub of 2 m.

Our new species is close to *Olax obtusifolia* De Wild. of Haut-Katanga and Northern Rhodesia. It differs from it by its purplish non-brown bark, its non-papery leaf with less marked secondary veins, of a different green, and finally by its non-lageniform ovary.

BIBLIOGRAPHIC INDEX.

1. BRENAN et GREENWAY, Check-Lists, Tanganyika. 1949, 2, p. 387.
2. BURTT DAVY, Man. Flow. Pl. Transv. South Afr., 1932, 2, p. 451.
3. DE CANDOLLE, Prodr., 1824, 1, p. 531.
4. ENGLER, Pflanzenf. 1. Aufl., 1894, 3, p. 231 et Suppl.
5. EXELL et MEXDONÇA, Conspectus Floræ Angolensis, 1951, 1, p. 331.
6. HARVEY et SONDER, Fl. Capens., 1860, 1, p. 23·i.
7. HUTCHINSON et DALZIEL, Fl. West Trop. Afr., 1928, 1, p. 457.
8. LOUIS et LÉONARD, Fl. Congo Belge, 1948, 1, p. 241.1.
9. OLIVER, Fl. Trop. Afr., 1868, 1, p. 345.
10. SLEUMER, Pflanzenf., 1935, éd. 2, 16 b, p. 5.