Maesobotrya Liberica Jongkind (Phyllanthaceae), a New Forest Species from Liberia

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Abstract

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A new species of *Maesobotrya* Benth. *(Phyllanthaceae)* from the evergreen forest of Liberia is described. It is the second *Maesobotrya* Benth. species in western Africa (Upper Guinea). It resembles *Maesobotrya pauciflora* Pax and *Maesobotrya oligantha* O. Lachenaud & Breteler from west-central Africa (Lower Guinea) by its male and its female inflorescences that are both small and axillary. Illustrations are provided along with a distribution map. A preliminary assessment of its risk of extinction following the IUCN Red List Categories and Criteria results in a status of "Endangered".

Keywords

PHYLLANTHACEAE – *Maesobotrya* – Liberia - Evergreen forest – Taxonomy – IUCN Red List

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Introduction

Maesobotrya Benth. is an African genus in the *Phyllanthaceae* (formerly *Euphorbiaceae*) with about 20 species. The genus can be recognized by the bipulvinate petiole of clearly variable lenght, the leaf blade margin with tiny teeth each bearing a tuft of straight hairs and the 5-merous male or female flowers without petals in separate inflorescences. Most of the species are restricted to the Guineo-Congolian forests (Léonard, 1994; Breteler, 2012). Up till now the only *Maesobotrya* species recognised from the Upper Guinean subcentre of endemism (sensu White, 1979) was *M. barteri* (Baill.) Hutch. This species is known for the edible, red fruits growing on its stem (Keay, 1958), it is often called "bush-cherry". Characteristic woody bumps show the places where the fruits grow time after time (Fig. 1).

Recently we have found in south-east Liberia *Maesobotrya* shrubs up to 4 m high with all the flowers and fruits in small inflorescences (< 2 cm long) near the end of the branches between the leaves. The stems of these shrubs were without any trace of present or past cauliflory. The only two *Maesobotrya* species that share these characters, *M. pauciflora* Pax and *M. oligantha* O. Lachenaud & Breteler, are found in west-central Africa (Lower Guinean subcentre of endemism). Between the population in Liberia and the two central African species there is a gap of more than 1,900 km (Fig. 2). The Liberian plants resemble *M. oligantha* and *M. pauciflora* but differ enough from both to describe them as a new species, *M. liberica* Jongkind. *Maesobotrya liberica*, *M. oligantha* and *M. pauciflora* differ in indumentum and leafshape and grow at different altitude (Table 1).

The area in south-east Liberia where the new species is found is known to be home to several local endemic species, like *Gilbertiodendron obliquum* (Stapf) J. Léonard (de la Estrella & Devesa, 2014), *Heckeldora jongkindii* J.J. de Wilde (de Wilde, 2007), *Jollydora armandui* Jongkind (Jongkind, 2012) and several others. At the moment an important part of the forest in this area is making place for oil palm plantations.

Fig. 1. – *Maesobotrya barteri* (Baill.) Hutch. from Guinea: stem with immature green fruits showing the woody bumps were the fruits grow from every fruiting season.
[Photo: C. Jongkind]

Systematics

Maesobotrya liberica Jongkind, **spec. nova** (Fig. 3-4).

Typus: Liberia: c. 50 km east of Greenville, 5°04'14"N 8°30'05"W, 60 m, 10.III.2014, fr., *Jongkind et al. 12333A* (holo-: BR!; iso-: G!, WAG!).

Maesobotrya liberica Jongkind resembles M. pauciflora Pax and M. oligantha O. Lachenaud & Breteler with similar short, axillary, inflorescences, but differs by its indumentum and leaf shape.

Shrub up to 4 m high with branches up to 4 cm in diam. *Bark* strongly fissured. *Stipules* paired, lanceolate, up to 8 × 1.5 mm, with appressed hairs along the edge and sometimes on

Fig. 2. – Distribution map with to the right *Maesobotrya pauciflora* Pax (surrounded by a black line) overlapping *M. oligantha* O. Lachenaud & Breteler (squares), and to the left *M. liberica* Jongkind (circles).

Fig. 3. – *Maesobotrya liberica* Jongkind. **A.** Leaf from below and male inflorescences; **B.** Stem c. 4 cm in diam. [*Jongkind et al. 12943*] [Photo: C. Jongkind]

the outside along a line in between the edges, often persistent at younger nodes. *Leaves* alternate; petiole bipulvinate, 0.3-4.5 cm long, with short, more or less appressed, pale hairs; blade obovate to elliptic, 5.5-23.5 × 2.2-10 cm, acute at base, acuminate at apex, slightly bullate, the margin with small teeth each bearing a tuft of straight hairs, blade in bud completely covered with pale hairs, in the adult stage almost glabrous except for the midrib and the main lateral nerves below; 5-7 pairs of main lateral nerves. Male and female *inflorescences* axillary, usually solitary, racemose, rachis < 2 cm long, more or less appressed and pale hairy, bracts and bracteoles 1 mm or smaller, male with 7-18 flowers, female with 10-16 flowers. *Flowers* green, yellowish or reddish, with a joint in the pedicel close to the inflorescence rachis, sepals imbricate and glabrous, petals absent. *Male flowers* usually single along the rachis; pedicel 1.5-3 mm long, glabrous; sepals ca 1 mm long, elliptic, glabrous; 5 glabrous stamens, opposite the sepals; filaments free, 1.5-2 mm long; anthers c. 0.2 mm long, erect, dorsifixed, introrse, thecae parallel, longitudinally dehiscent; disk with lobed edge, short hairy, with in the centre a rudimental ovary. *Female flowers* single along the rachis; pedicel 0.5-2 mm long, glabrous or with a few hairs; sepals c. 1 mm in diameter, elliptic, glabrous; disk lobed, hairy; ovary with scattered, appressed hairs, already early visible between sepals; styles very short; stigmas (2?-)3, bifid, recurved. *Fruit* ovoid, acute at apex, c. 12 mm high, fleshy, with a few hairs or glabrous, red, one seeded.

Table 1. – Differences between *Maesobotrya barteri* (Baill.) Hutch., *M. liberica* Jongkind, *M. pauciflora* Pax and *M. oligantha* O. Lachenaud & Breteler.

	M. barteri	***M. liberica***	***M. pauciflora***	***M. oligantha***
Height [m]	up to 10(-20?) (but frequently smaller)	up to 4	up to 2	up to 3.5
Petiole	scarcely to distinctly pilose	short ca appressed hairy	glabrous to minutely appressed-hairy	long hirsute hairy
Leaf blade, base	acute to subcordate	acute	acute to (long) attenuate	rounded to subcordate
Leaf blade, margin	clearly minutely dentate	clearly minutely dentate	almost entire	clearly minutely dentate
Position of inflorescences	on trunk and older branches, especially the male inflorescences sometimes continuing up to the leafy branches	on the leafy branches only	on the leafy branches only	on the leafy branches only
Male flower, peduncle [mm]	1-1.5	1.5-3	1.5-3	2-3
Male flower, disk	hairy	hairy	glabrous	hairy
Female flower, peduncle [mm]	c. 1	0.5-2	0.5-1	< 1
Ovary	glabrous (in Upper Guinea)	scattered hairs	glabrous	densely hairy
Fruit shape	ellipsoid, rounded at apex	ovoid, acute at apex	ovoid, acute at apex	ovoid, acute at apex
Distribution	Guinea to Central Africa	Liberia	Cameroon to Congo-Brazzaville	Equatorial Guinea and Gabon
Altitude [m]	0-500	50-165	20-960	520-850

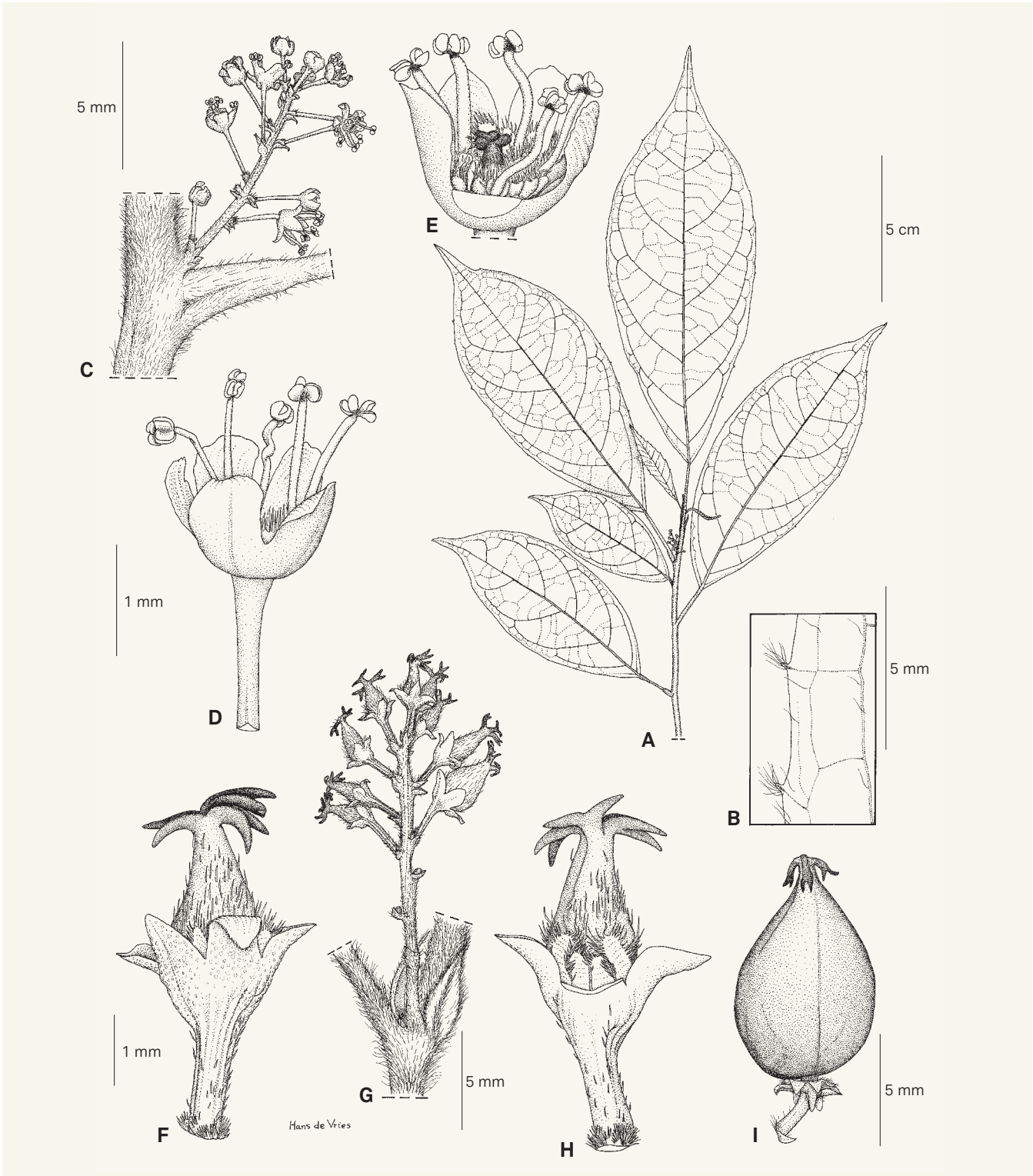

Fig. 4. – *Maesobotrya liberica* Jongkind. **A.** Habit with male inflorescence; **B.** Leaf margin from below; **C.** Male inflorescence; **D.** Male flower; **E.** Same as D but with sepal removed, showing the hairy lobes of the disk; **F.** Female flower; **G.** Female inflorescence and stipules; **H.** Same as G but with sepal removed, showing hairy disk; **I.** Fruit.
[**A-E:** *Jongkind 12333B*, BR; **F-H:** *de Gier & Goll 48*, WAG; **I:** *Jongkind 12333A*, BR] [Drawing: H. de Vries]

Distribution and ecology – Only known from the undergrowth of evergreen lowland forest in Sino County in southeast Liberia.

Conservation status – *Maesobotrya liberica* is only known from five locations. The species is not known from protected areas and forest close to the places where it was collected is changed at the moment into oil palm plantations. With an extent of occurrence (EOO) of 318 km^2 and an area of occupancy (AOO) is 20 km^2 (based on a cell width of 2 km), *M. liberica* is assigned a preliminary conservation status of "Endangered" [EN B1ab(i, ii, iii)+2ab(i, ii, iii)] following IUCN Red List Categories and Criteria (IUCN, 2012).

Notes. – The genus *Maesobotrya* is said to be dioecious but *Jongkind et al. 12333A, 12333B* from *M. liberica* show, on separate branchlets, male or female inflorescences. It is not clear if these branches are from the same shrub or from different shrubs growing close together.

On the top of part of the fruits only 2 styles are counted, maybe in these cases one style dropped after flowering but it is also possible that female flowers have sometimes only 2 styles.

The fruits of the cauliflorous species in this genus are known to be dehiscent at maturity. In our new species, and maybe also in *M. oligantha*, the fruits seem to stay closed.

Paratypi. – **Liberia:** African Fruit Company plantation, 28.VII.1977, st. fl., *de Gier & Goll 48* (MO, WAG); 20 miles N of Sinoe, 16.I.1969, st. fl., *JWA Jansen 1102* (BR, K, MO, P, WAG); c. 50 km E of Greenville, 5°04'14"N 8°30'05"W, 60 m, 10.III.2014, pist. fl., *Jongkind et al. 12333B* (BR, G, WAG); c. 50 km E of Greenville, 5°04'40"N 8°34'27"W, 163 m, 11.III.2014, pist. fl., fr., *Jongkind et al. 12385* (BR, G, P, WAG); E of Wiado village, 5°07'58"N 8°54'27"W, 55 m, 3.II.2016, st. fl., *Jongkind & Sambolah 12943* (BR, WAG).

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