Tragia liberica Jongkind (Euphorbiaceae), a New Forest Species from Liberia

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Abstract

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A new forest species from Liberia, *Tragia liberica* Jongkind *(Euphorbiaceae),* is described and illustrated here. It is a small climber resembling *Tragia preussii* Pax from Nigeria and Cameroon but differing by its leaf blade base and by the shape of the calyx of the female flower. It is the only *Tragia* L. species known from the wet evergreen forest in Liberia.

Keywords

EUPHORBIACEAE – *Tragia* – Liberia – Tropical forest – Taxonomy – Conservation – New species

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Introduction

The pantropical genus *Tragia* L. *(Euphorbiaceae)* counts ca. 168 species (Govaerts et al., 2000: 1540). Most species are found in America and Africa, only 3 species are known from Asia (Radcliffe-Smith & Esser, 2001: 255). The number of accepted species for continental Africa varies from 54 (Govaerts et al., 2000: 1540) to 63 (Lebrun & Stork, 2006: 234). Comparatively few of these African species are found in forest vegetation.

In 2013 we found in the undergrowth of the evergreen forest near Greenville in Liberia a small climber with small greenish flowers. In the key of the "Flora of West Tropical Africa" (Keay, 1958) it ends up with *T. preussii* Pax because of the characters of the female flower. Both have female flowers with 6 deeply lobed sepals without a foliaceous apex. The new specimen differs from *T. preussii* by leaves with a very narrowly rounded-cuneate, not (narrowly) cordate, blade base and it also has only two pairs of lobes on the female sepals instead of 3-4 (Pax, 1894: 102). There is no African *Tragia* species known that combines these characters. In the K and WAG herbaria duplicates of a second specimen of the same species was found, collected by J. T. Baldwin in Liberia at a location almost 300 km to the north-west of the new collection. On the sheet in K was a note from Keay "better material required", this duplicate is indeed inadequate and Keay did clearly not dare to identify it any further than *Tragia* sp. He did not mention this Baldwin specimen in the "Flora of West tropical Africa". Regrettably it took more than 50 years before this "better material" was collected. Both collections of this species, which I name here *T. liberica*, are found in the wet evergreen forest area, an area where no other *Tragia* species is found in Liberia.

Tragia preussii occurs in Nigeria and Cameroon. It is said to be found in other countries as well (Essou, 2006: 581; Sosef, 2006: 174) but the vouchers that I have seen that should prove this, were, or not that species, or too incomplete to be identified with certainty. The only specimen from Gabon that was identified as (cf.) *T. preussii*, *Wieringa 617,* could be another new *Tragia* forest species, but because it lacks complete female flowers or fruits this decision has to wait for better material. The base of the leaf blade of *Wieringa 617* is almost equal to that of *T. liberica* but the only, incomplete, female flower is not found on the same inflorescence as the male flowers but next to it like in *T. volubilis* L. All inflorescences from this specimen have male flowers only.

Tragia liberica Jongkind, **spec. nova** (Fig. 1, 2).

Typus: Liberia. Sino County: east of Greenville-Zwedru road, 5°20.66'N 8°53.20'W, 117 m, 25.IX.2013, fl. fr., *Jongkind, de Wet & Sambolah 12145* (holo-: BR!).

Tragia liberica Jongkind differs from its most similar congener, T. preussii Pax, by its acute, not cordate, leaf blade base and by only two pairs of lobes on the female sepals instead of 3–4 pairs.

Twining, woody *climber*, less than 1 m high. Twigs pilose. *Leaves* alternate; blade 6-17 × 2-4.5 cm, obovate, papery, with 8-11 pairs of main lateral nerves, apex acuminate, base very narrowly rounded-cuneate, margin irregularly serrulate with tooth apex minutely glandular, upper surface only hairy on the midrib, lower surface hairy on smaller nerves as well; petiole 3-25 mm long, pilose; stipules 5-7 mm long, triangular, with a few scattered hairs. *Inflorescence* a leaf-opposed, lax, short hairy, raceme, up to 14 cm long, with the first flower (the only) female and many male flowers higher up, bracts at the base of the pedicel, 3 subtending proximal flowers, one subtending distal flowers. Male and female flowers green and yellow. Male flowers with pedicel ca 3 mm long; 1 or 3 bracts up to 1.5 mm long, lanceolate; 3 sepals ovate, 1 mm or less long, glabrous, valvate, closed in bud; petals 0; stamens 3, alternating with sepals; anthers ca 0.3 mm long; filaments very short. Female flowers with pedicel ca 2 mm long, pale hairy; middle bract ca 2 mm long, ovate, side bracts shorter, lanceolate; sepals 6, ca 2 mm long, pinnatisect, with 2 slender lobes at each side, ending in a lobe of comparable shape and size, with the rachis about as wide as the lobes, with only few hairs; ovary 3-locular, densely short setose; styles in a stout column, glabrous, free above. *Capsule* 3-coccous; 3 bivalved mericarps separating from the columella, mericarps enclosing the seeds; sepals and pedicel somewhat enlarged in fruit; seeds 3, ca 3 mm in diameter, subglobose.

Distribution and ecology. – Undergrowth of evergreen forest, below 150 m altitude. Only known from Liberia.

Conservation status. – *Tragia liberica* is an inconspicuous plant that can easily be overlooked. With the only two known locations ca 300 km apart it is likely that it still can be found in evergreen forest in between. The species has not been found yet in a protected area but could occur in Sapo National Park, the south-eastern collecting location is close to this protected forest area. Considering all the economic development planned and in progress in the forests of Liberia, "Vulnerable" [VU C2a(i)] would be the appropriate status until more is known. Calculating its "Extent of Occurrence" and "Area of Occupancy" (IUCN, 2012) does not make sense in this case without a special search for the species in forest in Liberia where it still may be expected.

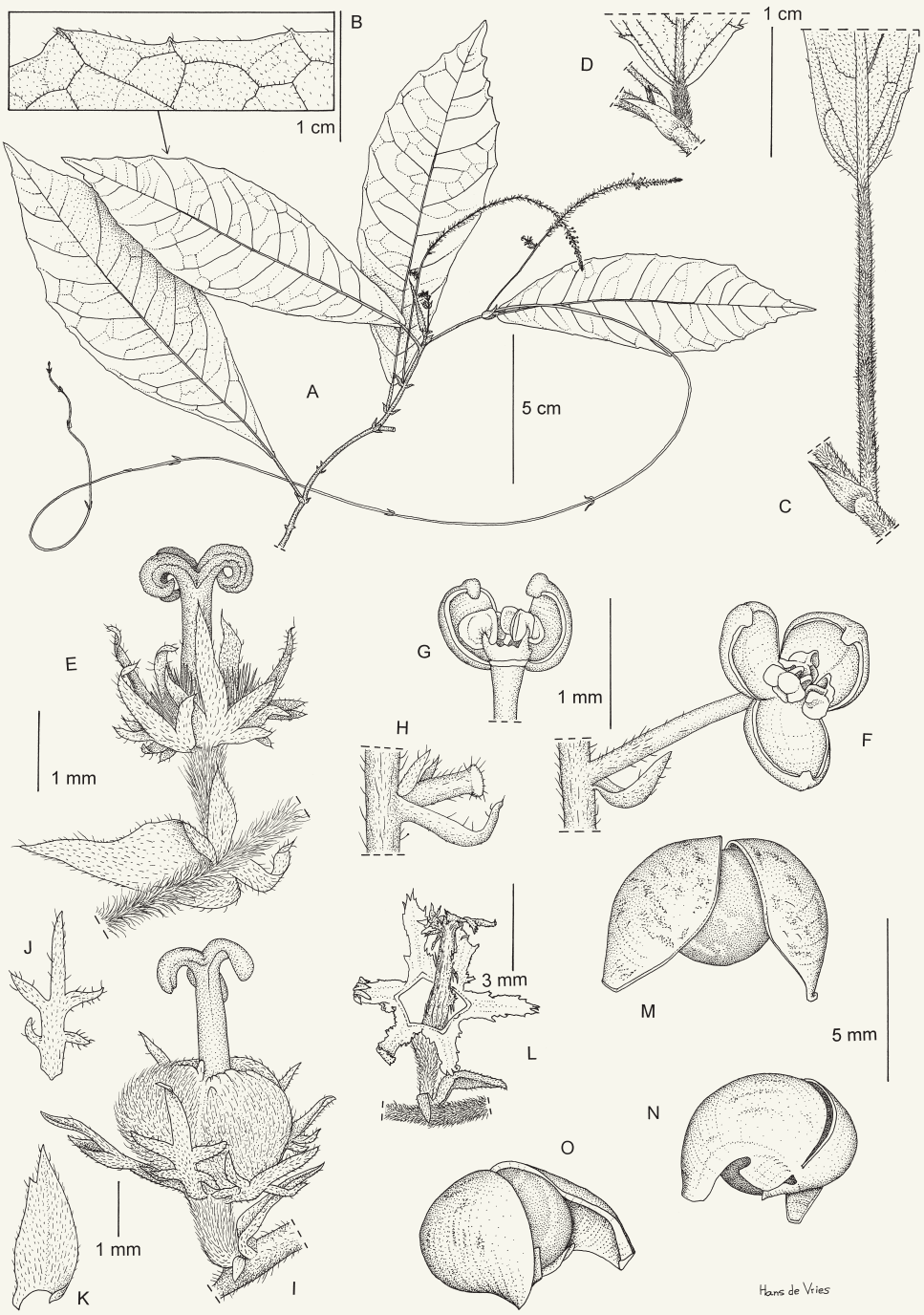

Fig. 1. – *Tragia liberica* Jongkind. **A.** Habit with inflorescences; **B.** Leaf margin from below; **C-D.** Leafbase and stipules; **E.** Female flower with bracts; **F.** Male flower with bract; **G.** Male flower in cross-section; **H.** Lower part of pedicel and bracts after male flower dropped; **I.** Developing fruit; **J.** Female sepal; **K.** Large bract from I; **L.** Columella and sepals after dehiscence of the fruit; **M-O.** Mericarp of split capsule with enclosed seed from three different angels.
[**A-C, E-H, L-O:** *Jongkind 12145*, BR; **D, I-K:** *Baldwin 10353*, WAG]
[Drawing: Hans de Vries]

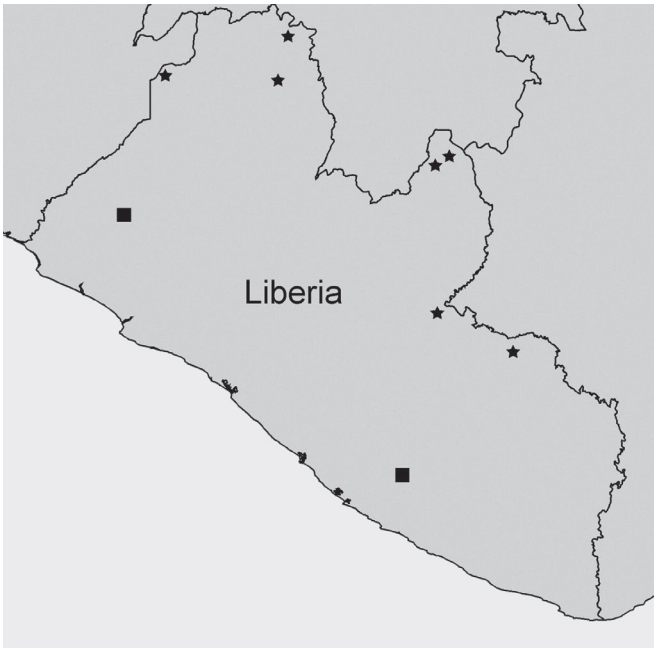

Fig. 2. – Distribution map of *Tragia liberica* Jongkind (squares) also showing all other *Tragia* L. specimens (stars) from Liberia from the BR, K, P and WAG herbaria.

Notes. – Most African *Tragia* species have irritating hairs in leaves, twigs and/or inflorescence. This character, that is usually very conspicuous, was not noted in the field for the two specimens of the new species. Stinging hairs are, according to Keay (1958: 411), absent in *T. preussii,* another species from wet evergreen forest. It is not clear if the stinging hairs are really absent or maybe too small to have an effect on the human skin.

All herbarium specimens of *Tragia* from Liberia are mapped here (Fig. 2), the new species is the only *Tragia* in Liberia that is found in the wet evergreen forest. The evergreen forest in Liberia is mainly confined to a belt of variable width from north-west to south-east starting close to the ocean and changing to drier forest, like semi-deciduous forest, more inland (a reliable vegetation map of Liberia does not exist.) *Tragia* plants are not very conspicuous and are probably more common than can be concluded from this distribution map but the pattern is obvious even with this small number of specimens. The other specimens from Liberia are not all identified to species level but are all of species with a conspicuous cordate to narrowly cordate-acute leaf blade base, such as *T. mildbraediana* Pax & K. Hoffm., *T. spathulata* Benth., and *T. tenuifolia* Benth. These three *Tragia* spp. are also known from the forest in Sierra Leone, Ivory Coast and Ghana and grow there in forest with a lower rainfall than where *T. liberica* is found.

Paratypus. – **Liberia. Boporo District:** Bangee, 16.XI.1947, *Baldwin 10353* (K, WAG).

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