

## A new endangered species of *Jollydora* (Connaraceae) represents the first record of the genus from Upper Guinea (tropical Africa)

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**Background and aims** – A small cauliflorous treelet found in the South of Sino County in Liberia was identified as *Jollydora* in the field. This genus was, however, not yet known outside central Africa. The collection indeed proved to be a *Jollydora* and to represent an undescribed species, the fourth in the genus.

**Key results** – The new forest species *Jollydora armandui* is described and illustrated here. It is the first *Jollydora* species known outside central Africa. It resembles *J. duparquetiana*, but the fruits of the new species are spindle-shaped and usually one-seeded and not pear-shaped and two-seeded. The new species is only known from the type locality in Liberia.

**Conservation Status** – Because it is likely that the new species only lives in a relatively small area between Greenville and Buchanan, and because the forest where it grows is not protected, it should be listed as endangered until more is known about it.

**Key words** – Connaraceae, *Jollydora*, Africa, Liberia.

### INTRODUCTION

In November 2010 several flowering and fruiting cauliflorous treelets were found in the forest in Liberia that did clearly belong to the Connaraceae family. With compound leaves and indehiscent fruits on the stem it could only be a species of *Jollydora*, but that genus was only known from the Lower Guinean subcentre of endemism in central Africa. For the most recent revision of the genus (Breteler & van Ziel 1989) all herbarium material from a large number of herbaria was studied and at that time no *Jollydora* specimens were seen westwards from south-east Nigeria. The plants found in Liberia proved to represent a new species. The three already known species of *Jollydora* have either a differently shaped fruit or abundant glandular hairs on flowers and leaves. With the new *Jollydora* Liberia now counts fifteen species in six genera in the Connaraceae.

Liberia contains one of the largest remaining forest blocks in West Africa and is known for its particularly low sampling intensity (Wieringa & Poorter 2004: fig. 6.6). The forest in the part of Liberia where the new species is found is the forest with the highest rainfall west of the Dahomey Gap and it is rarely visited by botanists yet. This combination makes it likely that still more novelties can be expected from there. During the expedition of one week in this forest the Liberian endemics *Pseudocalyx libericus* Breteler, *Alsodeiopsis villosa* Keay, *Tetraberlinia tubmaniana* J.Léonard, *Heckeldora jongkindii* J.J.de Wilde, *Chassalia elongata* Hutch. & Dalziel

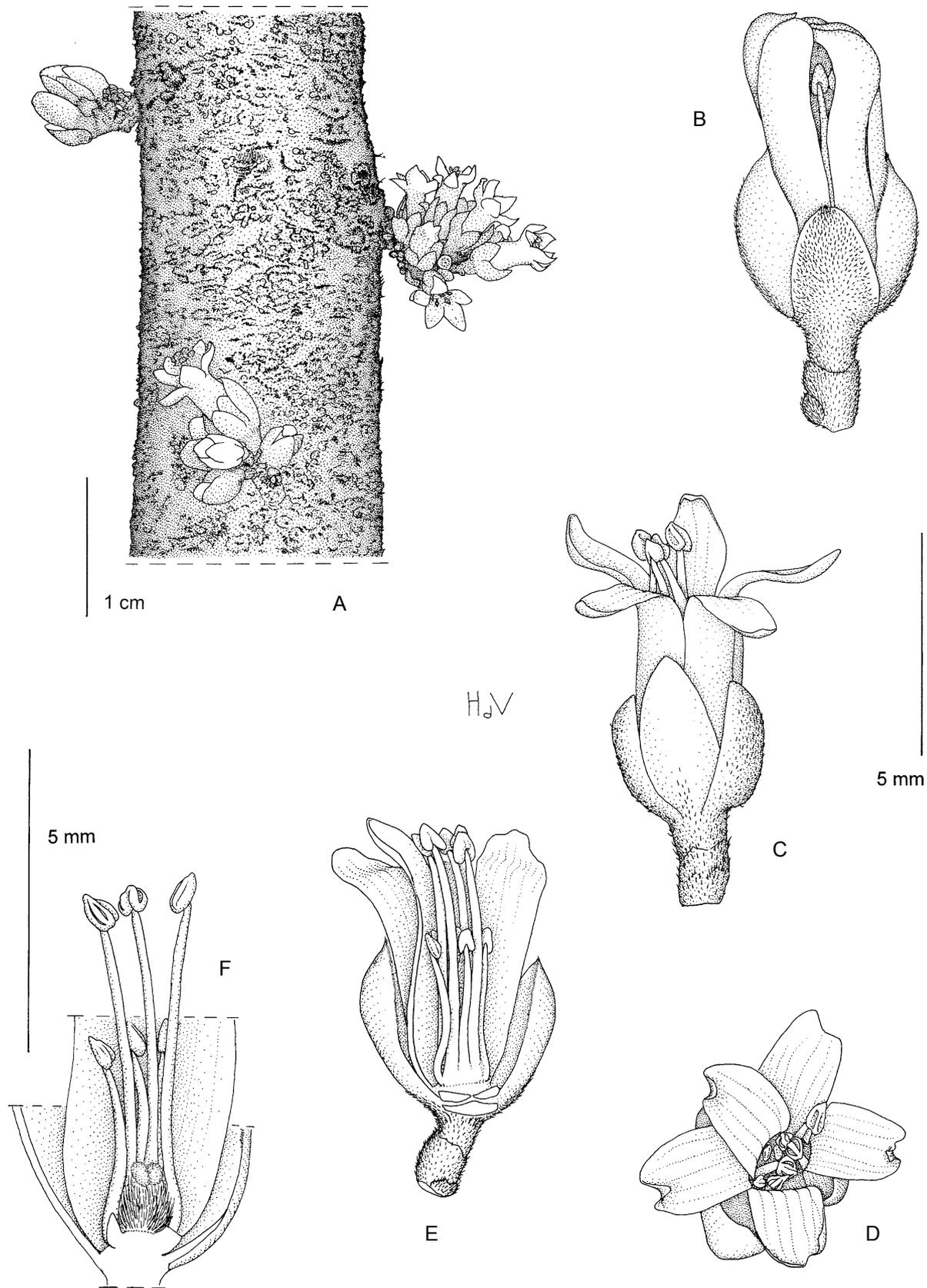
and *Cola liberica* Jongkind were found; some of these have only been described in the last decade (Jongkind 2004, de Wilde 2007). Other specimens, representing *Begonia*, *Cola*, *Dracaena*, *Psychotria* and *Sericanthe*, could only be identified to genus level yet and might prove to be new as well.

### TREATMENT OF THE NEW TAXON

*Jollydora armandui* Jongkind, **sp. nov.**

Species nova *Jollydora duparquetiana* (Baill.) Pierre maxime similis sed fructu longiore basi et apice angustato nec pedicellato plerumque monospermo differt. Type: Liberia, Sino county, south-west of Togba Ville, 5°28.4'N 9° 5.9'W, alt. 80 m, fl., fr., 29 Nov. 2010, *Jongkind et al.* 9914 (holo-: WAG; iso-: BR, G, K, MO).

Unbranched treelet 1.3 to 2 m high and c. 2 cm in diameter. Leaves compound with 5 to 11 alternate to opposite leaflets, very young ones completely covered with appressed, ordinary, brown hairs, mature ones with the petiole, rachis and petiolule still densely brown hairy but the leaf blade completely glabrous above and below still with a few patches of brown indumentum usually on and near the midrib; petiole thickened at the base, 11–22 cm long; rachis 9.5–22 cm long; leaflets 3–10 cm wide and 10–28 cm long, blade elliptic to long obovate, above darker green than below, with 10–28 pairs of main lateral nerves. Inflorescence a short raceme, up to 2 cm long, clustered on the stem. Flowers cream-



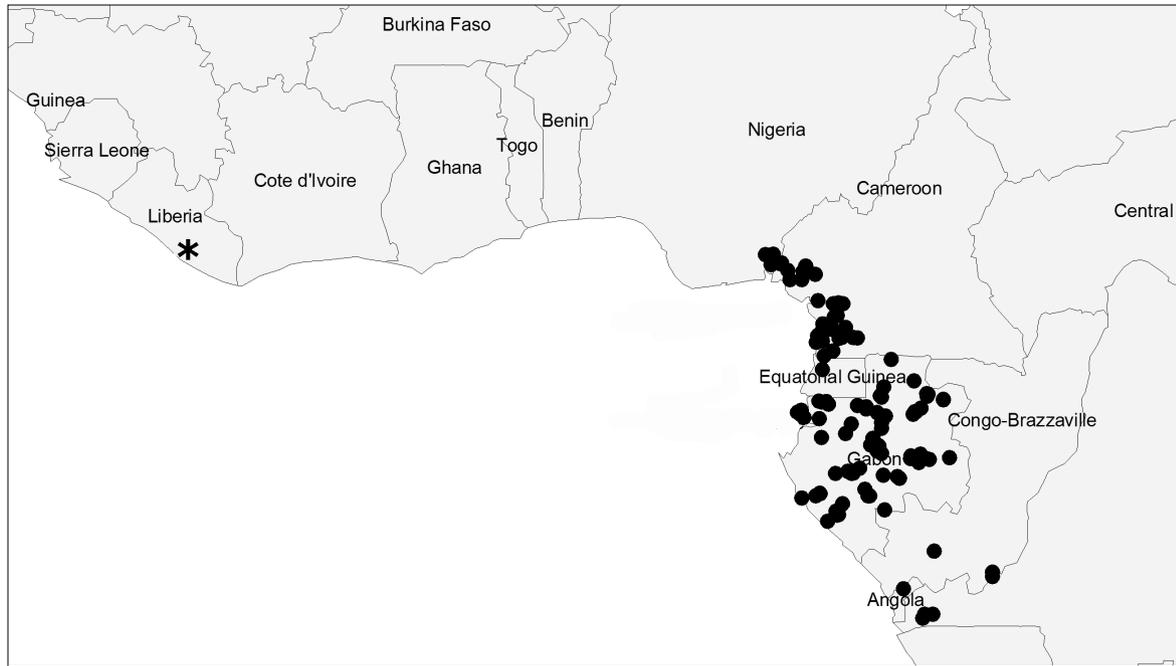
**Figure 1** – *Jollydora armandui*: A, stem with inflorescences; B, mature flower still closed; C, open flower; D, open flower from above; E flower in cross-section; F, flower detail showing carpel. From Jongkind et al. 9914. Drawn by H. de Vries.

**Revised key to the species of *Jollydora***  
(after Breteler & van Ziel 1989: 285)

1. Vegetative parts and sepals with eglandular hairs only.....2
- 1'. Leaflets with scattered glandular hairs along midrib both sides; sepals with glandular hairs, at least partly so.....3
2. Fruits obovoid-ellipsoid to almost globose, always shortly but distinctly stipitate and rounded at the top, usually with two seeds (from eastern Nigeria to Cabinda).....*J. duparquetiana*
- 2'. Fruits narrowly ellipsoid, tapering to both ends, usually with one seed (Sino county in Liberia)..  
.....*J. arandui*
3. Sepals with a mixture of glandular and eglandular hairs; fruits narrowly (sub)ellipsoid, tapering to both ends (Gabon).....*J. pierrei*
- 3'. Sepals predominantly with glandular hairs; fruits ellipsoid, rounded at base (south-east Nigeria and west Cameroun).....*J. glandulosa*



**Figure 2** – *Jollydora arandui*: A, young plant; B, young leaves; C, young fruit; D, fruits, seed with yellow fleshy seed-coat and cleaned and split seed showing the two cotyledons. Photos by the author.



**Figure 3** – Distribution of the genus *Jollydora*: *Jollydora armandui*: star; the three other *Jollydora* species combined: solid circles.

coloured, the petals slightly bended and folded in such way that the flower looks zygomorph from above. Pedicel articulate about halfway, at most 5 mm long. Sepals 5, free, imbricate, unequal in length, 3–5 mm long and 1.5 mm wide, with appressed eglandular hairs on the outside. Petals 5, almost equal in length, 8 mm long and 1.5 mm wide, glabrous. Stamens 10, in two whorls, united at the base, the long ones 5 mm long, the short ones 3 mm long; filaments glabrous; anthers < 1 mm. Only a single hairy carpel, with two embryos next to each other near the base, with one very short style on top. Fruit spindle-shaped, 45–50 mm long and 17–20 mm in diameter, red, covered with appressed, brownish hairs that can easily be removed from the mature fruit, in the immature fruit there are still 2 ovules, but when the fruit is mature there is often only one left. Seeds up to 32 × 16 mm, almost completely covered by a fleshy, yellow seedcoat, with two planoconvex cotyledons and without endosperm, radical apical. Figs 1 & 2.

**Habitat and distribution** – Known only from the type locality in high evergreen forest in Sino County in Liberia. Fig. 3.

**Note** – Most Connaraceae are heterostylous. It is likely that the sizes of stamens and style given in the description will, with more material, prove to represent only one of the heterostylous morphs of the new species.

**Conservation status** – The new species is distinctive, especially when flowering or fruiting but even when sterile, and it is hard to imagine that it would have been overlooked that long if it would occur in a much larger area. At present this species is known from a single population. Because it probably only lives in a relatively small area between Greenville and Buchanan and this forest is not protected, the species should be listed for the moment as endangered (IUCN 2001).

**Etymology** – The species is named after Armandu K. Daniels, from the Liberian Forestry Development Authority, who found the first flowers and mature fruits of this species.

#### ACKNOWLEDGEMENTS

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