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# Calyptranthera gautieri Klack. (Apocynaceae s.l., Secamoneae), a new species from Madagascar

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## ABSTRACT

KLACKENBERG, J. (1998). *Calyptranthera gautieri* Klack. (Apocynaceae s.l., Secamoneae), a new species from Madagascar. *Candollea* 53: 395-398. In English, English and French abstracts.

*Calyptranthera gautieri* Klack., a new species of *Apocynaceae* s.l., *Secamoneae*, from NW Madagascar, is described, illustrated and compared to the five other species of the genus.

## RÉSUMÉ

KLACKENBERG, J. (1998). *Calyptranthera gautieri* Klack. (Apocynaceae s.l., Secamoneae), une nouvelle espèce décrite de Madagascar. *Candollea* 53: 395-398. En anglais, résumés anglais et français.

*Calyptranthera gautieri* Klack., nouvelle espèce de la famille des *Apocynaceae* s.l., *Secamoneae*, de la région nord-ouest de Madagascar, est décrite, illustrée et comparée aux cinq autres espèces du genre.

**KEY-WORDS:** *APOCYNACEAE* – *Secamoneae* – *Calyptranthera* – Madagascar – Taxonomy.

In 1994 the Conservatoire et Jardin botaniques de la Ville de Genève launched a floristic inventory project in the Manongarivo mountains in northwestern Madagascar. During this work a specimen belonging to the genus *Calyptranthera* Klack. (*Secamoneae*) was found at ca. 500 m altitude in the border area between Central and Sambirano phytogeographical domains (for a description of phytogeographical domains in Madagascar, see HUMBERT, 1955). Most of the vegetation of the Manongarivo mountains is referred to the Central domain. Areas below 800 m altitude, however, are floristically more similar to what is seen in the Sambirano domain of northwestern Madagascar, a small phytogeographical domain of its own also including the island of Nosy Be. The specimens found represent the only *Calyptranthera* known from Sambirano and the western part of the island. This material has proved to represent an undescribed taxon of *Calyptranthera*, and is here described as a new species, *C. gautieri*. There is also one specimen from northernmost Madagascar just south of Antsiranana, *Phillipson* 1983 (MO), that might belong to this species or represent a closely related undescribed taxon. More material is needed, however, for a proper taxonomic evaluation.

The genus *Calyptranthera* was recognized recently (KLACKENBERG, 1996a: 27) based on only one collection with sparse flower material. This species had previously been placed in *Toxocarpus* Wight & Arn. One year later *Calyptranthera* was revised and expanded to include four new species (KLACKENBERG, 1997), all found in eastern Madagascar. The present new species is the first taxon from the western part of the island. *Calyptranthera* has pollinaria with

four pollinia each and is placed in the tribe *Secamoneae*, close to the genus *Pervillea* Baill. (KLACKENBERG, 1996b).

I have named this species after the collector, Laurent Gautier (G) who, during his inventory of Manongarivo, first found and later, when asked to obtain more material, also refound this species.

***Calyptranthera gautieri* Klack., spec. nova (Fig. 1).**

**Typus:** MADAGASCAR, Réserve Spéciale de Manongarivo, Besinkara, Andavakeva, 200 m en amont du gué du ch. du Bekolosy, 14°04'S, 48°17'E, 550 m alt., 1997, *Gautier, Messmer & D'Amico LG3197* (S!, holo; G, K, MO, P, TAN, TEF, iso).

*Species haec C. caudiclava similis lobis coronae spathulatis et connectivi lobis valde filiforme prolongatis, autem differt calyptra basium latorum connectivorum nulla et lobis corollae prope basin con lineis rectis submarginalibus piliferis destitutis.*

Suffrutescent twiner with milky latex, 8-12 m long, with younger branches densely covered by more or less straight to bent often retrorse rather stiff reddish hairs, glabrescent. Leaves opposite, somewhat coriaceous and shining above, paler below, usually revolute at the very margin; blade 20-24 × 3.5-4.5 cm, ovate to elliptic to somewhat obovate, cuneate and sometimes minutely cordate at the very base, acuminate, with sparse reddish bent hairs beneath particularly along the veins, glabrescent above or with a few remaining hairs especially along the midrib towards base, sometimes with colleters at the very base above; margin even; venation pinnate and looped, reticulate; midrib when dry distinctly impressed above and raised beneath; secondary veins divaricate to right-angled, slightly raised on both sides when dry; tertiary veins reticulate, ± even with the leaf surface; epidermis ± smooth on both sides; petiole distinct, 0.5-1 cm long, with dense reddish mostly appressed hairs.

Inflorescences extra-axillary, much shorter than the adjacent leaves; cyme appearing umbel-like but actually with flowers in pairs with reduced internodes on a short stalk, when older elongated with distinct scars of earlier flower pairs, usually with few flowers at one time, hairy; pedicels of different length, up to 2 cm long; bracts and bracteoles narrow, 1-3 mm long.

Flowers pentamerous, actinomorphic. Calyx lobes united only at the very base, ca. 3.2 × ca. 1.2 mm, much longer than the corolla tube, narrowly ovate-triangular, acute, with long reddish hairs outside, glabrous inside, with a small colleter at each sinus. Corolla elliptic in bud, contorted with the left lobe margin overlying, not or only slightly twisted, with the lobes fused at the base only into a short tube, greenish white in bud turning brownish dark red when mature; tube ca. 0.7 mm long, glabrous; lobes ca. 9.0-10.5 × ca. 4.0-5.5 mm, ovate to elliptic, acute at the apex, ascending, glabrous outside, with a patch of longer straight ± erect hairs near the base inside and shorter ± wavy hairs on left half (seen from above) of the lobe becoming more densely hairy along the margin, right half and right margin glabrous. Stamens in a column inserted at the base of the corolla tube; staminal column ca. 4.8 mm high; filaments broad with horny margins (anther wings) and with a cup-like projection below (pollinium entrance), coalescent only at the very base; anthers with connectives excluded ca. 1.9 mm long, papillate towards the base and along the margin of the thecae; connectives much prolonged into five filiform appendages grouped together below in a column but free above, ca. 2.9 mm long, glabrous. Corona lobes spatulate, ca. 1 mm long, bent ± horizontally outwards, glabrous. Pollinaria each with 4 pollinia grouped close together; pollinia two in each anther locule, ascending, ellipsoidal, ca. 0.2 mm long, attached on U-folded soft corpuscula at the margin of a discoid style head. Ovary subinferior, with numerous ovules. Style narrow and cylindric in lower half but conical below the style head, ca. 1.0 mm high; style head ca. 0.5 mm high, with a discoid lower part that abruptly narrows into the style, and with a narrower and short upper part, which is usually slightly depressed at the apex, and is hidden by the staminal cone.

Follicles very narrowly ovoid to almost linear, ca. 15 cm long, rather thin walled, glabrous; seeds not seen except for coma with 1.5-2 cm long hairs.

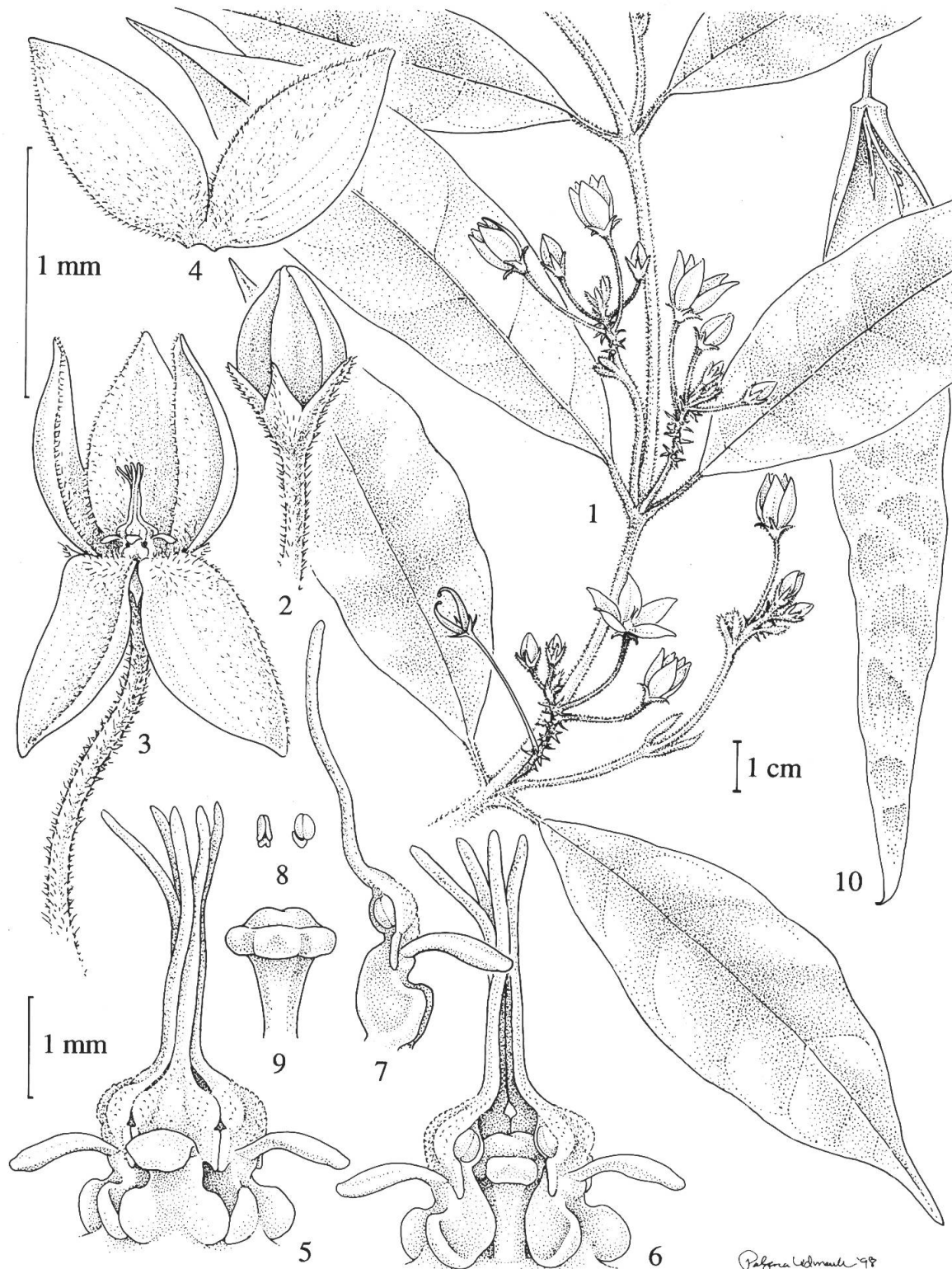


Fig. 1. – *Calyptranthera gautieri* Klack. – 1, Habit. – 2, Flower in bud – 3, Flower with two petals bent downwards. – 4, Portion of corolla from within. – 5, Gynostegium. – 6, Gynostegium with one anther removed. 7, Anther seen in lateral view. – 8, Pollinaria. – 9, Style head. – 10, Follicle (open). – 1-10, *Gautier & al. LG3197* (2-9 from spirit material). Drawn by P. Lidmark, Stockholm.

*Distribution and habitat.* – *Calyptranthera gautieri* is known only from the type locality in the Manongarivo mountains in the northwestern part of Madagascar, found in riverine forest at 500-550 m altitude. Flowering specimens seen from August and September.

*Discussion.* – *Calyptranthera gautieri* has spatulate and horizontal corona lobes, a structure also characteristic for three other *Calyptranthera* species, viz. *C. brevicaudata* Klack., *C. caudiclava* (Choux) Klack. and *C. pubipetala* Klack., but unknown elsewhere in the tribe *Secamoneae*. The remaining two species of *Calyptranthera*, the large-flowered *C. baronii* Klack. and *C. grandiflora* Klack., differ by their ascending, long and filiform corona lobes in addition to the larger size of the flowers. *C. gautieri* is most similar to *C. caudiclava* from the southeastern part of Madagascar, but phylogenetically probably more closely related to *C. brevicaudata* and *C. pubipetala*. In addition to the spatulate corona lobes, *C. caudiclava* and *C. gautieri* are both furnished with much prolonged and filiform anther connectives. *C. gautieri* differs, however, by lacking the distinct calyptra formed by the broadened more or less fused bases of these connectives which is characteristic and unique for *C. caudiclava*. *C. baronii*, *C. caudiclava* and *C. grandiflora* have the filaments fused into a distinct tube below five cup-like projections that function as pollinium entrances. This tube is very short in *C. brevicaudata* and *C. pubipetala*, and absent in *C. gautieri*. *C. gautieri* furthermore lacks the submarginal straight line of bulbous hairs near the base on the corolla lobes that is present in *C. baronii*, *C. caudiclava* and *C. grandiflora*. Most species of *Calyptranthera* have seven or nine parallel veins on the corolla lobe. *C. caudiclava* differs in this character, however, by having three parallel main nerves and several deviating lateral anastomosing veins. *C. gautieri* is in this character somewhat intermediate, having seven main nerves but with the two outermost pairs already half way from base to top beginning to anastomose. *C. brevicaudata* and *C. pubipetala* are both known from the northernmost part of the eastern lowland forests, i.e. geographically relatively close to Manongarivo. *C. gautieri* differs, however, from both by its prolonged filiform connectives.

*Paratypus.* – **MADAGASCAR**, Besinkara, ruisseau Andavakevy, 300 m en amont de la traversée du sentier du Bekolosy, 500 m alt., 1996, *Gautier, Messmer & Totozafy Be LG3068* (G, K, MO, P, S, TAN, TEF).

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