

## A new species of *Cipuropsis*, and some remarks about this recently resurrected genus

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Recently the genus *Cipuropsis* (*Vrieseae*) was resurrected in the revision of the *Tillandsioideae* by Barfuss et al. (2016) as a monotypic genus containing only the type species, *Cipuropsis subandina* Ule (1907). No species were transferred to the genus by Barfuss et al., mainly because this species could not be included in the study because the type could not be investigated phylogenetically, it is not in cultivation and known from the type collection and a few additional collections only.

Diagnostic characters of *Cipuropsis subandina* Ule from Barfuss et al. (2016):—Plants epiphytic or terrestrial herbs, acaulescent, forming water impounding rosettes. Leaves mesomorphic; leaf blades lingulate. Inflorescence usually compound, once or twice branched, rarely simple; floral bracts carinate, 1.5–2.5(–3) cm long; flowers distichously arranged. Sepals symmetric, 1.5–2.5(–2.7) cm long; petals yellow or white, 2.3–3 cm long, about 1/4 of their entire length conglutinated/connate into a tube, forming a tubular, actinomorphic corolla with erect, slightly spreading or recurved blades, bearing linear and entire basal appendages highly adnate to the conglutinated/connate portion of the petals; stamens shorter than the petals, included within the corolla; filaments partially agglutinated/adnate to the conglutinated/connate portion of the petals; anthers not versatile, united into a tube surrounding the stigma; pollen sulcate, exine reticulate, with a sulcus of the complex diffuse type (subtype c) or complex insulae type (subtype d); ovules obtuse; style included within the corolla; stigma of the simple-erect type.

Floral bracts and petals in the two species described below are shorter than given above, 1.3 cm for the floral bracts and to 1.7 – 1.9 cm for the petals. Another remarkable feature in many of the species that are candidates for transfer to *Cipuropsis* are bi-colored floral bracts, mostly red or orange with a white or yellowish apical part.

Details on the petal structure of *Cipuropsis subandina* remain unknown. On the basis of available information, *Vriesea dubia* (L.B.Sm.) L.B.Sm. (1967) seems to be the species most closely related to *C. subandina*, and might be expected to provide the best model of petals in the latter species. *Vriesea dubia* (Fig 1) is very similar in overall habit to the two species described in this article as members of the genus *Cipruopsis*, but the floral morphology is very different. In *V. dubia* the sepals slightly exceed the floral bracts, but the petals do not exceed the sepals and are cucullate, completely without spreading tips (Fig. 2).

The Andean genus *Cipuropsis* is distinguished from *Vriesea* (that is mainly from E. Brazil) by the simple-erect stigma type (Fig. 6E, *vs.* of the convolute-blade II type in *Vriesea sensu str.*, see Fig. 11). It has mesomorphic (thin) leaves, water-impounding

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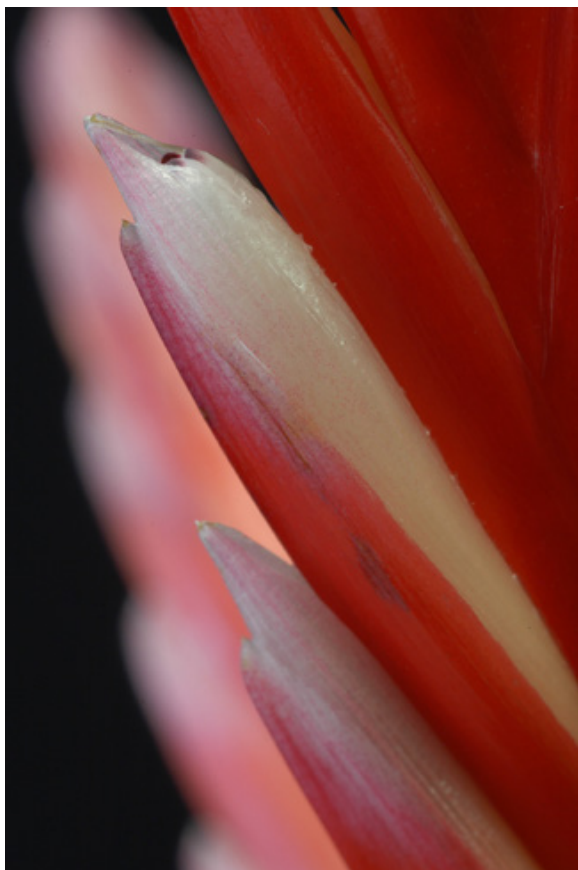


Figure 1. *Vriesea dubia* flowering plant in cultivation at Utrecht B.G. with accession nr. 2011GR00937 (flowered 13-09-2011), collected by Jeffrey Kent (USA), Ecuador, probably from the Cutucú mountains, donated to Utrecht B.G. by Peter Bak. Photo by Eric Gouda.

rosettes and *Tillandsia* like inflorescences, with relatively small densely imbricate floral bracts and small flowers, short connate white or yellow petals with two nectary scales (ligules) at the base like in *Vriesea sensu str.*

The newly described *Cipuropopsis* species below, much resembles and is closely related to *Tillandsia amicum* I. Ramírez & Bevilacqua (1990), therefore *T. amicum* is here transferred to *Cipuropopsis* and an amended description with more flower details is given below.

Figure 2. *Vriesea dubia* spike detail with bright red bracts, showing a flower with the rose tinged white sepals exceeding the floral bract and the included slightly opening cucullate white petals with a vinaceous apex. Photo by Eric Gouda.



***Cipuropopsis amicum*** (I. Ramírez & Bevilacqua) Gouda comb. nov. (Figs. 3–6)

Basionym: *Tillandsia amicum* I. Ramírez & Bevilacqua, *Acta Bot. Venez.* 15: 149-152 “1988” (1990) Type: Venezuela: State Yaracuy, District of Bruzual, Camino ‘Cascara amarga’ above Campo Elias, Alt.1000 m., 68°56’ W, 9°10’ N. 23 January 1982. *E. Rutkis* 452 (holotype VEN).

**Plant** stemless, up to ca 60 cm tall, producing the vegetative offset next to the peduncle at anthesis. **Leaves** 25–65 cm long, 2.9–3.8 cm wide, glabrous; **sheaths** indistinct from the blade, narrow elliptic to oblong, ca 12 x 4 cm, subdensely appressed lepidote of pale dark centered scales, greenish or paler toward the base and abaxially with a castaneous band just above the white base; **blades** strap shaped, ca 32 x 3.5 cm, attenuately acute or apiculate, dark green adaxially, occasionally wholly purple-red or at least abaxially toward the base, sparsely punctulate lepidote. **Peduncle** elongate but often shorter than the leaves, 25-55 cm long, curved and bending over the leaves. **Peduncle bracts** elliptic, apiculate, notably exceeding the internodes, reddish. **Inflorescence** subdensely once branched, up to 30 cm long, with 9 – 20 spikes; **main axis**



Figure 3. *Cipuropopsis amicorum* flowering plant in cultivation at Utrecht B.G. with accession nr. 2013GR00736 (flowered 18-09-2014, donated by Munich B.G.), collected by M. Speckmaier (Vienna B.G.): Venezuela, Edo. Yaracuy, Cerro La Chapa, cloud-forest, 1200–1800 m altitude. Photo by Eric Gouda.

terete, slightly flexuous, glabrous. **Primary bracts** ovate-elliptic, short acuminate, pungent, appressed to the spike, chartaceous, reddish or bright red, often with dried or green apical part, the lower about equalling the spikes, the upper to about reaching the middle of the spikes. **Spikes** erect, 3–10 flowered, linear lanceolate to elliptic, 2.2 to 7.2 cm long, 1.5 to 1.7 cm wide, strongly complanate with almost flat sides, adpressed to the main axis; **rachis** glabrous, obtusely angled to alate excavated, internodes 3–4 mm long. **Floral bracts** obovate-oblong, obtuse or broadly rounded, obtusely carinate to ecarinate, membranaceous, 1.3 – 1.7 cm long, 8 mm wide, exceeding or just exceeded by the sepals, densely imbricate and covering the rachis, distinctly veined, bi-colored, bright red with white apical part, abaxially glabrous and obscurely punctulate lepidote adaxially. **Flowers** contiguous with the rachis, sessile, with an obconic, 3 x 4 mm, bluntly bicarinate receptacle. **Sepals** sub-free or the adaxial pair connate for 1–2 mm, ovate to obovate-oblong, 11–12(–16 Ramirez & Bevilacqua!) mm long, 5.5 mm wide, rounded or broadly obtuse, even, obscurely carinate if at all, abaxially glabrous and obscurely punctulate lepidote adaxially, whitish. **Petals** 3.5 mm connate and adnate to the antesealous filaments, 17(–24 Ramirez & Bevilacqua!) x 4 mm, lingulate, rounded and slightly emarginate, white, bearing 2 ligules (nectary scales) at the petal base; **ligules** 6 x 1.5 mm, 4 mm connate to the petals, fleshy, apical part free, acute or obtuse. **Sta-**



Figure 4. *Cipiuopsis amicornum* detail of inflorescence, showing the bright coloured bracts, and flower with snow white petals, note the membranaceous veined floral bracts with hyaline margins and apex. Photo by Eric Gouda.





Figure 5. *Cipuropopsis amicorum* detail of the leaf rosette center, showing the shoot produced right next to the peduncle base (probably a characteristic of subtribe Cipuroposidinae). Photo by Eric Gouda.



Figure 6. *Cipuropopsis amicorum* flower details: A. separated petal with two highly connate nectary scales at the base (ligules) and two stamens, note the emarginated apex and dorsifixed anthers; B. two petals still connate and adnate to the base of the antesepalous filament; C. pistil; D. flower with the floral bract, note the floral bract exceeding the sepals and the carinate base of the adaxial sepal; E. simple-erect stigma, slightly twisted. Photo by Eric Gouda.

*mens* included, 13 mm long, equal to or exceeded by the pistil; *filaments* the free part fleshy, complanate; *anthers* 4 mm long, linear-sagittate, dorsifixed at 1/4 from base, attenuate from base to apex, obtuse, pale yellow, pollen pale yellow. *Pistil* 13 mm long, ovary 4 x 2 mm, tapering from base to apex, slightly contracted into the style, white; *style* slender, white; *stigma* simple erect, papillose. *Seed capsule* angled, 1 cm long.

*Cipuropis asmussii* Gouda, spec. nov. (Figs 7-10)

**Diagnosis:** A *Cipuropis amicorum* like species that can be distinguished by the following characteristics: Plant larger (over 100 cm *vs.* 88 cm) with wider leaf-blades (4–5 cm *vs.* to 3.8 cm); inflorescence with a sub-erect peduncle and extending much above the leaf rosette (*vs.* curved and bending over with the leaves); spikes (9–)12(–15) flowered (*vs.* 3–10), to 10 cm long (*vs.* to 7.2 cm); floral bracts pale red in lower half and greenish-yellow in apical part (*vs.* brightly red with white apex); sepals (1.2–)1.3–1.4 cm long (*vs.* 1.1–1.2 [–1.6 Ramirez & Bevilacqua!] cm), carinate in lower half (*vs.* obscurely if at all carinate), anthers basifixed or nearly so (*vs.* dorsifixed at 1/4 from base).

**Type:** Venezuela: State Aragua, Santos Michelena, close to town of La Esperanza, Alt. 1200 m., N 10°10'44.74" - W 67°9'24.498". Cloud forest. 13-05-2016. *M. Asmuss* 10 (holotype VEN, isotype U)

**Plant** nearly acaulescent or short caulescent, flowering to over 100 cm tall, with 15–20 leaves, forming a spreading rosette. **Leaves** thinly coriaceous, 57–90 cm long, much shorter than the inflorescence; **sheaths** distinct, merging gradually or contracted into the blades, elliptic, inflated-convex, 10–16 cm long, 6.5–8 cm wide, with pale broad membranaceous margins, (sub-)densely appressed-lepidote, on both sides, with minute brown centered scales, dark brown to castaneous and black toward the base, the very base for 1 cm cream colored and glabrous; **blades** slightly arching, 50–75 cm long, (3–)4–5 cm wide, narrowly rounded, acuminate and sub-pungent, sparsely lepidote, with minute opaque scales, adaxially dark green, abaxially violet towards the base. **Inflorescence** sub-erect, subdense, once-branched, of polystichously arranged branches, 18– over 20 branches; **fertile part** ca. 50 cm long, glabrous. **Peduncle** sub-erect, nearly wholly covered by bracts, 75–100 cm long, 4–7 mm in diameter, internodes 2–3 (shorter distally) cm long, glabrous, green. **Peduncle-bracts** erect, densely imbricate, chartaceous, ovate, pungent, exceeding the internodes, 7–8 cm long, sparsely lepidote, reddish. **Axis** elongate, slightly bending. **Primary-bracts** like the upper peduncle bracts, slightly divergent with the branches, the lower nearly equalling and the upper about half as long as the axillary branches, obscurely lepidote at the base and apex, pale brown. **Spikes** suberect or slightly divergent, sub-sessile, stipe ca. 4 mm long, densely flowered, distichously (9–)12(–15) flowered, strongly complanate, lanceolate, acutish, 4–10 cm long, 1.2–1.5 cm wide, with one sterile bract at the apex; **rachis** for most part exposed (when dry), flexuous, sharply 4-angled (excaved), pale-red to yellowish. **Floral-bracts** erect, densely imbricate, thin coriaceous, finely nerved toward the apex, bi-carinate at the base and



Figure 7. *Cipuropsis asmussii* flowering plant growing epiphytically at the type locality. Photo by Matthias Asmuss.

for most of its length bluntly and finely carinate, elliptic-oblong, rounded or minutely apiculate, (15–)16–19.5(–24) mm long, 8.5–9 mm wide, 3–4(–5) times as long as the internodes, glabrous abaxial, adaxially sparsely appressed lepidote, greenish-yellow and pale red in lower half. **Flowers** contiguous, open just for some hours in the afternoon, pollinated by ants, sessile; **receptacle** narrowly obconic, ca. 19 mm long. **Sepals** thinly coriaceous, finely nerved, elliptic, rounded, (12–)13–14 mm long, 0.5–0.6 cm wide, carinate in lower half, abaxial one subfree, adaxially distinctly connate for 2–3 mm, abaxially glabrous, sparsely appressed lepidote adaxially with brown centered scales, whitish-hyalin. **Petals** lingulate, about 19 mm long, 2 mm wide, petal base stiff and





Figure 8. *Cipuropsis asmussii* flowering plant in cultivation used to preserve the type specimen.  
Photo by Matthias Asmuss.

longitudinally folded, rounded or slightly emarginate, white, bearing two ligules on the petal base; ligules nearly 1 cm long, highly connate with the petals, with triangular



Figure 9. *Cipuropsis asmussii* inflorescence detail showing the flowers and bracts. Photo by Matthias Asmuss.



Figure 10. *Cipuropsis asmussii* flower parts: A. flower and bract; B. sepals (the one on the right, abaxial side); C. petals with ligules and stamens; D. petal with 3 stamens and pistil; E. flower without sepals. Composition by the author, photos by Matthias Asmuss.

entire free lobes ca. 7 mm long. **Stamens** nearly equal in length, exceeded by the pistil for ca. 1.5 mm, included; *filaments* complanate, shortly adnate to the petals, free part subterete; *anthers* basifixed or nearly so, with distinct fleshy connective, linear-sagittate, incurved, obtuse, 3 mm long, pale yellow. **Pistil** exceeding the stamens; *ovary* slenderly conical, attenuate from near the base, 4 mm long, 2 mm wide, then abruptly contracted into the style; *style* slender; *stigma* short sublinear, simple erect, slightly twisted. **Fruit** (immature) 0.3 cm in diameter, rounded and beaked.

**Etymology:** This species is named after Matthias Asmuss from Caracas who is dedicated to Bromeliaceae from Venezuela and who collected this new species.

**Comments:** The rosette and leaves of this new species are very similar to those of *Cipuropsis amicum* in form and coloration, but are slightly larger. The inflorescence also looks very similar, but is on a sub-erect peduncle (vs. curved peduncle and bending over between the leaves) and reaching much above the leaf rosette. It is less colourful than *C. amicum*, which has nice bright red bracts against faintly coloured in this new species. In coloration it more resembles some colour forms of *Tillandsia rubra* Ruiz & Pav. (1802) also belonging to this species complex and which will be transferred to *Cipuropsis* in the future.

From personal communication with Manfred Speckmaier (Vienna) I learned that the species was collected earlier at a locality called “El Volcan” in Estado Miranda which lies just at the southern margin of the city of Caracas at about 1400 m elevation. Later Manfred himself collected the same species with Winfried Meier January 1999, for the herbarium of the Universidad Central de Venezuela (UCV n.v.) at the Cerro El Pauji in the Estado Aragua. Seeds from this collection were sent to the Botanic Gardens of München and Vienna and in Vienna some plants can still be found in the collection today.



Figure 11. Stigma of the convolute-blade II type in *Vriesea carinata* Wawra (1862), photo Eric Gouda.

**Acknowledgements:** I want to thank *Matthias Asmuss* for the many years we are communicating about *Bromeliaceae* and for sharing a specimen and photographs of this new species with me for study and making it possible to publish this new species and Manfred Speckmaier for providing additional collecting information. I want to thank Walter Till (Vienna) for the valuable comments to improve the manuscript and the Editor Alan Herndon for correcting the English language. I want to thank Botanischer Garten München-Nymphenburg for

sharing a plant of *Cipuropopsis amicorum* with the Botanical Garden Utrecht. Last but not least, I want to thank the always generous and helpful Peter Bak for providing a specimen of *Vriesea dubia* to me.

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[Editor's notes: The generic revision of Tillandsioid genera cited in this article (Barfuss et al, 2016) - and the article by Peter Tristram further on in this issue - has already led to many name changes in widely cultivated plants. These changes usually do not affect the way we grow plants, but will inevitably have great influence on the way plants are labelled for the show table. Of course, the revision is far too recent to be fully built out, so there are - and will be for some time to come - species that cannot be accurately placed within the system.

The present article by Eric Gouda falls within such an area. This recently resurrected genus probably will ultimately include several species from the Andes that currently have names within *Tillandsia* or *Vriesea*, but these reassignments will probably require further study of individual species that are not presently well understood. Here, Eric gives an overview of what is currently known about the morphological characteristics that differentiate *Cipuropopsis* from other genera in the Tillandsioids. Of course, these characteristics may change as allied species are critically compared to a growing number of *Cipuropopsis*. ]