



Natural hybrids of *Tillandsia argentina* and a few others previously published as species

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Some *Tillandsia* species easily form hybrids with other *Tillandsia* species and some like *Tillandsia complanata* Bentham (1846) even hybridize with species of other genera. *Tillandsia argentina* Wright (1907) is one that easily forms hybrids with other species. So probably there is a lack of physiological barriers between this and other species that probably did not occur in the past in the same distributional area. It is known that unrelated *Tillandsia* species that do not grow in the same area can easily be crossed with each other, because there are no physiological or biotic or abiotic barriers which are needed to avoid hybridizing. As biotic factors you can think of pollinators that do not visit both species or different flowering time during the year, and as an abiotic factor different elevation.

Species from other genera are less compatible, so those hybrids occurs less often, but in the case of *Tillandsia complanata* it is known that it does hybridize with *Guzmania monostachia* (L.) Rusby ex Mez (1896) and has been described as *Guzmania barbiei* Rauh (1985). Derek Butcher noted that Harry Luther already suggested in September 2004 that this is a natural hybrid between those species and that Joachim Saul reported never having been able find the species of it in the vicinity of the type locality.

Now what about *Tillandsia argentina*? Rauh and Weber both described several *Tillandsia* species that turned out to be hybrids and were very rare because, to my knowledge, they were not found again and thus known only from the type locality. *Tillandsia argentina* forms hybrids with *T. tenuifolia* Linnaeus (1753), *T. aeranthos* (Loisel.) Smith (1943), *T. didisticha* (E.Morren) Baker (1888), *T. muhrii* (1986) [as *Tillandsia* x 'Tanti' in the BCR, not described yet] and *T. albertiana* Verveer (1969).

Over the years I collected information about those taxa and tested the pollen germination on an agar plate (bad germination is an indication of hybrids) and studied the pollen uniformity (normally pollen of a species are uniform but varies in size in hybrids). Specimen were photographed and documented and flowers were dissected and compared with that of putative parents.

Taxonomy

x Guzlandsia barbiei (Rauh) Gouda comb. nov.

Guzmania barbiei Rauh Trop. Subtrop. Pflanzenw. 53: 46 (1985), syn. nov.

A hybrid between *Guzmania monostachia* x *Tillandsia complanata*

Note: *Tillandsia complanata* is the only Tillandsioid with lateral inflorescences and keeps growing from the center. All natural hybrids with this species do form a terminal inflorescence and smaller ones from the leaf axils. This is also the case with *Guzlandsia barbiei*. See also in the text above.

Tillandsia x dorotheae Rauh (emend. Gouda) Trop. Subtrop. Pflanzenw. 60: 59-65. (1987). Figure 1.

A hybrid between *Tillandsia argentina* x *Tillandsia albertiana*. Already suggested by Harry Luther and Walter Till (see Kiff 1991).

Note: a very nice hybrid that flowers nearly all the time, divides easily and forms large clusters. From the pollen test (clonotype D.Muhr s.n. BO-1-HEID-31306), very irregular pollen were observed that did not germinate in vitro. Pollen of *Tillandsia albertiana* were germinated on the same agar plate and germinated well.

Tillandsia x gensei Rauh (emend. Gouda) Trop. Subtrop. Pflanzenw. 65: 54-5. (1988). Figure 2.

A hybrid between *Tillandsia argentina* and an unknown parent.

Note: The unknown parent is probably a slightly larger species than *Tillandsia argentina* with distichous flowers and white petals. The hybrid is larger than *T. argentina* in all aspects. Pollen test (from clonotype Genser s.n. AR-1-HEID-131896) shows nearly 0% germination (compared with nearly 100% germination of another *Tillandsia* species on the same agar plate) and polymorphic pollen form and size, which is an indication of hybrid pollen.

Tillandsia x pfeufferi Rauh (emend. Gouda) Trop. Subtrop. Pflanzenw. 65: 61-3. (1988). Figure 3.

A hybrid between *Tillandsia argentina* x *Tillandsia didisticha*.

Note: Both species are probably less compatible because the flowers do not develop well, and a pollen test could not be done (clonotype D. Muhr s.n. AR-1-HEID-104659), but it has similar features as the other hybrids. It starts developing a nice colored spike and the pink corolla will become visible just above the floral bracts but do not come out any further in several sequence years. The same has been observed in an undescribed natural hybrid of *Tillandsia didisticha* x *Tillandsia lorentziana* Grisebach (1874) we found in between a *Tillandsia didisticha* population in Bolivia, where *Tillandsia lorentziana* was around.

Tillandsia x walter-richteri (emend. Gouda) W.Weber J. Bromeliad Soc. 34(3): 102-103,130 (1984). Figure 4.

A hybrid between *Tillandsia argentina* x *Tillandsia tenuifolia*.

Note: Walter Till considers this to be a natural hybrid with *Tillandsia argentina* and *T. tenuifolia* as both are common in the type locality. Others who agree are Renate Ehlers, Lotte Hromadnik, Frank Hasse and Ewald Heger who have visited the type locality (personal communication with Derek Butcher). Test of pollen germination of the clonotype (Helmut & Lieselotte Hromadnik 5142 [from Uwe Scharf]) showed 0% germination against nearly 100% germination of pollen of *Aechmea recurvata* (Klotzsch) Smith (1932) on the same plate.

Tillandsia x cornissaensis Gouda spec. nov. Figure 5.

Type: Argentina: Salta, pasture near pass Cornissa, 1400 m elev. Leg. Helmut & Lieselotte Hromadnik 7081 (holotype U)

A hybrid between *Tillandsia argentina* x *Tillandsia aeranthos* with intermediary characteristics but overall more like a *Tillandsia aeranthos* but with more succulent leaves as in *T. argentina*. Peduncle bracts and floral bracts red, petals some shade of blue, becoming pinkish after anthesis. The spike is mostly polystichously flowered at the base and distichously flowered upward or sometimes fully polystichous or distichously flowered. Etymology: Cornissa is the Pass where the type specimen was found.

Note: The plant was received as *Tillandsia tenuifolia* from Walter Till (Vienna B.G. IPEN ??) and at first hand identified as *T. x walter-richteri*, but I realized that in habit it resembles *T. aeranthos* more while *T. x walter-richteri* is more like a large *T. argentina*. I have also made this crossing in cultivation, grown from seed myself and the plants looks very similar to the type except that the petals of the artificial hybrid are darker blue in color.

Tillandsia x guelzii Rauh (emend. Gouda) Trop. Subtrop. Pflanzenw. 65: 55-8. (1988). Figure 6.

Tillandsia pucaraensis Ehlers Bromelie 1989(1): 9-10 (1989), syn. nov.

A hybrid between *Tillandsia didisticha* x *Tillandsia pohliana* Mez (1894).

Note: This is a very fast-growing plant and spreading around in collections because it is easily propagated vegetatively. It is obviously a hybrid with a single spike with the lower flowers polystichously and the upper distichously flowered, a phenomenon more common in hybrids, see note of *Tillandsia x cornissaensis*. The clonotype studied is D. Muhr s.n. (AR-1-HEID-104862)

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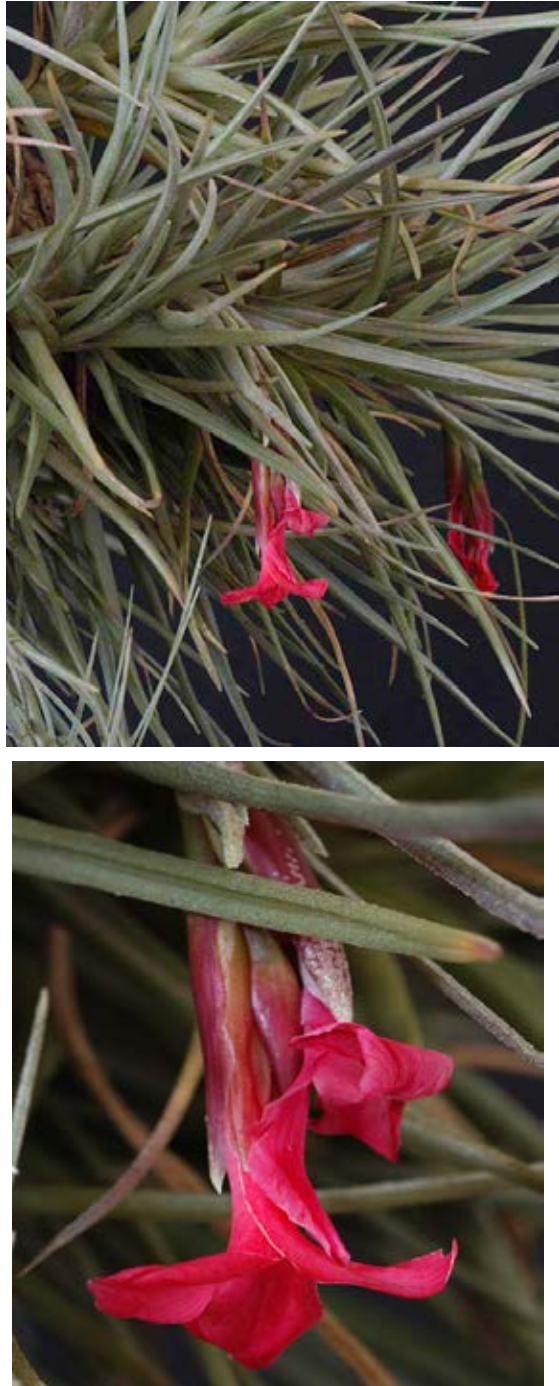


Figure 1 *Tillandia x dorothaea* habit and inflorescence in detail



Figure 2 *Tillandsia x genseri* habit and inflorescence in detail



Figure 3 *Tillandsia x pfeuffer* habit and inflorescence in detail



Figure 4 *Tillandsia x walter-richterii* habit and inflorescence in detail



Figure 5 *Tillandsia x cornissaensis* habit and inflorescence in detail



Figure 6 *Tillandsia x guelzii* habit and inflorescence in detail