

INFLUENCE OF GREY-LEAVED TILLANDSIA SPECIES IN HYBRID CROSSES

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This paper is largely based on Dimmitt (1990), comments from Margaret Paterson, Nev Ryan and other participants at the Bromeliad Society of Queensland's tillandsia workshop in 2002, some observations from Karen Andreas, and feedback at the Bromeliads XIII conference in 2005. They are also generalisations. Thus, a particular cross may not exhibit the characteristics which one would expect, based on the observations in this article.

albertiana contributes its growth habit (including size) and petal shape/colour. It appears to be a "dominant" parent in crosses.

albida. "...has a caulescent habit that does not show up in hybrids with acaulescent species, but its very long, thin inflorescence is dominant. Its hybrids have not been winners, but one with T. streptophylla is interesting. It looks like a giant, acaulescent T.albida (or a white-leafed, non-curly T.streptophylla) with a very tall, branched, narrow inflorescence with reddish bracts and pale blue flowers...." Dimmitt (1990) p.121

baileyi. contributes its size, growth habit, and inflorescence shape.

bergeri. contributes its size and growth habit.

brachycaulos. "...contributes soft, green leaves. It also greatly shortens or usually completely suppresses the elongated spike of another parent. The bright red leaves at maturity do not come through well unless the other parent has the same trait...." Dimmitt (1990) p.121

bulbosa. "...with its bulbous base and twisted, awl-shaped leaves (it) is extremely dominant. Nearly all of its hybrids look mostly like it, to the extent that it is difficult to recognise the other parent. It tends to dwarf the inflorescence of hybrids. The trait of red upper leaves at flowering does not come through well...." Dimmitt (1990) p.121

butzii. contributes its growth habit, including size, and branched inflorescence.

capitata. contributes the shape, size and colour of its inflorescence.

concolor. "...transmits stiff leaves and good symmetry of the rosette. The branched spikes and their bright red colour and/or chartreuse bracts are transmitted to offspring very well. Its progeny bloom over an extended period, and the bracts stay colourful for about three months..." Dimmitt (1990) p.121

crocata. contributes its inflorescence's size, shape and petal colour.

didisticha. "...greatly slows the growth of its hybrids, even with T.stricta; none are even close to flowering at four years of age...." Dimmitt (1990) p.121

durat. Dimmitt (1990) argued that *duratii*'s size was not evident in its hybrids. This statement is not universally true. For example, *Wonga* (*duratii* x *mallemonitii*) is much closer in size to *duratii*, than *mallemonitii*. Dimmitt stated that *duratii* contributes stiff, succulent, heavily lepidote leaves to its hybrids. This is not universally true e.g. see *Wonga* and *Goomong* (*duratii* x *stricta*) neither of which have succulent-like leaves.

Dimmitt (1990) continues "...Its (*duratii*) green primary and flower bracts are quite dominant in the progeny. In two crosses with species in other subgenera (*T. meridionalis* and *T.gardneri*) the plants have been very beautiful, but the inflorescences have been abortive and without flowers. Hybrids with *T.stricta* produce small, few-branched spikes with some color in the flower bracts, and small, dark blue flowers. A few clones have very large, many-branched inflorescences with small but deep purple flower bracts. A cross with *T.cacticola* looks like a giant succulent *cacticola*; the first spikes are appearing and are very large...." (p.121)

edithae. does not appear to be a dominant parent in its hybrids

exserta. typically contributes the size and shape of its inflorescence

fasciculata will often contribute its numerous-leaved habit, multi-branched inflorescence, and relatively vigorous "pupping," traits.

flabellata. contributes its size, growth habit and inflorescence size/shape

intermedia. contributes its elongated form, and few leaves to most of its hybrids.

ionantha. "...dwarfs the size of its hybrids and greatly shortens or, more often eliminates the elongated spike of the other parent. The red leaves at maturity do not come through unless the other parent had the same trait..." Dimmitt (1990) p.121. However the *ionantha* cultivar known as "Druid" does not appear to transmit its inflorescence/petal colour to its offspring.

ixioides. "...contributes stiff, lepidote leaves. The green flower bract colour is very dominant. The yellow flower colour is transmitted if the other parent has white flowers. Crossed with blue flowers, the result is dirty-brown flowers i.e. with *T.stricta*...." Dimmitt (1990) p.121

mallemonitii. contributes its growth habit, but not necessarily its size.

pseudobaileyi. "...like *T.bulbosa*, is heavily dominant. Hybrids have bulbous bases, twisted awl-shaped leaves, and frequently faint striations on the foliage. It contributes a large, branched inflorescence...." Dimmitt (1990) p.121

recurvifolia.(Following are Dimmitt's comments for *meridionalis* which is a synonym for *recurvifolia*) "...contributes stiff, lepidote leaves and fairly vigorous growth, though not as fast as *T.stricta*. The white flower color dilutes the color of the other parent in the progeny..." Dimmitt (1990) p.122

rothii contributes the shape and colouration of its inflorescence and the red "hue" which its leaves assume at flowering e.g. see *Belli* (*rothii* x *exserta*).

schiediana often contributes its "two tone" petal colour to its progeny's flowers.

streptocarpa. contributes its growth habit (but not necessarily its size), inflorescence shape/size and petal colours.

streptophylla. "...transmits its large size and very large, well branched spike to almost all of its hybrids. Some hybrid progeny also have twisted leaves...." Dimmitt (1990) p 122. However from my observations streptophyllou usually imparts its form to its progeny.

stricta. "...contributes its rapid growth more than anything else, including its short-lived blooming habit. The pink flower bracts and blue flower colour are greatly suppressed when crossing with green-bracted or white flowered species...." Dimmitt (1990) p.122. However stricta also appears to often transmit its growth habit and size to its offspring, although this outcome isn't always evident.

tenuifolia. contributes its caulescent growth habit.

xerographica typically contributes its wide, greyish-succulent looking leaves and its multi-branched inflorescence.

xiphioides "...usually transmits its very slow growth rate. The only hybrids yet to flower has been with T.stricta. The green flower bracts washed out the pink of the other parent. The large flower size did not come through well, the hybrid's flowers were about twice the size of T.stricta and less than one-quarter of T.xiphioides...." Dimmitt (1990) p.123

Concluding comments

Some concluding observations, in no particular order, on this topic are:

(a) It usually takes 2 or 3 generations before one can be confident as to the final characteristics e.g. size, inflorescence, of a particular hybrid.

(b) There appears to be little information available on the extent to which different clones, of a given species, produce hybrids with dissimilar traits

(c) The comments in the first part of this paper are based on primary crosses (F1) between species. There is little experience with F2 crosses.

(d) While relatively little information is available on the traits which "strong" (dominant) parents such as durattii, bulbosa transmit to their offspring, there is even less available on which species do not transmit their characteristics. Yet this information is just as important if future hybridists are not to repeat the "mistakes" of the past.

(e) Crossing two similar species e.g. recurvata and stricta often results in offspring displaying hybrid vigour e.g. larger inflorescences than either parent (Dimmitt, 1990). The converse is also often true. Perhaps there is a case to concentrate on crossing species within a given subgenus.

(f) While a matter of personal preference, I've found hybrids with albertiana, duratti, fasciculata, streptophylla and xerographica as a parent to be well worth growing.

REFERENCES:

Dimmitt, M.A. (1990) Additional notes on breeding superior tillandsias. BSI Journal v.40 (3) 118-123.