

## Clone preservation project update - June 2009

I would like to concentrate on the *Aechmea chantinii* group this month, trying to define some of the characters that may be useful in differentiating the various cultivars. Since I have only a few of the named cultivars in my own possession, and most of them are not in bloom right now, I cannot offer detailed discussions of individual cultivars. (The full list of named cultivars is given in the May update.) Rather, my understanding of the characters is based on study of the seedling swarm produced by Altria plants. I suspect the range of variation seen in the Altria seedlings is at least as large as that among the named cultivars.

We should start with the non-reproductive parts of the plants. First, we should note that there is a great range in mature size among the clones. The cultivar 'Dwarf' usually has a leaves under 12 inches long (in my collection), while many cultivars have leaves exceeding 30 inches in length.

The most striking feature of *Aechmea chantinii*, of course, is the banding of the leaves. The white bands, that typically stretch from side-to-side of the leaf, are created by the overlapping heads of peltate trichomes. Between the white bands, where the trichomes are scattered or entirely lacking, the ground color of the leaf blade is evident. The ground color of the leaf may range from a bright, dark green to a very dark violet. Banding patterns vary widely among different clones of the species. Bands may be irregular in width or they may be substantially equal in width. The white band may be much narrower than the band of ground color, or much wider. In the Cultivar Registry, the former is described as green/black banded and the latter is described as white banded. When the white bands and green/black bands are about equal in width, they can be described as evenly banded. You can have even, narrow bands or even, wide bands. Another distinction can be drawn between plants where the white bands contrast strongly with the bands of ground color (strongly banded or well-marked) versus plants where the contrast is much less. Also, plants may have distinct bands on the lower surface of the leaves, but not the upper. Other plants have distinct bands on both leaf surfaces.

Bands, however, are not always found on plants of *Aechmea chantinii*. At least one cultivar ("Snowflake") presumably is characterized by bands broken into splotches of white. Other cultivars have leaves with uniform white coloration. For instance, the clone of *Aechmea chantinii* forma *amazonica* I have (from Wally Berg via Karl Green) shows no trace of banding. There are also presumably clones with relatively few trichomes that have leaves with an overall green appearance.

Other leaf characteristics, such as width, also differ considerably between clones. Leaf width, of course, is very dependent on cultural conditions. Plants grown under high nutrient conditions will have larger leaves than plants grown under low nutrient conditions. The differences I am talking about are relative. For plants grown under my conditions, the cultivar 'Ebony' has leaves that are rarely wider than 1 inch. Most cultivars have leaves that are close to or over 2 inches in width. Finally, although *Aechmea chantinii* is characterized by thick, stiff leaves relative to most other *Aechmea* species, there is notable variation within the complex. The 'Pink Goddess' cultivars are distinguished by very stiff leaves. The leaves on these clones do not bend or arch to a significant extent along their length. Other clones I am familiar with have leaves characterized by graceful arching.

My own experience is that banding patterns in general are passed to successive generations. A plant with bold banding will produce pups with bold banding, etc. Ground color may be more dependent on growing conditions. For instance, the cultivar 'DeLeon' has a dark green ground color when grown with plentiful fertilizer. When grown under conditions of nutrient scarcity (my normal growing environment), the ground color takes on a much darker tone. This raises the question whether cultivars 'DeLeon' and 'Dark DeLeon' are truly distinct. Among clones with a green ground color, nutrient scarcity usually produces a plant with a paler green, often yellowish appearance.

Inflorescence characteristics provide, if anything, even more ways to distinguish potential clones. The large bracts that subtend the lower branches of the inflorescence are typically an orange-red color, but can be pink to yellow to a dark red. Based on what has happened with other species, I would also expect plants with white bracts to appear eventually. If anyone knows of a white-bracted cultivar (especially if it is among the already named cultivars), please let us know.

The shape of the inflorescence can vary widely from plant to plant (clone to clone?), but I have not recognized any differences that seem to be inherited.

Floral bracts (the small bracts that subtend individual flowers) seem to be green in a majority of wild-collected clones, but they frequently are red to a greater or lesser extent many horticultural cultivars.

In most clones, the sepals are green, but in the clone of *Aechmea chantinii* forma *amazonica* I possess, the sepals are red. There is no reason that other cultivars with red sepals could not exist. There is also an apparent variation in the shape of the ovary of different clones. In most clones the ovary at flowering is about as long as

thick, but in some clones, the ovary is clearly longer than thick. This appears to be an inherited character, but I can't be sure yet.

I most frequently see flower petals with a uniform yellow color from the base to the tip of the free lobe, but there are also petals with white tips (the white tips appear to be common among the close relatives of *Aechmea chantinii*, such as *Aechmea zebra*, *Aechmea retusa* and *Aechmea mooreana*). Another variation in the petals is the shape of the petal tips. When in flower, the free lobes of the petal can be straight with the tips barely separated or the free lobes can be slightly curved outward, separating the tips. Flowers with the tips curved out also seem to have stiffer petals.

Using the above characters, perhaps extended as more experience is gained, it should be possible to describe the differences between all cultivars of *Aechmea chantinii*. As an example, I am including descriptions of two named cultivars that happen to be in bloom in my collection right now. As more cultivars bloom, I will publish descriptions. Anyone with a blooming clone is also invited to share their descriptions with the rest of us. It is important to look at several different plants of each cultivar to determine whether they differ in any character. Such differences presumably mean the character is controlled by growing conditions (at least in part).

*Aechmea chantinii* cv. 'Pink Goddess' (the Jack Holmes clone) has stiff, narrow leaves with bands of irregular width. The ground color is indistinct because the bands, although irregular, cover most of the leaf blade. The large scape and primary bracts are pink. Flower petals have white, outwardly curved tips. The clone collected by Patricia Bullis is a larger plant with the same stiff leaves and banding pattern, but I do not know the inflorescence yet.

*Aechmea chantinii* 'Tarapoto' (a plant offered by Tropiflora that was collected from the vicinity of Tarapoto, Ecuador) is a large plant. Banding is indistinct, with bands of irregular width. Ground color of the leaf blade is a dark green. The primary bracts are orange-red. Floral bracts are green to yellow. Petals are uniformly yellow and straight.