SOUTHERN NEW JERSEY AFRICAN VIOLET CLUB
Presents: The History, Cross-Pollination and Propagation by Leaf of African Violets

Part I - The 107 Year History of the African Violet

In The Beginning, near the end of the nineteenth century, most of East Africa was ruled by Germany and its military officials, who had a strong presence in the region. One such official was Baron Walter von Saint Paul, who had a personal interest in botany, most likely fueled by his father, Baron Ulrich von Saint Paul, who was the President of the Tree Society of Germany.

In 1892, Baron Walter von Saint Paul found unusual purple-flowered plants in the Usambara Mountains, located in the region which is now known as Tanzania, Africa. He collected and sent seeds from the plants to his father in Germany, who shared them with Hermann Wendland, Director of the Royal Botanic Gardens at Herrenhausen. The first flowering specimen was named, "Species Ionantha", which translates to: 'with violet-like flowers', hence the emergence of their commonly known name, African Violets. The plants were also given the generic name of "**Saintpaulia**" in honor of the von Saint Paul family.

The American History of the African Violet began in 1926 when a Californian nursery, Armacost and Royston, imported seeds from Germany and England. Armacost and Royston used the resulting plants to develop many new hybrid African Violets. The original ten selected for release included the named varieties of "Blue Boy, Sailor Boy, Admiral, Amethyst, Commodore, Mermaid Neptune, Norseman, Viking, and #32". Since that time, African Violets have become one of the world's most popular houseplants. Because of the tendency of Saintpaulia hybrids to "sport" or mutate, many new characteristics have been introduced to African Violet growers. Some of the most important mutations include: girl foliage, variegated foliage, pink blossoms, and double blossoms.

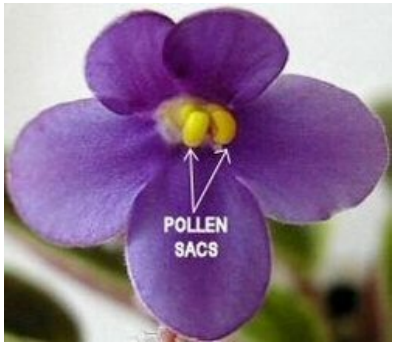
Register Your New Hybrid. At present, there are over 10,000 registered varieties in the African Violet Society of America (AVSA) database and every year there are many new and unusual African Violet varieties that become available. Every African Violet in the AVSA registry contains the following: the name of the variety (up to 3 words – such as "Lyon's Lavender Magic"), the AVSA registration number, the date of registration, the first initial and last name of the hybridizer, and the blossom and foliage description. **Note: New hybrids must be reproduced with three (3) generations of documented true bloom to demonstrate genetic stability, in order to be eligible for AVSA registration.** For further information on the rules of hybrid registration, please check with AVSA officials. Now, let's get started!

Presented By: Julia Frazier and Andrew Brining

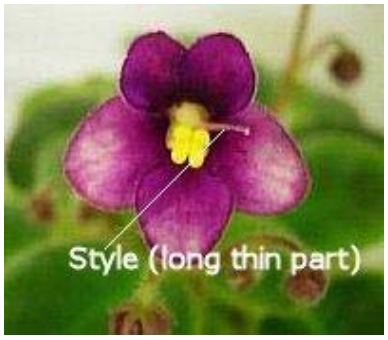
Part II A – Cross-Pollination: Learning to Identify African Violet Flower Parts

Pollinating African violets is a fun and easy way to produce new hybrid varieties. Crossing African Violet plants will produce unique color combinations and leaf shapes, sometimes never before seen.

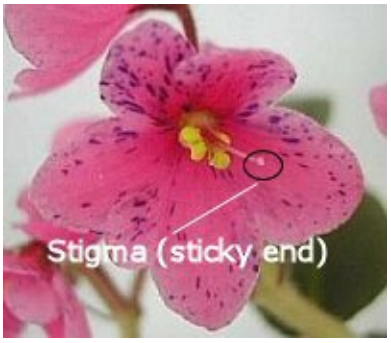
The reproductive flower parts of the African violet that we need to be concerned with in hybridizing are the yellow anthers, called "**Pollen Sacs"** of the donor (male or donor parent) and the sticky end, called "**Stigma"** of the "**Style"** (collectively, the Stigma and Style are called the "**Pistil"**). The donor pollen needs to be applied to the sticky end of the Pistil when seed parent (female, or pod parent) is receptive.



The yellow anthers are the **Pollen Sacs**



The **Style** is the long, thin part



The **Stigma** at the end of the style is sticky when the plant is receptive to pollen.

Ovaries + style + stigma = **Pistil**

Seed Pod Forming

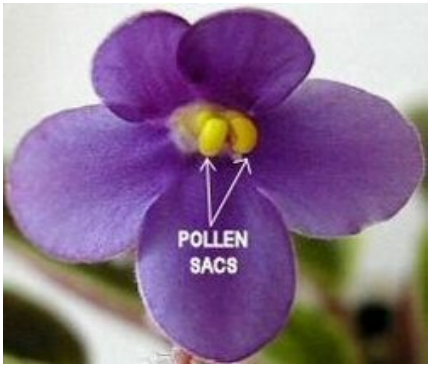
Seed Pods Maturing

Part II B – Cross-Pollination: Hybridizing From Seed

African Violet Hybridization is a fun hobby that will reward you with new and interesting plant varieties. Crossing African violets is easy to do and will produce seed pods within a couple of weeks. Seed pods usually take up to six months to fully mature.

Before you begin it is always advisable to work on a clean, dry surface and to sterilize your tools. Although no special tools are needed in order to cross-pollinate African Violets, many people like to use manicure scissors, razor blades, toothpicks and other household items. It is recommended that you sterilize your tools with bleach or alcohol beforehand. **Note: If you will be making several crosses with different parents and pollen sets, be sure to wash your hands, work surface, and tools between crosses so not to cause cross-contamination.**

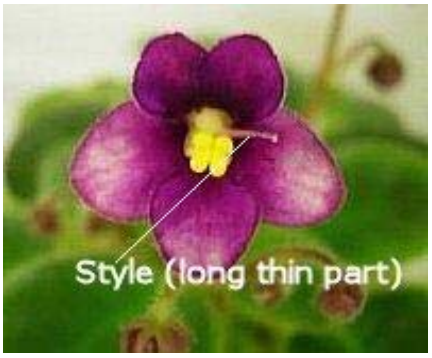
1. Choose Parent Plants.



The first decision is choosing which two plants to cross. You can use any two African Violets. If you are just curious about hybridizing and want to give it a try for the first time, just select two plants that have nice qualities that you would like to see combined. If you're attempting to produce very specific results, such as yellow flowers over mosaic variegated leaves, or single red stars with white edges, you will need to know more about genetic traits and their inheritance patterns in order to choose parents for successful results.

The two flower parts that you need to be concerned with are the yellow anthers, called, "Pollen Sacs" and the "Pistil". Generally speaking, African Violet plants are bi-sexual and have both plant parts; they can serve as either the seed parent (the 'mother' plant that will carry the seed pod to maturity) or the pollen parent (the 'father' plant or pollen donor). The plants you choose for each role matter only if you are professionally hybridizing and if so, you can review the list of dominant and recessive traits prepared by Dr. Jeff Smith, a Horticulturist who writes articles for the AVSA magazine. Otherwise, just determine the seed parent and the pollen parent.

2. Cross-Pollinate African Violet Flowers.



Remove the anthers from the pollen parent or donor plant. You can pinch them off with your fingers or thumbnail or you can snip them off with manicure scissors. Split each pollen sac in half to release the pollen. You may cut them open with a razor blade or merely use a thumbnail to split them open. "Good" pollen will be dry and powdery; if the sacs are too moist or mushy, then the pollen is not viable for making a successful cross.

Transfer the powdery pollen to the Stigma (the tip of the Style) of the seed parent flower. This can be done with your thumbnail, with a small paintbrush or cotton swab. When a flower is receptive to pollination, the stigma will be sticky and often visibly glistening. This usually happens within a day or two of the flower opening and can last up to a week. Apply the pollen to the sticky end and you're done! If the cross is successful, a seed pod will begin to form and become noticeable within 10 to 14 days or later depending upon the variety.

3. Mature the Seed Pods.

Once a pod begins to form, the flower surrounding your new seed pod will fade and wither as usual. Take care not to accidentally "groom" the pod away if you are in the habit of regularly pinching off dead and dying blooms. Tying a brightly-colored piece of yarn around the flower stem is a helpful reminder. Seed pods take anywhere from three to six months or more to reach maturity, depending upon the cross, the individual plants, and the cultural environment.

When finished maturing, the seed pod will begin to shrink and turn brown and the flower stem will begin to shrivel. At this point you should remove the pod from the plant and let it air dry for a couple of weeks before sowing the seed or storing it for future sowing. Seeds are best stored in the unopened pod, so place it in an airtight container with a desiccant and store in a dry, cool place. They can remain viable for up to two (2) years or more if care is taken to keep them dry and cool.

Part II C - Tips for Successful Hybridizing of African Violets

Although the process of hybridizing is relatively easy, there are certain things you can do to increase your success rate. Below are a few tried-and-true tips and hints:

- Use pollen sacs from old or fading blooms — they will already be quite dry and the pollen inside should be powdery. Alternately, you can use pollen sacs saved from flowers that bloomed earlier. They are easy to keep for use in future crosses by storing in a paper envelope with a desiccant.

- "Old Man, Young Lady" – As the saying goes, increase your chances of success by using an older flower for the pollen and a younger flower to receive the pollen.

- Repeat a cross (reapply pollen to pistil) several times over a period of several days to increase the odds of the cross 'taking.'

- African Violet cross-pollinations take more easily in an environment with high humidity. If you have a low-humidity growing area, you can increase the humidity with pebble trays or by loosely covering the plant with a clear plastic bag. Be sure to leave adequate ventilation to prevent condensation.

- Desiccants – You can purchase desiccants in various forms from craft stores or any retailer of dried or pressed flower supplies. You can also collect and reuse desiccant packets from shoe and leather goods purchases — they can be reactivated over time by zapping them in the microwave on low heat for one minute. However, these may be toxic to children and pets, so please check the product label.

- You can store unopened seed pods in a refrigerator or freezer if you seal them with desiccant in an airtight container (plastic film containers work well) inside a tightly sealed zip-type plastic freezer bag. African Violet seeds stored this way can remain viable for two years or longer.

Other African Violet Groups of Interest:

The AVI Hybridizers Club is the sister group to AV International; both groups can be accessed online or via mailing list, and are frequented by leading experts in the field such as Dr. Jeff Smith and Dr. Dale Martens. Also recommended are memberships in the African Violet Society of America (AVSA) and The Gesneriad Society.

(This section courtesy of www.grownotes.com)

Part III - Propagating African Violets By Leaf Cutting

African violets are very easily propagated from either a leaf or a sucker. Even inexperienced growers can quickly produce additional plants and expand their collection. Below are 8 easy steps for success!

Step 1: Remove and Trim the Leaf. Remove a *fresh* leaf from the plant that you wish to propagate. It's best to use a mature leaf, but not one that's old and tough. Using a sharp knife or razor, trim away the top of the leaf blade. This is not a necessary step, but it will encourage faster production of roots and plantlets from the leaf when it's rooted, and will stop the leaf itself from growing.

Step 2: Cut Leaf Petiole. *See photo at right.* Cut the petiole (i.e. leaf stem) at a 45 degree angle, cut-side facing up, to about 1/2" in length. By cutting at an angle, this will encourage more root and plantlet production. You may dip the end of the stem in a rooting gel or powder compound to promote rapid root development, but this has not been proven to be scientifically necessary.

Step 3: Root the Leaf Cutting. *See photo at left.* Fill a small pot with your rooting medium. This mix should be very light and porous. Make a narrow hole in the mix (you may use an old pencil, a swizzle stick or a spoon handle to do this). Push the leaf petiole into this hole up to the bottom of the leaf blade (as shown), and firm-in rooting mix around it. More than one leaf cutting may be rooted into a single pot, if there is room. The mix should be moistened but not too soggy or the leaf will rot. Place it into a clear, covered container or plastic baggie and label it. Then, place this in a bright place with moderate temperature (no direct sun or very warm locations, since this may cause the leaf cutting to rot or burn).

Step 4: Inspect the New Plantlets at 12 weeks. One or more plantlets will begin to develop from the cut end of the rooted leaf's petiole and will make their way above the soil. Those pictured are ready to be separated and planted now, but we usually wait 4 to 5 months, since the extra time allows more plantlets to grow from the cutting. The plantlets also will be just a bit bigger, easier to handle, and more likely to survive their transplanting.

Step 5: Separate the Plantlets from the Host Leaf Cutting. *See photo at right.* When the plantlets are large enough for you to comfortably handle them, they can be separated from the "mother" leaf. Remove the cutting from its pot, firmly grasp a plantlet, and gently pull it away from the leaf cutting. If your rooting mix is light, and not overly soggy, this should be easily done without need for a knife or scissors. Don't worry too much if your plantlet doesn't have many roots, so long as the plantlet itself is healthy, it will produce more roots when it is re-potted.

Step 6: Prepare the Pot for the New Plantlet. *See photo at left.* Fill a small pot (2" or 2 1/4") with your regular soil mix. Make a small hole deep enough to hold the plantlet to be potted.

Step 7: Pot Your New Plantlet. *See photo at right.* Gently push the plantlet into the hole and firm-in the soil around it. The plantlet should be placed deep enough into the soil so that none of the bare central stem or 'trunk' is exposed, but not so deep as to bury the tiny growing point in the center of the plant (the crown).

Step 8: You're done! Label the plant and lightly water. Larger plantlets can be immediately placed amongst your other violets. If the plantlet is still very small and/or has few roots, you might want to place it into a clear, covered container or plastic baggie. This will provide a small "terrarium"-like environment to build up a high-level of humidity and will protect it while it gets established. Remove it from this container in a few weeks.

Note: You can also successfully reproduce an African Violet plant from a sucker (a new plant which grows out of the main stem of an established plant), by removing it with a sharp knife and following steps 6 through 8, above.

(This section courtesy of The Violet Barn – www.violetbarn.com)