

## BEGINNERS LUCK – Bill Morris

Beginners are often bemused by pollination and consider it a magical task that only a few initiated can perform. It is of course, quite simple and easy to do once you know what to do. It has also been found that pollination is far more successful when carried out under certain conditions.

If we look into our *miniata* flower, we can quite easily see six stamens with the anthers on top supported by the slender filament which is affixed to the base of the petals. The seventh little stem in the flower divides into three at the top, and this is the style which grows out of the ovary and on the triple tip it carries the stigma. This stem projects a little further out of the flower than the others. In our case the stigma is on the ends of the three divisions. When the flower first opens the three divisions of the stigma are not fully opened, but in a day or two they extend out, and you can see sticky exudate on them. At the same time the anthers open up and the pollen is clearly visible.



All one needs to do is to transfer pollen from the ripe anther to the ready stigma and fertilisation can take place. Of course, if you do it on the same plant, then you would have self-pollinated or "selfed" the plant. Broadly speaking, there are two types of breeding that you can go in for. Inbreeding, and outbreeding. In inbreeding you use self-pollination, or closely related pollen. For example, you may have three or four plants from the same stock. If you cross-pollinated with these plants this would be inbreeding. If you got pollen from an outside source and applied it to your plants, this would be outbreeding.

Pollen is destroyed by warm temperatures and loses its viability in warm weather. Thus, it is recommended that pollination should take place when it is cool, as in the early morning. One could snap the filament of a stamen off and carry it between two fingers and apply it to the mother plant. You could take a small paint brush and scoop up some pollen with this and apply it to the plant you wish to fertilise. Of course, you would avoid contaminants such as water, chemicals and foreign bodies.

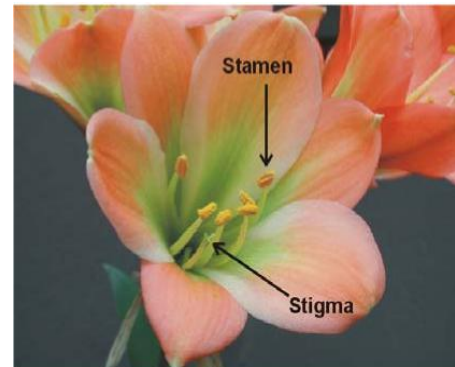
You may need to transport the pollen, and it could be knocked off the anthers into a vial or capsule which you can get at the chemist. You can store the pollen for over a year in the refrigerator or the freezer. However, it must be kept dry. It is also best removed from the anthers, as these can rot, and the pollen will suffer.

So, you have become a plant breeder, and will need to keep records to have accurate accounts of your breeding achievements. It is best to keep a record in a book. One could have a column for the date, one for the mother plants number, one for the pollen-parent's number and a

column that records the amount of seed produced. If this line was numbered A1 because it was the first line in the first book, these seeds could be identified in further breeding records as being A1 seeds or plants. It would then be possible to trace back in a simple manner some twenty years and twenty books later, how you arrived at some of your show winners.

### POLLINATING CLIVIAS

In an early newsletter our editor described how to pollinate clivias using a small brush. As I have a large number of plants and do quite a lot of pollinating, I have found the brush method slow. It also suffers from the difficulty of having to clean the brush of pollen if one wants to make a different cross. This also takes time.



So, for many years I have simply used my fingers. Lightly pinching an anther, the portion of the sexual apparatus of the flower which carries the pollen, will transfer quite a lot of pollen to the surface of the index finger and thumb. Brushing this surface across the end of the stigma of the flower transfers the pollen to this female receptive part of the flower. It is best not to do this as soon as the flower opens as the stigma may not be fully developed at that stage. I like to repeat my pollinations a number of times with intervals of a complete day between pollinations to ensure that some are done when the stigma is most receptive.

In pollinating my yellows, where I use pollen from my best couple of plants on most of the other yellows, I have now found it easier and quicker to simply pinch the stigma very gently with both of my pollen covered fingers and slightly roll the stigma between them. Once you get used to it, it is very easy to do. Again, I repeat the pollination a number of times over the period the flowers are out. It is important not to pinch tight enough to damage the stigma. I have found this method very successful, and it is about as fast as anyone can manage.

It is much easier to clean one's fingers than a brush. I simply wipe them hard on my own garden clothing a number of times. Occasional pollen grains may remain trapped in the skin ridges and valleys, but very few, and they are overwhelmed by the millions of pollen grains from the next anther that supplies the pollen to be used next.

Bill Morris, Australia

