

Variegated Camellias

by Ann Marks and Colin Baird

We were asked to write on this subject as we share an appreciation of variegated camellia flowers, feeling that this variation adds interest and may quite dramatically enhance the beauty of a normally solid coloured flower.

The Oxford Dictionary defines variegation as "marked with **irregular** patches of a different colour". This is a good working definition to apply to camellias as it excludes symmetrical patterning most commonly seen where petal margins differ in colour to the main body of the flower—for example 'Margaret Davis', 'Tama-No-Ura'. It includes, though, marking in different colours. Variegation is not confined to white marking on a darker coloured flower but may be white, pink or red or any combination of these three.



J. Margaret Davis



J. Premier Variegated



J. Tama-no-Ura

Whilst we define variegation as being irregular, perversely, we most appreciate it when it approaches the symmetrical as it is then that it is most likely to enhance the appearance of a flower. In judging a variegated camellia we look for a high degree of variegation with uniform distribution. Above all we must consider whether the flower is made more beautiful. The greater the contrast in colour the more this is likely. Sometimes variegation will tend to obscure the flower form and detract from its appearance and it is important that the flower remain typical of its variety. One is looking for a clearly defined flower not one where outlines are blurred and form lost.



*Jap. R. L. Wheeler -Uneven
variegation*



*J. Aspasia MacArthur
-Again uneven*



*J. Guillio Nuccio Var. Much
better & even variegation*

Variegation is of two main types—Genetic and that caused by Viral Infection.

1. **Genetic Variegation** results from a mutation affecting a portion of the cells in the plant's growth tip. Cells thus affected produce a colour different from the norm resulting in a variegated flower. Two distinct patterns result from this type of change :

- (a) bars, streaks and stripes occur in the petals.
- (b) the flowers may be speckled with numerous spots of white, pink, or red.

Where this has occurred the flowers on such a plant are generally of similar appearance unlike the flowers resulting from virus action where no two flowers are alike and seasonal factors seem to influence the degree of variegation.

The portion of cells affected by the mutation is widely variable. The more cells affected the greater the difference in appearance of the flowers. A good example of mutation affecting colour is furnished by the large number of 'Betty Sheffield' sports.



J. Emmett Pfingstl - Spotted



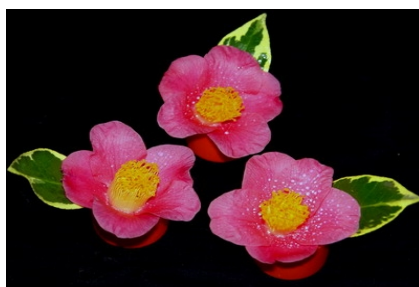
J. Betty Sheffield Supreme



J. Modern Art - Striped

2. **Viral Variegation** differs considerably from that caused by mutation. There are very many plant viruses and it is quite possible that more than one can cause variegation in camellias. Viruses are known for their ability to mutate and this is likely to produce strains of virus different in the nature and degree of their influence on camellias which, in turn, will exhibit differing degrees of resistance to a particular virus. This is similar to the situation in humans where some will experience severe symptoms when infected with a virus whilst others will show little or nothing.

The reaction of camellias to viral infection varies greatly. In some plants there will be changes in the flowers only, in others flowers and leaves will be affected and in yet others only the leaves will be altered. As a general rule the first of these is to be preferred.



*J. Benten - Foliage variegation
caused by virus*

It is of interest that where only the flowers are affected it is impossible to tell visually whether a white flower has been affected by a virus as it appears that viruses only cause a loss of colour not the appearance of pink or red markings.

There is some evidence that a minority of plants are adversely affected by the introduction of a virus. In extreme cases the plants may die and a decrease in vigour is reported in some camellias. There is a tendency for virus variegated flowers to be of smaller size. In general these do not appear to be major concerns.

There are two main ways of producing plants with variegated flowers.

1. Plants whose variegation is due to their genetic constitution will normally pass this on to their offspring. Where there is a cross between a variegated and a solid coloured plant we may get a proportion of variegated progeny and should this occur these would be expected to show the same variegation pattern as their variegated parent.

Grafting onto understock of plants with genetically derived variegation will not, of course, result in a new variegated plant.

It is possible to introduce virus variegation into already variegated plants and there are reports of this being done in America where variegation is very popular.

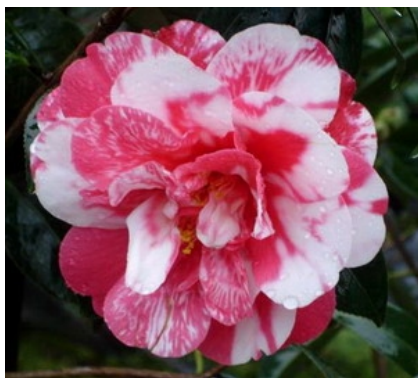
2. The only reliable method of introducing viral variegation to a solid coloured plant is to bring the growing plant material of a virused plant into direct (and probably prolonged) close contact with the plant it is desired to infect. Certainly chance variegation has resulted from pruning a solid plant with secateurs used immediately before on a virused plant, but this probably most often occurs by chance rather than design.

In America where so many growers choose to variegated flowers, a very popular understock used for this purpose is previously infected 'Mine-No-Yuki' which one grower asserted "would variegated a fence post at 8 feet!" Here they are taking advantage of sasanqua vigour as well as the fact it is easy to variegated this plant which, in turn, has proven ability to pass on the virus.

Another technique is to perform two grafts onto plain understock, one being the solid colour plant, the other virused material.

As pointed out previously plants exhibit varying degrees of resistance to virus infection and some viruses are more likely to give rise to variegation than others. It has been reported that it is almost impossible to virus some flowers, for example, 'Kramer's Supreme'. (In our opinion this is probably fortunate, some flowers are best left alone!)

Some of the best results have been obtained by repeated grafting onto a succession of virused root stocks possibly introducing more than one type of virus and probably increasing the dose.



J. Memphis Belle Var.



J. Ville de Nantes Var.



R. Cornelian

In writing this article we were helped by the articles listed below:

ACS Yearbook 1982, p.38.

Camellia News No. 114, September 1990, p.13.

Camellia News No. 116, March 1991, p.12.

ACRS Victorian Branch Newsletter No. 321, October 1992, p.8.

ACRS Victorian Branch Newsletter No. 371, July 1998, P.10.