

EXPERIENCES IN BREEDING NARCISSUS

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Some years ago I became interested in breeding *Narcissus*. In any breeding program one soon develops certain objectives, and then bends all energies towards getting plants that he likes and that have certain characters which he hopes to recombine in the seedling plants grown from these parents. When one starts to cross these clones having desirable characters one soon learns that many of them will not set seed. Much of the present writer's time and effort in the beginning was wasted trying to use as seed parents clones that do not set seeds. For example he tried to use *Dick Wellband*, *Francisca Drake*, *Firetail* etc., as seed parents, but with failure to get results. In this location there is much better seed setting in some years than in others. Rather than keep trying to get slightly compatible clones to cross it seems preferable to use for seed parents those that will likely set seed even if they do not have all the desired characters. In many cases one will therefore, have to rely largely on the male parent as the carrier of the important character most desired. When one gets some of this progeny to bloom one can then start back crossing and selfing. The experienced breeder perhaps knows what parents are useful for his needs. The beginner may want a list of clones that will usually set seed. The writer has successfully used the following as seed parents: *Love Nest*, *Pilgrimage*, *Alcida*, *Lucinius*, *Horace*, *Sonata*, *Whitely Gem*, *Beersheba*, *Kantara*, *Tunis*, *Damson*, *Daisy Schaeffer*, *Dawson City*, *Alasnam*, *Henry Fielding*, *Obvallaris, minor*, *King of the North*, *Fortune*, *White Emperor*, *Gertie Millar*, *Golden Harvest*, *Triandrus Albus*, *Mitlylene*, *Havelock*, and *Stressa*. These clones probably have been used many times in breeding work and the immediate progeny likely will not be different from what we already have. One can however start with such plants having some desirable quality for the objective in view and use the progeny for further crossing and thus build towards the ultimate goal.

A little seed was obtained the first year of my breeding works. There were however many failures. Along with the problem of learning how to obtain seed set was the problem of learning how to grow seedlings with little or no special equipment.

There are many pitfalls in the growing of *Narcissus* seedlings. The early attempts at growing seedlings were sometimes successful but often they were complete failures. The seed was sowed outside and this is probably a part of the explanation for the failures. Several different methods of growing seedlings have been tried during the years I have been interested in breeding *Narcissus*. The seed was sown (1) in a bed outside as soon as harvested; (2) in flats as soon as harvested; (3) outside in flats in November; (4) in a bed in November; (5) in flats as soon as harvested and placed in a cold frame in Nov.; (6) and in flats in a cold frame in Nov. The method that has been most universally successful with our soil and climate has been to sow the seed as soon as

harvested in rich soil in a wood flat 6 inches deep having a hardware cloth bottom. The flat is left outside under a tree till fall when it is placed in a cold frame, care being exercised to keep the seeds moist during the winter months. The seedlings usually begin to emerge in February. By this method of sowing the seed a very high percentage of germination is usually obtained. About May 1 when the cold frame



Fig. 166. Hybrid *Narcissus*—*Canary Twins*; raised by J. S. Cooley, Berwyn, Maryland.

gets too warm the flats are moved out of doors and are plunged in the soil level with the top of the ground. After the tops of the bulbs die down at the expiration of the 2nd or 3rd. summer the bulbs which are often no larger than peas are sieved out and planted in fertile soil in a bed. The bulbs are set 2 to 3 inches apart in rows that are spaced 6 to 8 inches. As soon as they are planted cow peas are sowed over the bed to serve as a cover crop. The bulbs are left here undisturbed until they bloom. In the meantime cow peas are sowed over the bed each year when the tops of the bulbs are about ready to die down. The

rank growth of cow peas serves several useful purposes, namely, it keeps the soil cool, prevents the growth of weeds such as crabgrass, chick weed and other noxious weeds; it also provides humus and helps to increase the soil fertility and also keeps the soil loose and mellow so that cultivation is scarcely necessary.

Most of the bulbs have bloomed after growing in the bed for 2 to 3 years. The total time required from seed to blooming is 4 to 6 years. By this time the plants that are good enough to warrant further observation are removed and kept for further breeding, and the rest are destroyed. In later years the good ones from this lot are put aside for still further observation.

Although there is a long wait of 4 to 6 years before one can see the results of any one's breeding work this should not deter one from engaging in such a project. If one will persist in the work and make some crosses each year and start some new seedlings, one will then have a new batch of seedlings each year to bloom for the first time after the 4th year. Then one perhaps does not realize that the plants that bloomed this year were the result of crosses made 4 or 5 years ago. No matter how low the probability is of getting an outstandingly good flower one is always expecting it to appear—if not this year surely it will the next year. There are usually a number of seedlings that are good—in fact as good as some named clones, but they are not good enough nor are they sufficiently better than the existing named clones to justify introducing them. Of outstanding seedlings selected up to the present time, the following may be mentioned.

Canary Twins (Fig. 166). An outstanding clone. 18 inches tall; umbel of two miniature trumpet type flowers, pedicels upright, ovary and flower only slightly inclined so that the twin flowers are in full view when one stands over them; flowers are for practical purposes a light Canary Yellow (RHS 2/1 to 2/2) self; perianth segments about 1 inch long, Canary Yellow (RHS 2/2), trumpet slightly over 1 inch long, and about 1 inch across at the rim, Canary Yellow (RHS 2/1); moderately

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fragrant; flowers are of good substance relatively long lasting as cut flowers. Season; mid-April to Early May.

Emily. Leedsii type, 15 inches high; flower held horizontally, and are of delicate beauty; tepals white, cup light yellow in upper 1/3, changing to white gradually below. Named for Emily Dickinson. Early April.

Chieftain. Trumpet type, 21 inches high; self yellow, flowers held upright at an angle of nearly 90 degrees. Notable for tall scape and clear self color. Early April.

Janice. Trumpet type, 18 inches tall; yellow self; very slightly lighter yellow than Chieftain; flower held upright at an angle of nearly 90 degrees. Notable for vigor as a garden plant. Early April.

Spring. Barrii type; 15 inches tall; flower held horizontally; tepals white, cup yellow with reddish-orange rim. Early April.

The writer is particularly interested in the first one, *Canary Twins*, for it appears to have considerable merit. The flowers are somewhat like Pearly Queen but they are less pendant and the color is clear Canary yellow throughout. *Triandrus Albus* may be one of its parents in the group of seedlings from which it was selected.

The other four are also quite interesting and require further testing.