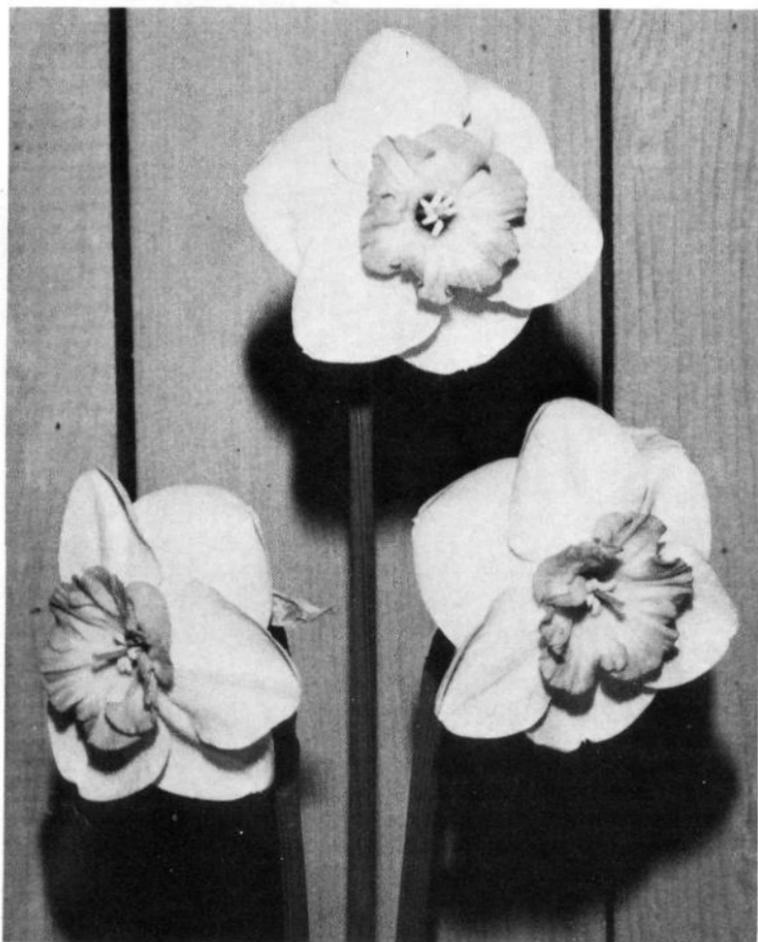


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Articles and photographs (glossy finish) on daffodil culture and related subjects are invited from members of the Society. Manuscripts should be typewritten double-spaced, and all material should be addressed to the Editor.

DEADLINE FOR THE NEXT ISSUE IS APRIL 15, 1980

SCHEDULE OF MEMBERSHIP DUES IN THE AMERICAN DAFFODIL SOCIETY

Individual	\$7.50 a year or \$20.00 for three years
(Juniors, through 18 years of age, \$3.00 a year)	
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ON THE COVER

is Bender 67-1, Orion × Anacapri, which won the Grant and Amy Mitsch Trophy for Dr. William Bender of Chambersburg at the Boston convention in 1979. Convention-goers can compete for this trophy in Memphis, March 27-29, 1980.

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FALL BLOOMING SPECIES AND A NEW HYBRID NARCISSUS

HAROLD KOPOWITZ

UCI Arboretum, University of California, Irvine

For some time I have been fascinated by the idea of creating fall-blooming daffodils. While the idea of autumn-blooming daffodils may offend some of the purists who believe that the proper time for these favorite blooms is in the spring, I have never subscribed to the idea that there can be too much of a good thing especially where daffodils are concerned. When I once mentioned to a daffodil friend that I had a life ambition to hold a daffodil show in the fall I was looked upon with polite astonishment. I had the distinct impression that he thought the good California sunshine had wreaked havoc with my brain. Well, one year the Southern California Daffodil Society did have a daffodil show in September but we cheated—we had blooms shipped in from New Zealand. That turned out to be such a beaurocratic hassle and fiasco that I repressed the entire idea for at least three months. The idea of fall-blooming daffodils, however, never really died away because it was refueled every year by two little species, *Narcissus serotinus* and *Narcissus viridiflorus*.

N. serotinus is a delightful, if weedy, species. It grows very well in Southern California and is easy to grow. It can be had in bloom from July through to late November if one knows how to manipulate the plants. It

bears a cluster of white flowers about three-quarters of an inch in diameter. There may be one to four florets in a truss and considerable variation in flower form occurs, but over the years we have been able to select some respectable plants with flat perianths and oval petals. Others have star-shaped flowers with twisted tepals. The cup is minute and split into six segments; when the flowers first open, the cup is green but quickly changes to a bright yellow or even an orangish-yellow in some plants. The descriptions that have been published previously about *N. serotinus* suggest that, like *N. viridiflorus*, it either produces leaves or flower spikes, not the two together. While it is true for some individual plants it is not true for all. A number produce leaves as well as flowers. *N. serotinus* is easy to grow provided one follows a few simple directions. It is best to plant the bulbs in pots. Five or six can easily be accommodated in a one-gallon plastic pot. They should be planted in September and will generally flower within about six weeks. In the East and Midwest they will have to be grown in a greenhouse or indoors and should be kept moderately moist until March when they must be dried off and kept absolutely dry until flowers are wanted. Flowers can be obtained from July onwards by regulating the onset of watering and in a few cases we have been able to get blooms twice a year. Plants flowering in July and August can be dried off in October and then may sometimes flower in March or April if watering is started again in late February. The quality of the spring bloom never seems to be as good as that of the fall flowers but spring flowers can (hopefully) be used for breeding. The species is very easy from seed. It should be planted as soon as harvested. There is no dormancy period and seed will germinate almost immediately. By growing and drying at appropriate intervals, flowering-sized bulbs can be obtained in about 18 months.

Whereas *N. serotinus* grows like a weed for me, *N. viridiflorus* is more finicky, but *N. viridiflorus*, with its strange grey-green flowers, is better known than *N. serotinus*. Its culture is similar to that of *N. serotinus* and, with me, usually flowers in November. I get little increase and only in recent years have I tried to set seed on it. *N. viridiflorus* is sparing of its seed whereas *N. serotinus* is overgenerous.

Many years ago I decided that if one wanted to make fall-blooming daffodils what one needed was to cross standard flowers onto the two fall-blooming species. Of course the problem entailed getting the two kinds of bloom at the appropriate times. In 1975 I was trying to turn some Tasmanian daffodils around and by chance some bloomed at the same time as a pot of *N. serotinus*. Among them was Lawali, a 2 W-P that was used extensively to breed pink doubles by the Jacksons. Lawali is said to throw double flowers occasionally (it never has for me). One Lawali bloom had good pollen and so I applied it liberally to the *N. serotinus* and harvested seven seed. Five or six germinated but over the years this became reduced to three. The next year I was in New Zealand and returned with pollen of Red Hot, a 2 O-R, which I liberally pasted over a number of *N. serotinus* and harvested several hundred seed, most of which germinated. The *N. serotinus* × Red Hot flowered first and nearly all were identical to the species parent. Obviously the cross had not taken. The *N. serotinus* × Lawali seemed different. The seedlings were more robust and usually produced a pair of leaves but when they flowered, the first two had blooms identical to *N. serotinus*. In despair I decided that *N. serotinus*, like a

number of other species, could produce parthenogenetic seed. The pollen was merely a stimulus to initiate seed production but there was no fertilization and hence no cross. Last year I managed to persuade some *N. serotinus* to bloom during the spring. Its pollen was used on the miniature 1 Y-W Sir Echo and a lot of seed was harvested. This year, using *N. serotinus* as pollen parent, we hope for a wide variety of crosses.

During the last week of October, 1979, I walked into the greenhouse and saw a bud popping out of the pot of the *N. serotinus* × Lawali cross. It looked just like a regular *N. serotinus* so I paid no further attention. On the first of November, I noticed the pot again. There was a flower and—joy—it was intermediate between *N. serotinus* and Lawali! A new fall-blooming narcissus! There was a single flower about one and one half inches in diameter with broad overlapping petals, not as white as *N. serotinus*. The cup is entire and opens a bright yellow that takes on a biscuit hue as it ages. Like *N. serotinus* it produced a flower spike without any leaves. It is faintly scented, different from *N. serotinus*, and resembles a jonquil hybrid. It will certainly spur on more efforts to make additional fall-flowering daffodils. As its growth pattern seems to be very much like that of the species, we assume that the same culture techniques will need to be used. Some of the pink of Lawali is inherited. Perhaps other hues can be transmitted as well.



N. serotinus × Lawali, a new fall-blooming narcissus (Koopowitz photos)

BULLETIN BOARD

FROM THE PRESIDENT'S DESK

This is primarily addressed to those members who will not be attending the Convention in Memphis, March 27-29. As I complete my term as your president I write to thank the members of the Society for their support and, in many instances, substantial contributions of counsel during my term.

It has been an honor and a pleasure to have served as your president. My wife, Amy, however, is looking forward to more help from me in the garden and less time spent at my typewriter and telephone.

The American Daffodil Society is a vibrant organization which has required a considerable amount of my time to keep abreast of its many activities. If I have helped further them I am grateful. I especially wish to thank the devoted members of the Board of Directors, our Officers, and Executive Committee for their staunch support.

While running the risk of failing to mention some who have been of especial help, I thank particularly Bill and Laura Lee Ticknor who picked up the torch so long carried nobly by George Lee, Wells Knierim as our watchdog treasurer, Marie Bozievich for the beauty of her artistic creations as well as her constructive thoughts and suggestions, Helen Link for her sound professional judgement and advice, and Cathy Riley for her energy, devotion to the ADS, and accessibility for helpful discussion.

As we embark upon a new year, I am confident that you will give our new administration as enthusiastic support as has been my privilege to receive.

Sincerely,
CHUCK ANTHONY

CALL OF ANNUAL MEETING

The Annual Meeting of the American Daffodil Society, Incorporated, will be held on Friday, March 28, 1980, following dinner at the Hyatt Regency, Memphis, Tennessee, for the following purposes:

- 1) for the election of officers and directors as provided by the By-Laws
- 2) to consider an amendment to Article III, Section 1, of the By-Laws relating to the composition of the Board of Directors; namely to add:
 - h. The Executive Director and Associate Executive Director, by virtue of office.
- 3) to take action and transact any other business which may properly and lawfully come before the meeting.

By order of the Board of Directors
Kathryn S. Andersen, Secretary

—○—
Make-up for point scoring of Course I of the Judging Schools will be held Sunday, April 13, 1980, in the "Board Room," The Retreat Hospital, 2621 Grove Avenue, Richmond, Virginia 23220. Anyone interested should contact Mrs. Lester F. Belter, Local Chairman, Rt. 2, Box 217 A, Mechanicsville, Virginia 23111.

—○—
Would those of you who grow Picoblanco 3 W-W please measure it when it blooms this spring. I believe its classification should be changed to 2 W-W, which it measures in my garden.

—AMY ANTHONY, *Classification Chairman*

FROM THE EDITOR'S DESK

With this issue, we inaugurate a new column—Beginner's Corner. While we are hopeful that newcomers to the ADS will find much in the *Journal* helpful, we nevertheless hope the new column will be particularly beneficial. To keep the column going each issue, we will need the help of all the experienced growers. Please take the time to write something you wish you had known when you first began growing daffodils. Recognizing that regions differ, we hope to hear from all areas.

In a similar vein, we plan to introduce an advice column—a Daffodil Abby—in the June issue. Perhaps you'd like to suggest a name for the column—"Dear Dottie Daffodil" has already been suggested. Send any questions to the Editor or Executive Director.

You will have noticed that the *Journal* came this time without its customary envelope. This is an economy measure, as the envelopes add close to \$100 to the cost of each issue. Please let us know if your copy arrives in poor condition.

Word continues to reach us about slow delivery of the *Journal*. All *Journals* are mailed at the same time, and the last two issues went in the mail on August 31 and November 30 respectively. Those in the East generally have their *Journal* within a week, while western members sometimes wait almost three weeks. Please drop me a postcard stating when your *Journal* was received. Armed with the facts, we'll have something to present to the postmaster.

FROM THE EXECUTIVE DIRECTOR

The RHS Yearbook, *Daffodils 1979*, arrived at the headquarters of our Society in North Carolina on January 21. It was mailed out the same day to members who had paid for it in advance. Copies were sent to other requestors as quickly as bills could be prepared. Each year we anticipate that the book will be available in the fall. Each year it arrives much later. Earlier we had been told that the book would be titled *Daffodils 1979-80*, but *Daffodils 1979* it is. It is a small (85 pages) but choice and highly specialized book. It covers the British daffodil year thoroughly including the World Convention. A variety of articles tell of Australian, New Zealand, and wild daffodils; of jonquils; of daffodil history; and much that is rich and rewarding to daffodil lovers. A tidbit to interest those in our Southeast who love the little hooded white trumpet, Silver Bell, is the following from Mr. Waley's article, "Narcissus in Woodland:" "a plant sent to me from USA where it is naturalized in places, under the name Silver Bell, is indistinguishable from the single *N. moschatius*."

Show chairmen should remember that the mails can be very slow. Order any needed show entry cards without waiting. Members should note that *Journal* binders are not being offered for the present. The stock of them bought years ago has been exhausted and a new source is slow in surfacing. If any member knows of a source, please inform the Executive Director.

WHERE CAN I GET . . . ?

CULTIVAR:

Agnes Harvey 5 W-W
Arctic Morn 5 W-W
Bowles Bounty 1 Y-Y
Doublebois 5 W-W
Little Prince 7 Y-O
Marychild 12 Y-Y
Morwenna 2 Y-Y
Skiffle 7 Y-Y
Soltar 6 Y-Y

DESIRED BY:

Nancy Wilson
571 Woodmont Ave.
Berkeley, California 94708

Mrs. Wilson would like to hear from *anyone* who grows the above cultivars even if they do not have a bulb to share.

SEEDS are wanted of the following varieties to build up larger stocks.

N. jonquilla var. *henriquesii*

William R.P. Welch

N. triandrus

Garzas Road

N. cyclamineus

Carmel Valley, California 93924

N. fernandesii

N. willkommii

N. gaditanus

Mr. Welch would also like to correspond with other members attempting to grow a range of poeticus cultivars in warm climates.



CONTROL THE NARCISSUS BULB FLY?

In May, 1963, the U. S. Department of Agriculture revised its leaflet #444, "The Narcissus Bulb Fly," to recommend a new and effective control of the narcissus bulb fly, *Lampetia equestris*. That control was based on the use of the chlorinated hydrocarbon, chlordane.

With the passage of time that and other chlorinated hydrocarbons fell into disapproval, thus leaving daffodil growers without an effective control of the bulb fly.

U. S. D. A. leaflet #444 has now been revised and for chemical control of the pest recommends the use of trichlorfon (Dylox R) as a soil drench against the fly. Very brief instructions for use of the chemical are: "Use trichlorfon (Dylox R) as a soil drench and follow all the label directions. Direct stream at base of plants at the beginning of adult activity (May-June). Repeat this application annually."

It should be noted that the instructions are for the use of the liquid form of the chemical and not for the granular form. Apparently the treatment is intended to kill the young larvae that are trying to work their way down the outside of the bulb to its basal plate. There is no suggestion that the chemical is to be used in a preplanting treatment.

I know of no one who has used the chemical against the bulb fly but as time goes on it would be helpful if we could have reports on its use by ADS members who try it.

—WILLIS H. WHEELER, *Chairman, Health and Culture Committee*

SEGOVIA

MRS. WILLIAM C. BAIRD, *Columbus, Ohio*

When you see the name Segovia what does it mean to you? To many people the name connotes a very beautiful historic old district of central Spain; to miniature daffodil fanciers it must be "Segovia," a choice small-cup miniature; but to me it will always mean one treasured hour spent with Alec and Flomay Gray at their charming country home which they have lovingly named "Segovia."

In the daffodil world we have our Guy Wilsons, Richardsons and others. In the miniature field Alec Gray stands alone as the acknowledged Dean; it is he who spent a lifetime collecting the species, hybridizing, and growing these lovely jewels; and it is to him we are indebted for the many cultivars we grow in our gardens today. I always enjoy reading about this gentle scholarly man. Early this spring I was doing a bit of research in preparation of handout material for the CODS booth at the annual spring flower show which is sponsored by one of our newspapers. So I was reading about Kenellis growing just outside Alec Gray's doorstep and about the three sisters, Tete-a-Tete, Jumblie, and Quince, and thinking to myself, "Wouldn't it be fun to see them growing in their original garden spot?" Suddenly the thought flashed through my mind, "Why don't I go to visit Alec Gray when I go to England in April?" I mentioned my thoughts to Bill, my husband, and he said, "And why not!" So I hurriedly wrote the Grays a letter to ask if it would be convenient for me to pay them a visit; and the following day I confidently rebooked my flight to London to allow for those few extra days I would require to make such a visit possible and I eagerly awaited a reply.

When I left Columbus I had not received my reply. It so happens their letter written on 31st March and sent air mail did not reach me until 14 May, a full week after I had returned home from the International Tour and the ADS Convention in Boston . . . so much for Her Majesty's Mail and that of the U. S. as well. At any rate when I arrived in London I checked the railroad timetables and learned it was possible to make it a round trip in one day if I didn't mind returning to London about midnight.

The weatherman promised a good day for Easter Saturday; and undaunted, I set out on the 7 o'clock train for Cornwall and new adventures. I have special memories of Cornwall which I had visited years ago; I enjoy its rugged coastline, the checkerboard fields fenced with the native stone, the quaint villages and the colorful people who have a special air about them. It is a different part of the world and I looked forward to seeing it again. En route one travels through a very beautiful part of England so I had my nose glued to the window most of the way. Once we had left the skyline of chimney pots and the environs of London we were suddenly in the country and from the train one sees the rural bits to advantage: the green fields, the hedgerows and stone walled fences; the sheep and their spring lambs; the thatched roofed cottages; the hills and the river valleys, an ever changing scene to enjoy. As we passed through the small towns, I noted daffodils planted in the gardens at the station. Wild primroses still bloom on the railroad banks. As we passed Exeter I could see the cathedral in the skyline and also could see the University buildings which are very modern by contrast. I even caught a glimpse of

the seacoast at Plymouth and saw some of the Royal Navy at anchor, and also saw the beautiful yacht basin close by.

At Cambourne I found my way to the heart of the town where I located a local florist to get specific directions to the Gray home. The town had a festive air; the sunshine had brought out the people who were happily doing their last minute shopping for the Easter weekend. I located a taxi and between the driver and helpful directions from the florist we found our way to Segovia. From the gate one cannot see their home, but a wide path lined with beautiful shrubs leads the way. It is on a downward slope so I approached from above and the roof of their house was first in view; I could hear gentle voices and knew someone was at home. Eventually I spotted them; they were bending over busily weeding their rock garden and enjoying the sunshine, which they later told me was the first they had had for many months—the winter had been very cold and the spring late and exceedingly wet. So as not to startle them I quietly spoke to them from above and introduced myself as they raised their heads. I was greeted so warmly as though I were an old friend whom they hadn't seen for a long time and immediately I was invited in for a cup of tea and homemade ginger snaps and shortbread. I had forgotten how good ginger snaps can be! Alec was a bit ruffled that I had found them in their gardening clothes and I tried to reassure him that I, too, was an avid gardener and was usually in my "mud clothes" and that my friends hardly knew me when I was dressed up. I was introduced to Sheba, the cat, "who just came one day and stayed." We talked of daffodils and daffodil people; he mentioned he was looking forward to a visit from Matthew Zandbergen when I told them I would be visiting the Netherlands on the tour. He asked about Roberta Watrous and I told him I thought she



Flomay and Alec Gray (Baird photo)

would be on this tour and that we were all looking forward to the RHS Show the next week. They reminisced about happy times they had spent there and all the excitement of seeing daffodil people; I suddenly realized how much they miss being a part of it and wished I could see it through their eyes. We talked of Cornwall and Flomay laughingly teased him; "Alec is a transplant from London even though he has lived here more than fifty years; to be a Cornishman one must be born here, so I always say we came together because I was born here the same year Alec came to Cambourne."

He still keeps his hand in working with his miniatures but on a very small scale. With a twinkle in his eye and a boyish grin on his face he invited me to see his glass house which he uses for potted bulbs and he proudly showed me a white miniature double, an "albus plenus" cross which was in bloom; there, too, was a lovely pot of Segovia. Everything else had bloomed out, so I did not see Kenellis at the doorstep nor all those flowers I had anticipated; but their season is quite early and even though it had been a very cold spring the daffodils were gone. Instead their rock garden was a splash of colorful primulas and promise of beautiful things to come.

Mention of the miniature Flomay was made, and Flomay, herself, laughingly said, "Do you wonder how Alec could have named that delicate little flower for me?" Mrs. Gray is hardly the demure, shrinking violet type. Instead she is a very vivacious lady with sparkling brown eyes and the gift of laughter in her voice; she is obviously a joy to be with and to him she is his jewel. So in my opinion Flomay, the jewel-like daffodil is well named because of his love, affection and admiration for his devoted wife. They are a delightful, charming couple and I will treasure that one hour spent with them at Segovia.



Flomay Gray at Segovia (Baird photo)

All too soon it was time for me to depart. Flomay walked me to the gate where my taxi was waiting to take me back to the town. She warmly thanked me for coming and commented how much they enjoyed my visit; "Alec really misses not being a part of it". This was a heartwarming experience and when I left I had the feeling I had always known them. Some day I hope to return to Segovia. Meanwhile I think of all the questions I had hoped to ask and completely forgot in the excitement of finding them at home. So I must get busy writing letters instead.

(Ed. note: You might be interested to learn that Mr. Gray is also a poet. A book of his poems, titled To Scilly, was recently sent me by our Dutch friend, Matthew Zandbergen. Though not of daffodils, the poems reflect Mr. Gray's love of the Scilly Isles. (Lodenek Press, Padstow, Cornwall.))

DOODLING WITH DAFFODIL METRICS

For the ardent daffodil lover, the romance is truly an all season affair. Visions of spring's beauties fade reluctantly as summer wanes and fall planting has been completed. How to lighten the seemingly endless winter wait? Back to the lure of the catalogues and journals with their lush descriptions and eye-catching illustrations.

Let's take another look at that decade-old introduction which has been on our wish list for many years.

Raw Beauty (R/26, Sauerkraut × Persimmon Blush) 2B-P. Classic form, great substance, emerald green eye, etc. \$100.00 each. "Only the most violent cases will order; very scarce, only a few bulbs to go."

What prohibitive terms! Last year's moderately priced bulbs produced many lovely blooms that were near perfection and most rewarding on the show bench and in the home. But, still — Raw Beauty — what a dream!

An idea develops. In this burgeoning metric era, why not try a draftsman's approach and draw the flower to scale precisely by the millimeter? Thus begins the doodling.

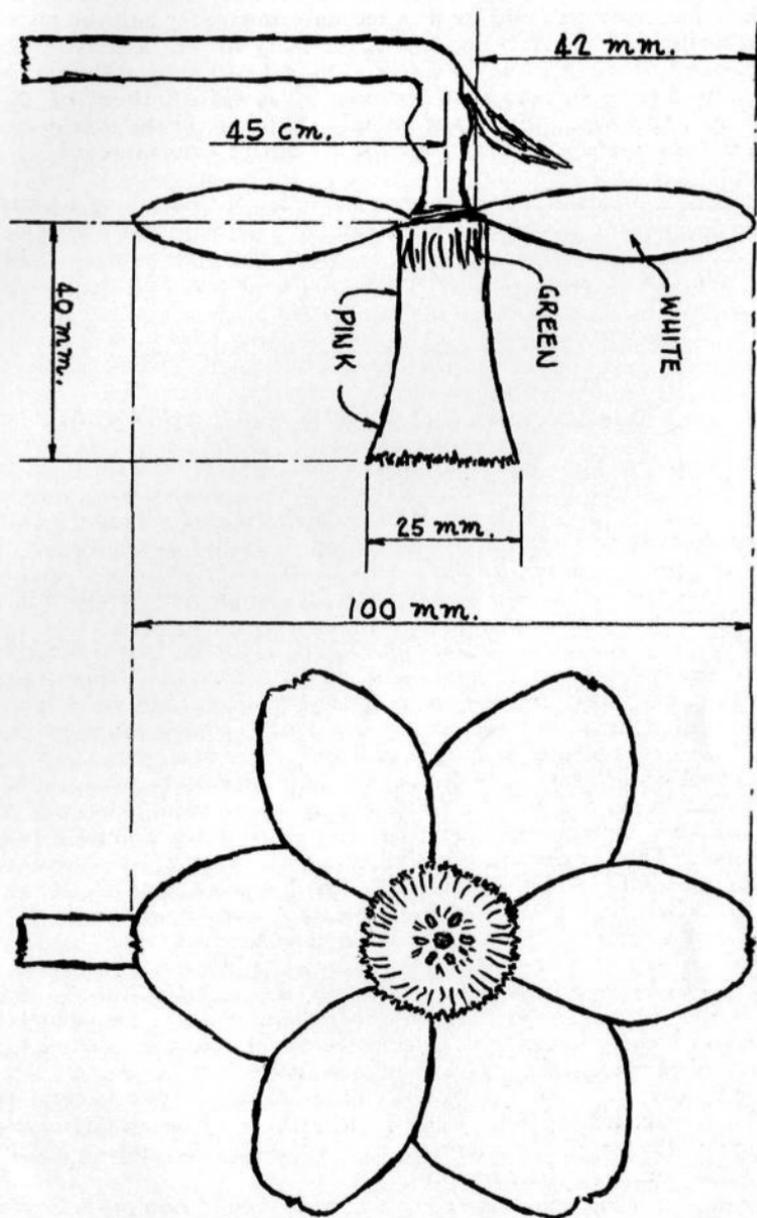
The stem supports the flower at "X" number of centimeters above the ground. ADS judging standards allocate ten points to the stem. I have never seen a daffodil growing without some kind of a stem but space prohibits a complete drawing of it. Perhaps the judges won't deduct too many points here and we may have a winner yet. The finished product appears very promising, both in profile and front view. Using the dimensional components and descriptive terms required by the Royal Horticultural Society for registration, our flower now becomes:

Raw Beauty (T. N. Thunder) 2W-GPP; midseason; height 45 cm; flower 100 mm; perianth segments 42 mm, milk white; cup length 40 mm; cup diameter 25 mm, pink with green eye. Resembles "Whatcha m' Call It."

R/26 (Sauerkraut × Persimmon Blush).

Fortunately this method of drawing is form and condition proof for there is no allowance in the metric system for nicks, mitten thumbs, and bumblebee holes. As they say in sports, just wait 'til next year for that "violent explosion" on the show bench.

RAYMOND LEWIS, *North, Virginia*



A new daffodil, Raw Beauty

A DAFFODIL GARDEN FOR OWL'S HILL

THEODORE E. SNAZELLE, PH.D.

Nashville, Tennessee

Before I begin to tell you how the educational daffodil garden at Owl's Hill came to be, I should first tell you something about Owl's Hill. Owl's Hill is a 145 acre farm located in Williamson County, Tennessee, between Nashville and historic Franklin. It was formerly the residence of Mrs. Huldah Cheek Sharp of the old Maxwell House Coffee family. The modern residence was completed in 1960 and was the home of Mrs. Sharp and her husband until his untimely death. In 1973, Mrs. Sharp donated Owl's Hill to the University of Tennessee, and it became the official residence of the Chancellor of the University of Tennessee at Nashville (UTN). Previously, Mrs. Sharp had donated the Cheekwood estate in Nashville for the purpose of creating the Tennessee Botanical Gardens and Fine Arts Center at Cheekwood.

Well, it all started innocently enough as I went to Owl's Hill on a spring day in 1978 to identify some naturalized daffodils in a meadow and some wildflowers for Mrs. Charles E. Smith, wife of the Chancellor of UTN, who was preparing to receive the first of several groups of school children who were on fieldtrips. After completing my task, I casually asked, "Do you suppose that I could have a small plot of ground for planting out my daffodil seedlings?" I really don't remember what was her reply; however, about six weeks passed and then Mrs. Smith called one morning to say that Dr. Joe High, Superintendent of the University of Tennessee Spring Hill Experiment Station, would be at Owl's Hill the next day to help select a site for the daffodils. Early the next morning, I arrived at Owl's Hill and walked around the grounds with Dr. High and Mrs. Smith. Much to my dismay, the site selected for the seedling beds was an area adjacent to the visitors' parking lot which is almost in front of the residence. Can you imagine the panic which flowed through my veins and the sick feeling that I had in my stomach when I thought about Mrs. Smith showing visitors to Owl's Hill what was supposed to be daffodils but instead looked like grass! Now, I have been a professor long enough to learn how to cover my tracks and to convert a pending disaster into a success. My mind went into high gear, being particularly stimulated by the vision of a visitor looking at Dr. Snazelle's "grass" and remarking, "What kind of egg-head professor is trying to pass this grass-like stuff off as a King Alfred daffodil?" Horrors! Necessity is said to be the mother of invention, and it was then that I recalled the Central Ohio Daffodil Society's daffodil exhibit in Columbus, Ohio. Thus was born the idea of an educational daffodil planting for Owl's Hill.

On July 12, 1978, and on August 15, 1978, a total of 222 personal letters soliciting daffodil bulbs for the establishment of an educational daffodil garden were mailed out to a selected sample of American Daffodil Society members and to a number of foreign growers. The results were most gratifying with 457 different standard cultivars, miniatures, and species forms being donated by 38 growers. Eleven of the twelve daffodil divisions were represented in the donations with only Division 12 not being represented. As you all know, there are really not too many

Division 12 flowers. Of course, some duplicate donations were received and most of them were sent on to Mrs. Glenn Millar, Memphis, Tennessee, for planting for the 1980 American Daffodil Society Convention. All donors of bulbs received letters from Chancellor Charles E. Smith acknowledging their gift of bulbs to UTN.

Beginning at the first of October and continuing on until December 30, 1978, I planted all of the donated bulbs in eight of ten beds which were dug by the UT Spring Hill Experiment Station staff. For each 100 square feet of bed, six cubic feet of Canadian peat moss and 50 pounds of gypsum were tilled into the soil before planting. After planting, broadcast application of triple phosphate and potash was made. Then, wheat straw was applied as a mulch. The railroad tie borders for the beds were set in place by myself and several men from the UTN physical plant staff. The ten beds are approximately 25 feet long and four feet wide and are situated in two rows. The beds are separated by four foot alleys, and the whole garden is enclosed by a split rail fence. To my way of thinking, the garden has a rustic appearance. In early summer, all the beds will be over-planted with marigolds.

Spring of 1979 came and despite the torrential downpour of rain, the daffodils in the Owl's Hill garden burst into bloom to be enjoyed only by a few garden and school groups who knew about the planting. Next year, I am sure that many more visitors will enjoy the daffodils of Owl's Hill.



Daffodils at Owl's Hill (Snazelle photo)

I can already appreciate the plight of Mrs. Helen Link, Brooklyn, Indiana, who has had many a bloom picked by a visitor to her planting. Several dozen blooms were cut from the Owl's Hill garden by ladies from a visiting garden club. At first I was furious, but later I calmed and decided that this action was some kind of left-handed compliment, not only to me, but also to those generous persons who made the garden possible by giving freely of the increase from their bulbs. The story doesn't end here; there are still two beds to be planted. So, if you have excess bulbs (three of a kind), let me know, and I will provide you with a list of the cultivars which have already been donated so that you can donate cultivars which we do not already have planted in the garden. Thus, the educational daffodil garden at Owl's Hill came to be; however, there is still a small problem: I don't have any of my seedlings planted at Owl's Hill!

ADDENDUM

Since the preceding article on Owl's Hill was written, much has happened which has left the future of the educational daffodil garden in question. In what may have been a landmark decision, the federal court ordered the merger of the University of Tennessee at Nashville with Tennessee State University. The merger took place on July 1, 1979. Subsequently, the former chancellor of UTN, Dr. Charles E. Smith, became the editor of the Nashville *Banner*, an evening newspaper. At the time of this writing, the Owl's Hill property remains in the hands of the University of Tennessee system; however, the residence of the former UTN chancellor is unoccupied. What plans the University of Tennessee has for Owl's Hill have not been announced. In the event that the educational daffodil planting might not continue to be open to the public, a request has been made for permission to move the garden in 1980 to another location which is as yet undetermined. Until the uncertainty around the daffodil garden has dissipated, no new donations of bulbs for the garden will be sought.

WHAT THE ADS AWARDS WERE MEANT TO BE

HELEN K. LINK, *Brooklyn, Indiana*

Each ADS Award has been set up for a purpose which is to honor outstanding, distinctive blooms from the various divisions. Whether this criterion is always met is doubtful as ascertained from personal observation over a period of years.

When reading the list of names of cultivars which have won ADS Awards in some of our shows, one wonders whether a collection made up of certain cultivars should have received an award. All daffodil growers and exhibitors should be cognizant of the fact that not all cultivars are of show caliber. Some do not have good form, pose may be poor, substance less than ideal, texture rough, and color muddy or streaked; however, those cultivars which are less than ideal for exhibition may be excellent growers and good garden flowers. The wise exhibitor is one who knows the good qualities of daffodils and knows the difference between show

specimens and garden flowers. It is very important that judges grow as many cultivars as possible.

Both exhibitors and judges should remember that cultivars in collections are not judged against each other, but against perfection for the division to which they belong. For instance, a collection of twenty-four different cultivars in competition for the Quinn Award should contain the very best scapes selected from at least five different divisions. If there is one scape in a collection which does not score 90 points, then the collection should not receive a blue ribbon. Every bloom in a collection should be scrutinized very carefully by the judges. One of the weak points in many collections is loss of substance. If substance is waning in blooms which have been refrigerated the loss affects color as well. In a two-day show such blooms will be very much past their prime on the second day, or on the evening of the first day. Refrigerated material deteriorates very quickly, especially when refrigerated for any length of time. I once saw best of show completely folded up on the second day and guests were saying, "How could that have won?"

Best of show (Gold Ribbon) winner means the very best bloom in the show regardless of whether it is exhibited in a collection or as a single specimen. No classes should be excluded (except miniatures which have their own awards). That prize winning scape may come from a collection which did not win any award. Judges should remember this and keep in mind excellent scapes which they have seen in their assigned classes. It is too bad that this choice is made after all judging is completed. The judges are getting tired, they hesitate to look at classes they did not judge, and my experience has been that some fine things are never seen as possibilities for best of show. Often judges must be coaxed to pick out worthy blooms, or they say they did not see anything in the classes they judged. A study of ethics teaches us not to electioneer for best of show, but it seems logical that if a judge sees a bloom he or she thinks is a possibility, even though they did not judge in that section, he or she might ask one of the judges who did to consider bringing it forward. I would not consider this electioneering, only giving the scape a chance.

The Red-White-Blue Ribbon for a collection of five cultivars of American breeding or origin, any division or divisions, clearly states any scapes bred by Americans are acceptable regardless of size, color, form, etc. Uniformity should not be considered; therefore a collection from Divisions 1, 2, and 3 should not take preference over a collection made up of cultivars from five different divisions if quality is equal. Surely we Americans are capable of breeding cultivars from all the divisions and let's exhibit them with the hope that they will not be ignored because they are not all the same size. Intermediates should be considered as well as multiple flowered scapes. Good cultivars from Divisions 5, 6, 7, and 8 are much harder to breed than those from Divisions 1, 2, 3, 4, and 9. Credit should go where it is due.

The White Ribbon for best three blooms of the same cultivar should be awarded to an exhibit which has three blooms as nearly perfect in all qualities as possible. The blooms need not be extra large for the cultivar, but should be uniform in all qualities including maturity. In other words they should be rubber stamps of perfection for both the cultivar and the division. Blooms of bright color beckon the eyes of the judges, but the judges should be sure the blooms have other good qualities as well.

In a class for a collection of twelve cultivars (ADS Green Ribbon) representing no fewer than four divisions, there should be variety. The word collection means variation. If the blooms were all the same color and size, the exhibitor might as well show twelve blooms of one cultivar as far as educating the public is concerned. Multiple bloom scapes should have a place in the collections.

At the National Show in Cincinnati in 1974 I heard a visitor remark when viewing the winning Quinn Gold Medal Class, "That exhibitor really had twenty-four different cultivars, they are an education in daffodils." The collection was exhibited by Marie Bozievich. She chose variety of form, color, size, and pose. There was no variation in substance and texture; there was near perfection in every flower. The collection was tastefully staged, but not so precise that it looked like staging was foremost in the mind of the exhibitor. The entire collection had excellent quality combined with variation.

Divisions which offer variation in form and color are 4, 5, 6, 7, 8, and 11. It is somewhat doubtful whether some judges would consider scapes from Division 11 worth an award of any kind, but it stands to reason that personal prejudice should not be a factor in judging. The split coronas, when well grown, have as much a place on the show table as off color, amber colored, or other odd color combinations. They should have their place, if worthy.

Neither the name of a cultivar nor that of the breeder should have any bearing on deciding award winners. Every scape should be judged on merit. Although prejudice should never be a factor in judging seedlings or cultivars where the schedule asks for the name of the originator, in some instances I fear it has played a part in awarding. It might be well to eliminate the requirement for the name of the originator to appear on the blooms, especially seedlings, until after they are judged.

The name of the exhibitor should never be displayed on an entry tag until the entire show is judged. Clerks should be told not to remove the bottom half of entry tags on blue ribbon winning specimens until all awards have been placed. Turning over the tag after the lower half has been removed is not sufficient. If a tag is fastened by a rubber band to the test tube or bottle it is apt to turn over when moved and the exhibitor's name will be visible. Consistent award winning exhibitors often are not very popular. Jealousy is a display of human nature.

Although we have previously discussed the importance of quality when placing awards, judges should not overlook blooms which may not be spectacular in color, but when scrutinizing carefully have no faults. They may be subtle in color but have excellent form, pose, substance, and texture. Size should never be a deciding factor. Unless the judge has grown the cultivar in question and knows normal size, he or she should be careful in penalizing heavily. The same applies to color. Although we have color coding it is by no means perfect and never will be because of variation in soils and weather conditions. Also the originator may have formed the color code when the bloom first opened and by the time it is mature and ready for the show table it may be entirely different.

The Bronze Ribbon and the Harry I. Tuggle, Jr. Perpetual Trophy classes call for three stems each of twelve cultivars of standard daffodils from at least three divisions. These need not be all single flowered scapes, and no judge should withhold an award if other than Divisions 1, 2, and 3 are represented provided the quality is worthy. It is not necessary that the

blooms in the twelve vases all be the same size. The three which make up the vases should be identical in quality, but variation in size, pose, etc. will occur in the vases of three stems of the various cultivars which make up the collection of twelve vases.

The Matthew Fowlds Award for the best named standard cyclamineus hybrid in a National Show should be awarded to the best standard scape in the show regardless of size (miniature excluded). Every cyclamineus hybrid in the show should be considered regardless of where it is shown, collections or otherwise.

The Larry P. Mains Trophy requirements clearly state the entry must be composed of three stems each of nine cultivars from Division 3. As stated previously each vase should be uniform, but there will be variation in form, size, etc. among the cultivars chosen. No award should be withheld because all nine vases of three are not the same size. The triangle form of staging each vase is pleasing.

The Purple Ribbon is awarded for a collection of five daffodils selected from a group of eligible classes as set out in the schedule. The winning collection ought to exhibit the very best of that particular division. Size and pose should not be a factor. For instance, in a collection from Division 6, Bushtit with its soldier-like pose is quite different from Charity May. Surfside with its large size and delicate coloring is much different than Trena or Tracey (New Zealand). Large, medium, and those too large to be considered miniatures should all be acceptable in such a collection, but should be representative of both the cultivar and the division. It is very important that the judges be familiar with the characteristics of Divisions 5, 6, 7, and 8 as the cultivars differ considerably in many respects. Judges who do not grow these divisions may expect more uniformity than will be found among those which have multiple flowered scapes. Each bloom on a multiple flowered scape should be scrutinized for morphological perfection. Many times one flower may have only four or five perianth segments which can be overlooked especially if the bloom is not entirely open when judging takes place.

The ADS Miniature Awards should be awarded for the same qualities as the standard scapes with the exception of grace which is considered under form. Certain miniature multi-flowered cultivars do not have as much grace as many of the single flowered scapes. Judges should not penalize severely for this so-called fault which really is not a bad fault as it is normal for the division and cultivar. While the exhibitor can separate the blooms when grooming, the pedicels are so fragile that too much pressure may break them. Cyclataz is an example where the blooms, if more than two or three, seem crowded because of short pedicels. No multiple flowered scape should be severely penalized for this characteristic. Sometimes Flyaway may have as many as four florets on a scape. Such a scape may seem crowded, but to withhold an award from a collection because of lack of grace on one scape would seem rather severe. If the scape has no faults other than being crowded (grace) eleven points would have to be removed to keep the scape from scoring 90. This is more than 50% of the points allocated for form and grace.

Good judges will use common sense and put aside personal preferences. It is distressing to hear a judge say, "I don't like Surfside, I can't give it a blue ribbon; it is too large for a cyclamineus." Division 6 clearly states, "Cyclamineus daffodils of Garden Origin (hybrids). Characteristics of

N. cyclamineus predominant." Size should not be a factor as long as cyclamineus characteristics are predominant, and they definitely are in Surfside.

Where the ADS Awards are at stake it seems judges should be extremely careful to judge for quality, leave out personal preference and prejudice. When there is doubt about awarding any bloom a ribbon, ask yourself and the other judges on the panel, "How many points should be removed, and for what?" The answer may be a surprise. Above all as judges let's be fair, honest, and put aside personal preferences. No judge awards a prize to the exhibitor. It is the flower which receives the award.

DAFFODIL DAY AND THE AMERICAN CANCER SOCIETY

What does Daffodil Day have to do with the American Cancer Society? It's easy to understand when you know that Daffodil Day launches the fund raising campaign of the American Cancer Society in many areas each spring.

Matthew Zandbergen, writing in the *Daffodil and Tulip Yearbook* for 1965, says that "When the Greater Niagara Unit of the Canadian Cancer Society, Ontario, was formed in 1946, it was decided that the daffodil should be its emblem."

Daffodils were selected since this flower represents the symbol of hope, much as the Cancer Society does.

A large planting of daffodil bulbs, presented with appropriate ceremonies as a gift of the Royal Bulbgrowers Association and the people of Holland, was made in Queen Victoria Park. From this evolved the "Daffodil Day" as we know it today, first in Canada then spreading to the neighboring United States. What is Daffodil Day? Quite simply, it is the one-day sale of daffodils which have been transported from the fields of the Pacific Northwest. Actually, sale is not the right word—daffodils are given in return for a minimum donation.

Sally Parshall, Director of Special Crusade Projects of the New York State Division of the American Cancer Society, says Daffodil Day was started in New York in 1970 by the Erie County Unit. By 1973, 52 units in New York were participating. The Ohio, Pennsylvania, and Westchester Divisions have also conducted Daffodil Day with great success. Ms. Parshall says that the American Cancer Society is the largest seller of the daffodil in a short period of time.

The daffodils come packed 500 to a box in bunches of 10 in bud stage. They are kept, packed dry, in cool storage until the night before the sale, when they are taken out and put in warm water to open.

Bill Schrader will be chairman of the sale for the fifth year in Sandusky, Ohio. Bill says Ohio has been participating in Daffodil Day for six or eight years, and last year 485,000 blooms came into Ohio for the sale. The first year of the sale, blooms came from British Columbia, but in later years they've come from our Pacific Northwest. Once, when the weather failed to cooperate, blooms were flown in from Holland.

Through this Special Event, thousands of dollars have been raised to aid in the fight against cancer, making the daffodil, long the symbol of spring for gardeners, the symbol of hope for many others.

Rathowen daffodils



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TWIN-FLOWERED POETICUS

(Research into recorded instances of twin-bloom poeticus)

MEG YERGER, *Princess Anne, Maryland*

There's a double beauty whenever a swan
Swims on a lake with her double thereon.
From "Her Honeymoon" by Thomas Hood

So it seems with a twin-blooming poeticus flower—the one reflects the beauty of the other and both are lovelier for it. The trait of having two blooms to a scape is mentioned in several early writings.

F. W. Burbidge and J. G. Baker in *The Narcissus, Its History and Culture*, published in 1875, mentioned the multi-flowered nature of *Narcissus poeticus* Linn. They referred to an allusion by Virgil to what was "undoubtedly a species bearing one-flowered scapes, while more rarely two, three, and even four flowers were produced." A specimen of that species had been sent them by Peter Barr in 1874.

In the *Gardener's Chronicle*, Mr. Baker had written that in *N. poeticus* the scape was essentially single-flowered but generally there was a tendency to produce more than one flower as in *N. tazetta*. He noted that, near London, the typical plant produced one or very rarely two flowers in the latter part of April.

Peter Barr published in 1884 a catalogue which is a treasure trove of information about *Ye Narcissus or Daffodyl Flowre, and hys Roots*. In it he quoted the classification system devised by Mr. Baker for Group III of Narcissi which he called Parvicoronati which included "*N. poeticus*—1 to 2 flowered; white, with a purple or red edge to the crown." He gently scolded the Royal Horticultural Society for giving a certificate in Spring of 1884 to a group of two-flowered *N. poeticus* Ornatus since, as he said, "The growth of two flowers on a stem is common to all the Poeticus, early and late, but it is not constant."

Much later, in 1915, H. W. Pugsley in his monograph "*Narcissus poeticus* and Its Allies" referred to a two-flowered form sold by Messrs. Barr, which was probably propagated by bulb division from solitary individuals showing the same tendency. It was similar to a two-flowered Italian specimen in the British Herbarium Museum which also resembled the typical French *N. poeticus*.

About the same time as Peter Barr's booklet came out, there was published in 1885 a delightful catalogue by William Baylor Hartland who had an establishment for rare seeds and bulbs at Cork. He called his catalogue *The Original Little Book of Daffodils*. In the Poeticus Section, he referred to two distinct classes: the one flowering in Ireland the end of March and the first week of April; the other blooming in May and June—with the comment that the growth of two flowers on a stem was quite common to all this group.

A similar reference was made in *The Daffodil Handbook* published by The American Horticultural Society in 1966. On page 60, item 18, the typical poeticus plant was described in part as "flowers 1 or 2."

The American Daffodil Society publication *Handbook for Exhibiting and Judging Daffodils*, as revised by the centerfold in the March, 1978, *Daffodil Journal*, took note of the potential poeticus have for twin blooms in the description of Division 9—(Usually one flower to a stem . . .).

The members of the ADS Poeticus Round Robins recorded several two-bloom-to-a-stem poets.

Actaea—sometimes in Maryland

Acme—frequently in Illinois

Narrabri—in 1978 in Indiana

Nightingale—in 1978 in Indiana

Pentucket—in 1976 in Ohio

Perdita—in Ohio

Quetzal—scape from same bulb had two blooms two different years, was dug, moved, and again had two blooms to the stem in Maryland
Ornatus—once, but only once, in Illinois

Recurvus—two to a stem a few times but only on a few plants in a few seasons in Illinois; once in Maryland (bulb from Murray Evans); a great quantity always two to a stem, year after year, in Georgia; two blooms in 1978 in Indiana on a recurvus with broader segments than the Georgia one.

Shanach—one or the other of several plants had two blooms on a stem five different years in Maryland

Smyrna—two to the stem once in Maryland

Thomas Hardy—sometimes two to a stem in Indiana and Illinois

Some out-of-print catalogues listed certain poets as having two flowers to a stem.

Hermitage Gardens (Edwin Powell) 1944 listed Niantic 9 “frequently bears two flowers on tall stems. From Minuet . . .”

Daffodil Mart (George Heath) listed Acme 9 “usually two blooms to a stem.”

Kirby 1910 listed Twin Flower 9 “invariably bearing two pretty poeticus flowers on one stem.”

Friends from Northern Ireland added to the data about two-bloom poet scapes. Mr. Billy Toal of Belfast copied from the records of the RHS of Ireland Spring Show in Dublin, April, 1914, the following: “A twin-flowered poeticus, a sport from Homer, was shown by Mr. Lionel Richardson, and excited much interest as a flower of exceptional merit.” That note was written by Rev. McDuff Thompson, Judge. Mr. Richardson won an Award of Merit for his exhibit and it was the first time he had entered a show. According to Mr. Toal, he intended to register it, but never did. (It is possible it did not come two-headed again!)

Kate Reade of Carncairn Daffodils wrote that she found several stems of Quetzal with two flowers and one of them got a second prize at the late, late show in Omagh in 1979. Kate had a sensational two-bloom poet under number with the pet name “Frank’s Fancy” in her protective house. It was from bulbs given her by Sir Frank Harrison and met every visible and olfactory qualification possible for a poet except there was no immediate way to examine the bulb and seed pod.

Sir Frank Harrison of Ballydorn said that two-headedness came from *recurvus* influence.

With the thought that two heads are better than one, it is hoped that many poet enthusiasts will report their own observations—the longer the listing the more valuable the contribution to would-be hybridizers of multi-bloom cultivars! The poet Byron had the right idea—“... share it,—happiness was born a twin.”

DESCRIPTIONS OF THE TRUE TAZETTAS

WILLIAM R. P. WELCH, *Carmel Valley, California*

Photos by CHRIS WEBER



W. Welch

This is not meant to be an exhaustive study of the true tazettas, but rather a description of the varieties most likely to be found or those likely to be of the greatest value in breeding. Stem heights are not given for most varieties since they are so variable, but with any which are of normal size the stems are 12-18 or more inches tall. Those few that are of miniature or intermediate size are described accordingly. The number of flowers per stem indicated is for mature sized bulbs. Smaller bulbs will consequently have fewer, and bulbs that are of unusually large size due to being grown in optimum conditions can

often be expected to have many more flowers per stem than indicated and often secondary stems as well.

Hopefully this article will be useful in identifying the tazettas found in old gardens or available from commercial sources. Remember, however, that I am not dealing here with the poetaz (tazetta hybrids) but only with the pure-blooded tazettas.

I am always glad to assist in the identification of tazettas and anyone who has one or more tazettas to be identified is encouraged to send me a sample of each which I will do my best to identify and will report back to you when blooms appear. Bulbs received will be potted and carefully labelled, really a very simple process.

Foliage differs markedly between the various groups, as does their susceptibility or resistance to fungus diseases on the foliage. The rather bluish-green foliage of the Aureus and Chinese Sacred Lily groups is quite susceptible to foliage diseases in this wet-winter climate, whereas the deeper green foliage of the Grand Monarque and Grand Primo groups has a good resistance to foliage diseases. Paper White types have rather bluish foliage, but it is nearly as resistant as the Grand Monarque and Grand Primo types. Tazetta foliage is broad and heavy.

Appearances of the bulbs differ greatly among the varieties, but sometimes this has to do with culture and depth of planting, so it is only safe to say that China Lily types and Aureus types come without necks, while some Paper Whites come with long necks.

Tazetta seeds seem less prone to the dormancy of standard daffodils, however not all will germinate the first year as evidenced by the bed of several hundred seeds of Soleil d'Or. While many germinated last year, some are germinating vigorously now.

Now for the actual descriptions of the various varieties.

GRAND MONARQUE GROUP

(Perianth white, cup lemon-yellow)

GRAND MONARQUE—18–25 florets, $1\frac{1}{4}$ to $1\frac{1}{2}$ inches across. This occurs in many variations differing in shape of perianth segments and length of stigma (which is generally recessed). Clones differ in ability to set seed but are usually rather shy seeders. Pollen is generally fertile. The best forms are the largest flowered and most vigorous of all true tazettas. Grand Monarque is sometimes regarded as being slow to increase, however all Grand Monarques I have (including Les Hannibal's "true Grand Monarque") are good increasers. By comparison with Avalanche, bulb increase is somewhat slower. Cutflowers are excellent. Blooms are usually later than Avalanche and Compressus. Triploid.

AVALANCHE—18–25 florets, 1 to $1\frac{1}{4}$ inches across. This is a clone selected from Compressus, being a few weeks earlier to bloom and slightly more vigorous. Recessed stigma. Fertile pollen. Sets seed more freely than Grand Monarque but not a good seeder. Bulbs increase quickly. Produces excellent cutflowers. Flowers are very rounded in shape, with excellent form and substance. First blooms come in mid-October. Best distinguished from Grand Monarque by smaller floret size. Registered in 1955 by T. M. Dorrien Smith, but the selection was probably made twenty or more years earlier. If bulbs matching its description are found in old gardens they would predate its selection and must therefore be Compressus. Triploid.

COMPRESSUS—18–22+ florets, 1 to $1\frac{1}{4}$ inches across. Found in southern United States as well as Isles of Scilly. Often called Grand Monarque in error. Almost indistinguishable from Avalanche except for being later and slightly less vigorous, but still one of the best tazettas. Fertility same as for Avalanche. Triploid.

COMPRESSUS MINOR—8–10 florets, $\frac{3}{4}$ inch across. Slender plant, probably a diploid seedling of Compressus. Pollen appears fertile, but no seed has been set by this plant. This appears occasionally as a rogue in stocks of tazettas from Scilly Isles. It seems rather worthless. Blooms at the same time as Compressus or slightly later. Stigma extends to the height of the upper anthers. Plant not small enough to be classed as a miniature.

All members of this group with which I am familiar have broad, rounded perianth segments and excellent substance. This includes the cups which are also of thick, stiff substance. In my own experiences, the most vigorous and floriferous tazettas are in this group. I would describe both cup color and fragrance as being intermediate between the Grand Primo group and the Chinese Sacred Lily group. No double mutations have occurred in this group to my knowledge.

CHINESE SACRED LILY GROUP

(Perianth white, cup orange-yellow)

CHINESE SACRED LILY (Chinese Grand Emperor)—8–11 florets, $1\frac{1}{4}$ to $1\frac{1}{2}$ inches across. Begins to bloom in mid-October if bulbs are watered starting in August. Most bloom in November but some refuse to bloom until December/January suggesting that clone may be a sport. All other clones appear identical, including those received from Kashmir (*N. orientalis*), from Lebanon (*N. tazetta*), and from the Scilly Isles (*N. cypri*). I believe this "China Lily," which botanically is referred to as

N. tazetta var. *chinensis*, is identical to the common triploid *N. tazetta* which is both cultivated and naturalized throughout the Mediterranean region. Over probably the last thousand years it has been brought eastwards by way of Iran, Afghanistan, and India to China and Japan; then in the last century Chinese immigrants brought it to California. All clones I have appear to be sterile, or nearly so, as seed parents. However, a percentage of the pollen is fertile, particularly if the weather is warm. I have heard of an all white mutation found in Japan, but as yet have been unable to get any bulbs. Stigma length in the Chinese Sacred Lily always extends to the height of the upper anthers. The Chinese Sacred Lily readily produces double mutations.

DOUBLE CHINESE SACRED LILY (Double Roman)—8-11 florets, $1\frac{1}{4}$ to $1\frac{1}{2}$ inches across. Some authors have asserted that the Double Roman has more regularly arranged doubling, but I have had both Double Roman and Double Chinese from many different sources and have never seen any constant differences among them. All bloom in October and November if started in August. Pollen, apparently as good as that produced by the single type, is sometimes found among the petaloids. A stigma is never present, except in a mutation which first appeared last year in which the doubling was confined to the cup forming a neat, tight ball. From each floret appeared a normal stigma standing above the doubling. Pollen was plentifully produced. If this doubling remains constant, the plant may be worthy of a name. The normal doubles are so fully doubled that they appear distorted. Erlicheer's form is incomparably better.

CANALICULATUS—8-11+ florets, $\frac{1}{2}$ to $\frac{3}{4}$ inch across. More cold-hardy than many tazettas, it comes from near Mentone in southern France, probably from higher altitudes than most tazettas. Produces abundant fertile pollen and sets seed (if you can ever get it to bloom, that is). I have no recommendations to offer as to how to make it bloom, since I can't! Each person who is successful with it seems to have a different explanation for success. Further advice would be helpful. Foliage is quite bluish in color. Triploid. Generally this looks like it is a miniature version of the Chinese Sacred Lily except that its perianth is somewhat more reflexed. In most respects it is only about $\frac{1}{4}$ the size of the China Lily. This plant is known as a rapid multiplier, exceeding in rate of increase many other tazettas. In contrast to the China Lily, Canaliculatus never produces double mutations so far as I know. The Canaliculatus I have seen all seem to belong to the same clone; however the fact that some individuals have reported greatest success with plants found in old gardens raises the possibility that other clones were once available. Anyone who thinks they may have a different form of Canaliculatus is encouraged to send me a bulb to try. I'm sure it would be very valuable in producing other tazetta miniatures. Late March blooming.

ODORATUS—8-11+ florets, $\frac{3}{4}$ inch across. Originally found by Alec Gray in the Isles of Scilly, this plant is similar in appearance to Canaliculatus but in all respects is larger. Unfortunately I have also found it to be rather shy to bloom. One notable difference from Canaliculatus is that Odoratus has ragged-edged cups. I would describe Odoratus as an intermediate, not a miniature. Stems are about twelve inches tall. This plant has fertile pollen and probably also yields seed. Like most others in this group, it is a triploid. February blooming. It is probably not as cold-hardy as Canaliculatus, but not as fast to increase either.

GLORIOSUS—6-8+ florets, 1 to $1\frac{1}{4}$ inches across. I do not have this one, and I do not know of anyone outside of the United Kingdom who has it.

In contrast to the others in this group, *Gloriosus* has an orange cup. It is a diploid, and as would be expected, it is smaller than the China Lily in all respects. Barbara Fry says it is the most fertile white-perianthed tazetta with which she has worked. Certainly most, if not all, of the poetaz with white perianths and orange cups are bred from it. If any readers have *Gloriosus* (not to be confused with poetaz *Gloriosus*), I would really appreciate receiving a bulb to use in my hybridizing work. The excellent cultivars bred from it prove its value for hybridizing.

I have often wondered, and it has also been suggested that, if I were to cross Paper White with *Soleil d'Or* if I might get some seedlings matching the coloration of those described above. All that would be necessary is for seedlings to inherit the shape and cup color of *Soleil d'Or*, with the perianth color of Paper White. One of my priorities this year is to make this cross in quantity and find out what can be done. It appears that there are very few white tazettas with orange-yellow cups still in existence. All that I have described here are blessed with a fragrance I think is rather similar to orange blossoms. In any event I think it is the best fragrance of any flowers with which I am familiar. The pale-yellow and orange Autumn Sol also has this fragrance. Many of the poetaz derived from *Gloriosus* have inherited this fragrance at least in part.

Efforts to hybridize within this group have been hampered in part by the fact that so few are available. I have heard that there are others of this group in the southern United States which are supposed to be rather smaller than the China Lily, but as yet I have been unable to get them.

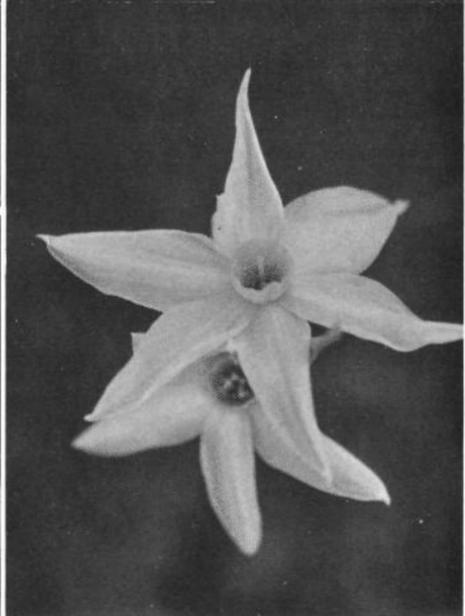
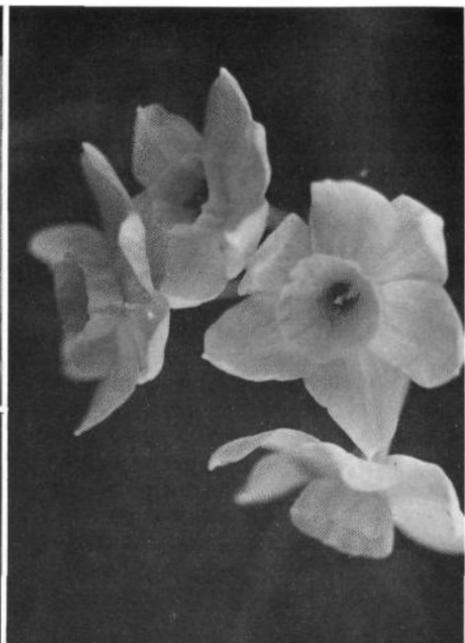
All varieties described above have broad perianth segments of good substance. Segments on *Canaliculatus* are somewhat more pointed but I would not go so far as to say that it is a star-like bloom.

GRAND PRIMO GROUP

(White perianth with pale yellow or creamy cups)

GRAND PRIMO—13–25 florets, 1 to 1¼ inches across. This has a pale yellow cup which tends to fade after it has been open a few days. Perianth substance is not as good as *Avalanche* or *Grand Monarque*, but is still sufficient to produce useful outflowers. It produces copious quantities of pollen which always appears to be of excellent quality but does not often produce results. The very few seeds I have ever had out of thousands of *Grand Primo* have never germinated. Triploid. It is a prolific bloomer and increaser, and normally blooms December to February. Perianth segments are rounded in shape. Stigma extends to the height of the upper anthers. One of the commonest tazettas, it is found in every country where tazettas have been introduced from the Isles of Scilly. A clone evidently not prone to mutations, the variations that I have seen being distinct enough that they must be of seedling origin.

ERLICHEER—13–16 florets, 1 to 1¼ inches across. I am quite certain that this is a double mutation of *Grand Primo*. I am well aware of the article by Jean Stevens of New Zealand which appeared in one of the *Daffodil and Tulip Yearbooks* several years ago, in which she offered convincing evidence that *Erlicheer* is a double sport of *White Pearl*. What this means of course, is that what she knew as *White Pearl*, I know as *Grand Primo*. In New Zealand, *Grand Primo* also sometimes goes under the name *French Monarque*. I have had *White Pearl* from several sources, but none of them could possibly be the single progenitor of *Erlicheer*. By contrast, when *Erlicheer* reverts to the single form, as approximately one in 10,000 bulbs will do, there you have *Grand Primo*! The two reversions I have



Left: top, Early Grand Primo; center, Grand Primo, paler version (note cup curls inward); bottom, Chinese Sacred Lily. Right: top, Grand Primo (note flared cup); bottom, Stars (Minor Monarque).

found in my own stock both had slightly shorter stigmas than Grand Primo but were otherwise identical. Erlicheer sometimes produces pollen at the tips of its petaloids but I am unsure at this point whether or not this is fertile. It is surely worth a try, though some seasons no pollen is produced so one must wait for the right opportunity. One distinction that Erlicheer has in contrast to Grand Primo is that it blooms later, often not until February-March. It is too soon yet to see how the reversions behave. In my experience, Erlicheer is a misnomer since it is anything but early compared to most other tazettas. Its florets tend to be slightly larger from tip to tip than Grand Primo, but this may simply be an effect of the doubling. In fact I am quite sure this is the case since the reversions have returned to the Grand Primo size.

WHITE PEARL—12-13+ florets, 1 inch across. This occurs in old gardens in the southeastern United States. The perianth segments are more pointed than Grand Primo, however substance is just as good, in spite of what appears to be a slight Paper White influence. The cup is creamy in color, paler than Grand Primo. I believe it blooms slightly after Grand Primo. I am not sure whether it sets seed, but pollen does appear fertile. The plant is quite vigorous. I am not entirely sure what I have here as White Pearl is the same thing as those commonly called White Pearl or not. I guess I need to try them from more sources. I have read that they grow very large and vigorously in Georgia. Some of these White Pearls may be the following. Triploid.

POLLY'S PEARL—12-18 florets, $1\frac{1}{4}$ to $1\frac{1}{2}$ inches across. My first ones came from Polly Anderson of LaCanada, but subsequently I have collected them near here. Also I have received them from the southern states under the name Seventeen Sisters. Substance is quite good, vigor and flower production are excellent. Cups are creamy, quickly fading to white. Stigma extends to the height of the upper anthers. Pollen is fertile, and seed production is quite good but unfortunately most seeds fail to germinate and a goodly portion of them are already rotten at maturity. This plant is significantly bigger than Grand Primo, in many respects it is like an all white Grand Monarque. It blooms just after Grand Primo. Perianth segments are rounded in shape. Triploid.

EARLY GRAND PRIMO—12-15 florets, 1 to $1\frac{1}{4}$ inches across. This plant produces foliage very early in the autumn, with flowers often coming by the end of November. Appearance and color are very much like Grand Primo except that perianth segments are slightly more pointed. Seeds are occasionally produced, but have not germinated. Pollen appears fertile. After blooming, foliage grows often to a length of three feet, and leaves are very plentifully produced. This is the most rapid increasing tazetta I have. The plant puts so much energy into bulb division that blooms only appear in alternate years. Bulbs split into many small offsets. Sometimes occurs mixed in stocks of Grand Primo. Triploid.

SCILLY WHITE—10+ florets, $1\frac{1}{4}$ to $1\frac{1}{2}$ inches across. Recessed stigma. Rarely seeds, but pollen is apparently fertile. Most Scilly Whites grown in this country seem to be Polly's Pearl instead. February-March blooming, the true Scilly White differs from Polly's Pearl in not being nearly as vigorous and in having a recessed stigma, as well as being much more reluctant to set seed. Stems are often too short to make suitable cutflowers. Scilly White is successful in the Isles of Scilly, but here it is not one of the best. Triploid.

MINOR MONARQUE—8-13 florets, $1\frac{1}{4}$ to $1\frac{1}{2}$ inches across. Distinct from

all others in this group by having very narrow perianth segments (even narrower than Paper White). Like Paper White, flowers are of poor substance. Sometimes these are called *N. italicus*. Size and vigor of mine seem to suggest they are a triploid derived from crossing Paper White or some poor type with some other member of this group. Seeds are never produced, and pollen looks abortive. Luckily it is not worth breeding from anyway. Its only good characteristic is its great vigor and earliness, often blooming in October and continuing for several months. Bulbs are even more resistant to rotting than are other tazettas. These have roots year around, not requiring the month of dormancy that other tazettas require. I have read that the *N. italicus* on the French Riviera set seed but they are the true *N. italicus* while these Minor Monarques are hybrids. Minor Monarque also goes by the name Stars, or is called Straws in the Isles of Scilly. I have selected a clone with somewhat broader perianth segments, better substance, and even greater vigor, which I call Super Stars. It may have some value. It is probably a sport. One good thing can be said about both forms of Minor Monarque which is that they are the most virus-resistant tazettas. To those particularly concerned over virus, this is certainly an important characteristic. If only the shape of the flowers on this plant could be improved then an excellent type would result.

Members of this group often receive the name Grand Monarque, but the clear-cut way for anyone to tell the difference between members of the two groups is to look at the cups. Cups in the Grand Primo groups are of a very pale yellow whereas members of the Grand Monarque group always have cups that are as deep in color as that of a ripe lemon. If in doubt nevertheless, your best guess is to note that Grand Primos increase faster than Grand Monarques and are therefore more plentiful and widely distributed—so what you have is probably a type of Grand Primo. Grand Monarques do not fade out.

PAPER WHITE GROUP

PAPER WHITE (*N. tazetta* subsp. *papyraceus*)—15–20 florets, 1 to 1¼ inches across. Extremely variable in perianth shape, substance, fragrance, season of bloom, vigor, etc. Pollen always appears fertile, but there is a lack of evidence as to how often it really is. Paper Whites are reluctant to set seed from pollen of other types of daffodils, however if pollinated with other tazettas or selfed, seed production is quite good. The best forms of Paper White usually receive the name Paper White Grandiflora. Paper Whites increase well and grow vigorously but some types offered in the trade are no good. Paper Whites are always rather starry in shape, but some are overly so, and of very poor substance. The first Paper Whites bloom here in October, but most wait until November, December, or January.

PAPER WHITE MINOR (*N. tazetta* subsp. *panizzianus*)—10–12 florets, ¾ to 1 inch across. Just a small version of Paper White, an intermediate sized plant which would be useful where Paper White is found to be too large. I have one type of *N. t. panizzianus* collected in Andalusia in southern Spain which has rather broad perianth segments and good substance, grows quite vigorously, and sets seed freely. I have just a small clump as yet, but it should be very useful for hybridizing work. December blooming.

N. t. canariensis—12–16 florets, ¾ inch across. Similar to the Andalusian *panizzianus*, but with slightly smaller flowers. Seeds well and produces

plenty of fertile pollen. December blooming.

N. t. pachybolbus—This will be my first year of having authenticated bulbs of this, but I do expect it will rather match the description of *N. canariensis*. Small, rounded flowers, blooming early.

AUREUS GROUP

(yellow perianth)

SOLEIL D'OR—12–17 florets, 1 to 1-1/4 inches across. Stigma extends to base of the upper anthers. Perianth is rich yellow, cup orange. Triploid. December blooming. It is not as early as many other tazettas. In my experience, it has good vigor and blooms, in spite of the many viruses with which it is infected. It sets seed freely if nights are warm and daytime temperatures are over 70 degrees. Pollen is also especially fertile under these conditions. Seeds have germinated well in my experience, though others have found both seed set and germination to be poor. These true Soleil d'Or are plentiful in the Isles of Scilly, from which they have been introduced into New Zealand and Australia. Some of the Soleil d'Or imported into this country came from southern France and in many cases this means they are French Sol or other rotten types instead. Once you have seen the true Soleil d'Or, you will remember it and want no other yellow. There is a variant (found mixed in with some Soleil d'Or) which consists of one bulb that blooms about one month earlier and sets seed more easily under the normal wintertime conditions and has pollen which is also better under these conditions. It has a recessed stigma and the cup is not as deep in color as the true Soleil d'Or. It is similar, but not identical, to Newton.

NEWTON—8–10 florets, 1 to 1-1/4 inches across. Recessed stigma. Though not shaped quite as well as Soleil d'Or nor as rich in color, it is several weeks earlier to bloom. Sets seed freely and has very fertile pollen. My best seed set on Soleil d'Or has been from pollen of Newton.

AUTUMN SOL—Pale yellow perianth fading to creamy white, florets 1 inch across, several on a stem. It has the same fragrance as China Lily, in contrast to the typical Sol fragrance possessed by others in this group. It will bloom as early as late August-early September here in California, though sometimes not until November. Sets seed and pollen is fertile. According to Barbara Fry, it breeds quite true from seed. It is not a very vigorous plant, but not small enough to be a miniature. I do not think Autumn Sol has much value as a garden plant but it is excellent for breeding.

AUREUS (*N. tazetta* subsp. *aureus*)—8–10 florets, 3/4 to 1 inch across. This is small like the foregoing, but more vigorous, December blooming, and very fertile. Though somewhat variable, it generally has a yellow perianth and deep yellow cup. This is the original species type from which the other yellows have originated.

LATE SOL—8–10 florets, 1 to 1-1/4 inches across. Usually blooms just after Soleil d'Or or else at the same time. This is the most fertile tazetta I grow, yielding fifty or more seeds per pod, setting seed to its own pollen even in wet and cloudy weather. Seed production is equally good when pollinated by Soleil d'Or. Germination is excellent. Late Sol has a light yellow perianth with rather broad orange cup. Stigma is readily accessible. It blooms only in alternate years, presumably since so much energy is expended in seed production.

FRENCH SOL—8-10 florets, 1 inch across. Paler in all respects than Soleil d'Or its perianth segments are narrower and more pointed. A self-yellow flower, not vigorous nor otherwise useful. Fertile.

MISCELLANEOUS SOLS—There are many different yellows to be found and I suppose that each one does have some value, others are quite good. Bathurst and Northland are grown in New Zealand, and are later blooming than Soleil d'Or. Further experience should enable me to better understand their differences.

In conclusion, many of you will (hopefully) want to try bulbs of those I've described. I will be selling bulbs in the future, after my stocks have become sufficiently large. When bulbs are available, they will be advertised in the *Journal*. At this point I am in the business of selling cutflowers only, in wholesale quantities.

In addition to the true tazettas, many poetaz, jonquilla species and hybrids, and standard daffodils are being grown for cutflower and hybridizing purposes.

Hybridizing tazettas is the most interesting part of my work and the success achieved by Dr. Harold Koopowitz of the University of California and Barbara Fry of the Rosewarne Experimental Station in England has led me to be optimistic about the future of tazetta breeding. Here lies a great field of opportunity.

TO SHOW OR NOT TO SHOW

(from the *Northeast Region Newsletter*, March, 1979)

ADS members are sometimes accused—generally by disgruntled ex-members—of devoting more attention to showing than to growing daffodils, and of caring more for ribbons than for flowers. Stuff and nonsense, and I won't argue the accusation here, save for the encouraging reminder that participating in shows can prove tremendously instructive, with implications for the health and welfare of all your daffodils, not just the pampered few that see the artificial light of the show bench. If you are not a regular exhibitor, and especially if you are new to the serious growing of daffodils, make this the year to enter some of your flowers in competition. Show preparations are invariably hectic, but there will always be someone there willing to take the time to see that a novice exhibitor gets started on the right foot. (It is perfectly all right to feel you will need help with the new classification schedule, but do, please, take to the show only blooms of cultivars whose names you know.)

Past issues of your *ADS Journal* will give you plenty of tips on picking, preparing, and staging your flowers. I'll content myself with one suggestion so obvious and so easy to take care of that it should not require mention; yet veteran exhibitors as well as beginners occasionally overlook it—to their sorrow, since judges *never* overlook it: make sure the blooms you enter are *clean*. Front and back, inside and out, no dirt specks, no mud-stains, no loose pollen lying in the cup. A moistened Q-tip is usually all the equipment you need—that and a sharp eye to spot where the Q-tip needs to be applied. Of course you'll have much less cleaning to do if your daffodils grow in neatly mulched beds (mine don't), but even so you'll find some touching-up to be done.

—RICHARD EZELL, *Chambersburg, Pennsylvania*

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COMPACTED DAFFODILS

LOUISE FORT HARDISON, *Nashville, Tennessee*

It was a glorious Tennessee fall day: brilliant sun, a soft breeze, birds singing, horses grazing, the tractor running, four Pekingese, a Labrador, and an Irish setter following me. A perfect daffodil day. The sheer joy of planting healthy, fat, brown bulbs rivals the delight of the blooming season.

At least these were my feelings when Glenn North, my yard/house man and I dipped the 2 Y-Y's and 2 Y-P's in Benlate. Each cultivar was bagged in an onion sack with an attached twelve-inch metal label. We carried the all yellow bulbs into the fenced area to plant them, leaving the pink-cupped ones draining beside the garbage can filled with the milky liquid.

Having finished one bed, I returned to get the 2 Y-P's. They were gone. I searched the garage and the daffodil storage room. No luck. I called Glenn and asked if he had moved them. He answered no.

Suddenly, a horrifying realization came to me. With all the other farm sounds, I had heard the garbage truck. There was no question in my mind, the garbage man must have picked the bulbs up. Pink Mink, Brindisi, Undertone, Pastel Gem, Widgeon, and Highlite—it was a devastating loss; several were irreplaceable!!

I frantically sent Glenn off in search of the truck. I called the office and explained the situation as logically as possible. The girl on the answering service did not know the truck route, but would check and call back.

Glenn called from the collection headquarters. They had not located the truck, but suggested he go and wait at the Bordeau dump in the hope of intercepting the large compactor truck when it arrived.

I became more enraged by the minute that the garbage man had picked up my labeled sacks of bulbs from the ground next to the dip can which he did not empty, and had not emptied for several weeks. The can and sacks were twelve feet from the regular four garbage cans. How could he have taken my prize bulbs? Thus the long frustrating afternoon passed.

At 5:00 p.m., the answering service girl called. I was told the truck had not unloaded, and was at headquarters, but was going to the thermal burning plant at 6:00 a.m. There was no way I could retrieve the bulbs.

My immediate reaction was, "What do you mean? Glenn has waited all afternoon at the dump as instructed at your headquarters. You are responsible for taking these bulbs off the ground. These bulbs are irreplaceable. They are worth over \$300.00."

After this tirade, she gave me the main office number and told me to ask for John, the driver. To John I repeated the above. He said Bordeau was all the way across town, over an hour's drive, and he was going to the thermal plant. I reiterated my statement that they were responsible.

He said, "I'll get the boss."

A voice said, "Hello."

"Mr. Sherrill, I'm Mrs. Hardison. Glenn North works for me. I understand you are a Deacon in his church."

He answered, "No, Mrs. Hardison, that is my father. I handle the garbage pickup for him."

Once again, I reiterated the unbelievable loss. There was a long pause and then he said, "If Glenn will be here at 6:00 a.m., we will let him follow the truck to the Bordeau dump." I thanked him profusely for his help and interest.

Joy!! Happiness!! There was a glimmer of hope. Maybe we would locate some of the bulbs. I contacted Glenn. He said he would be glad to go to the dump with the truck at 6:00 a.m. I suggested he take friends, rakes, shovels, and gloves.

At 8:30 a.m. the next morning Glenn called. "I found all the sacks. Some bulbs are squashed and some labels ruined, but I found them. In fact, I found one you didn't even have listed. It is Butterscotch 2 Y-Y. When I saw the first red sack fall out as he dumped the load, I knew they were there. We searched and searched. I'll have nightmares for twenty years going through all that stuff, but I found them all."

All I could say was, "Bless you!"

The bulbs were resoaked in Benlate. Each bulb was planted with notations such as "squashed," "much of the basal plate gone," "bruised," "cut half way through," "o.k.," or "offset fine."

Come spring, I'll report on the success of our operation to save the garbage compacted daffodil bulbs.

MINIATURE DAFFODILS ARE FASCINATING

FRAN LEWIS, *North, Virginia*

(Reprinted by permission from the *Garden Club of Virginia Journal*, Sept.-Oct. 1979)

Miniature daffodils offer today's gardener maximum pleasure with minimum space and effort. Small wonder the little ones are becoming increasingly popular with flower lovers. Not only do they blend well with other plants in the border but are adaptable in rock gardens, charming in small arrangements, and bring an earlier touch of beauty to the daffodil season.

They will grow well in most good garden soils which are lean and slightly acid. We have experienced good results without fertilizing. However, if you feel you must, use a low-nitrogen product sparingly and infrequently. Good drainage is necessary, with the exception of *N. cyclamineus* which prefers a moist situation. Many growers use raised beds for better drainage. They do require moisture during their growing season but a good baking in summer.

Bulbs are smaller than those of standards so depth of planting is less. For the very small ones, one and a half to two inches of soil above the top of the bulb is recommended; for the larger ones, about three inches on top. If planted too shallowly, some have a tendency to split into smaller bulblets.

When planted in the open ground, most will perform satisfactorily but the smaller ones are sometimes difficult to locate later. Clay pots plunged in the open ground are subject to freezing and thawing. This sometimes causes the contents to heave, frequently destroying the bulbs. We prefer plastic berry baskets. Their lattices and openings allow room for root growth, moisture, and good drainage. If they are thriving, they may be left in the same location for several years.

Only two divisions are not represented on the American Daffodil Society Approved List of Miniatures. So far we have no miniature poets (Division 9) nor split-coronas (Division 11). Colors vary but the only miniature daffodil with pink coloring is Flomay 7 W-WWP. Gipsy Queen 1 Y-WWY is the lone reverse bicolor.

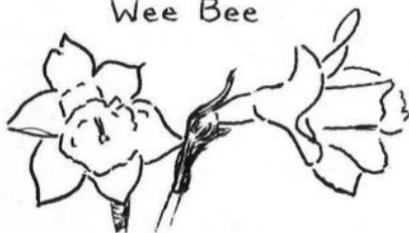
Within Division 10, the species and wild forms present a variety of forms from tiny trumpet, *N. asturiensis* (formerly called *N. minimus*), to the unusual bulbocodiums or hoop petticoats. Perhaps the best known triandrus form is *N. triandrus albus* (Angel's Tears), with milk-white pendent blooms. Jaunty *N. cyclamineus* has sweptback wings and a long, narrow yellow trumpet. *N. watieri*, a pure white gem, has a solitary bloom. There are others, all interesting, but as a group, the species and wild forms are not generally as reliable as the cultivated hybrids and more erratic in their growing and blooming habits.

If you have never grown miniatures, you're missing an intriguing daffodil experience. They may at times challenge and frustrate but they will also charm and fascinate. Why not select a few from the following as dependable starters for garden, show or sheer enjoyment? All are listed in various commercial catalogues for 1979.

Small Talk 1 Y-Y	Hawera 5 Y-Y	Demure 7 W-Y
Wee Bee 1 Y-Y	Jumblie 6 Y-O	Minnow 8 W-Y
Little Beauty 1 W-Y	Tete-a-Tete 6 Y-O	<i>bulbocodium</i>
Xit 3 W-W	Sundial 7 Y-Y	<i>conspicuus</i> 10 Y-Y
Yellow Xit 3 W-Y	Chit Chat 7 Y-Y	<i>triandrus albus</i> 10 W-W
April Tears 5 Y-Y	Pixie's Sister 7 Y-Y	<i>ruplicola</i> 10 Y-Y

Illustration by Frances Armstrong.

Wee Bee



THE PRISONER

From winter's bonds
I am set free;
The spring in joy
I run to see!

I, awed, enchanted stand
Among the golden frills;
Again I am a prisoner,
The prisoner of daffodils!

—CHARLES APPLIGATE

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A LOOK AT THE PAST

TOM D. THROCKMORTON, *Des Moines, Iowa*

Earlier this summer my wife, Jean, and I were spending a few days in England's lovely Lake District. We were staying at a fabulous hotel on the eastern shore of Lake Windermere, looking down on the deep blue lake and the mauve mountains on the far shore. In wandering about, we found ourselves just a few miles from Lake Grasmere and William Wordsworth's Dove Cottage.

You will remember his most famous poem which began: "I wandered lonely as a cloud." This was published in 1807 and revised in 1815. But it is of special interest that William, together with his sister, Dorothy, spent his happiest and most productive years at Grasmere from about 1798 to 1802. There they lived in the attractive and modest Dove Cottage: William hiked, traded conversation with other budding poets such as Coleridge, and wrote and re-wrote his verses; Dorothy was not only housekeeper and companion, but also "kept a journal." A journal, a rather elaborate diary, was fashionable in those days.

Dorothy wrote well, was a keen observer, and her journals have outlived her. I am fascinated by the following passage from her journal on Thursday, April 15, 1802, which certainly provided the background to William Wordsworth's poem, "The Daffodils."

Thursday 15th. It was a threatening misty morning—but mild. We set off after dinner from Eusemere. Mrs. Clarkson went a short way with us but turned back. The wind was furious and we thought we must have returned. We first rested in the large Boat-house, then under a furze Bush opposite Mr. Clarkson's. Saw the plough going in the field. The wind seized our breath the Lake was rough. There was a Boat by itself floating in the middle of the Bay below Water Millock. We rested again in the Water Millock Lane. The hawthorns are black and green, the birches here and there greenish but there is yet more of purple to be seen on the Twigs. We got over into a field to avoid some cows—people working, a few primroses by the roadside, wood-sorrel flower, the anemone, scentless violets, strawberries, and that starry yellow flower which Mrs. C. calls pile wort. When we were in the woods beyond Gowbarrow park we saw a few daffodils close to the water side. We fancied that the lake had floated the seeds ashore and floated[?] that the little colony had so sprung up. But as we went along there were more and yet more and at last under the boughs of the trees, we saw that there was a long belt of them the end we did not see along the shore, about the breadth of a country turnpike road. I never saw daffodils to [*sic*] beautiful they grew among the mossy stones about and about them, some rested their heads upon these stones as on a pillow for weariness and the rest tossed and reeled and danced and seemed as if they verily laughed with the wind that blew upon them over the lake, they looked so gay ever glancing ever changing. This wind blew directly over the lake to them. There was here and there a little knot and a few stragglers a few yards higher up but they were so few as not to disturb the simplicity and unity and life of that one busy highway.

We rested again and again. The Bays were stormy, and we heard the waves at different distances and in the middle of the water like the sea.

THE DAFFODILS*

I wandered lonely as a Cloud
That floats on high o'er Vales and Hills,
When all at once I saw a crowd,
A host of golden Daffodils;
Beside the Lake, beneath the trees,
Fluttering and dancing in the breeze.

Continuous as the stars that shine
And twinkle on the milky way,
They stretched in never-ending line
Along the margin of a bay:
Ten thousand saw I at a glance,
Tossing their heads in sprightly dance.

The waves beside them danced, but they
Out-did the sparkling waves in glee:—
A Poet could not but be gay
In such a jocund company:
I gazed—and gazed—but little thought
What wealth the shew to me had brought:

For oft when on my couch I lie
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude,
And then my heart with pleasure fills,
And dances with the Daffodils.

—William Wordsworth

*1815 version

Engleheart Cup Winner-1971, 1973, 1975, 1976, 1977, 1978, & 1979

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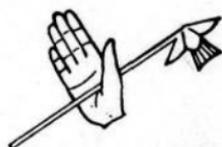
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DAFFODIL DISEASES AND PESTS: IV VIRUSES AND VIRUS DISEASES

THEODORE E. SNAZELLE, PH.D.
Tennessee State University, Nashville

"The infection is not caused by microbes, but
by a *contagium vivum fluidum*." M. W. Beijerinck (1898)

During the latter years of the past century, considerable attention was given to a disease in tobacco which was called "mosaic." In 1886, Adolph Mayer demonstrated the infectious nature of the etiological agent which causes tobacco mosaic by taking sap from diseased tobacco plants and inoculating it into healthy plants which subsequently developed the mosaic symptom (1). Mayer erroneously concluded that the cause of tobacco mosaic was a bacterium despite his not being able to isolate such a microbe. In 1890, Dimitrii Ivanowski demonstrated that the etiological agent of tobacco mosaic could pass through a bacteria-proof filter (Chamberland filter candle) and still induce the mosaic disease of tobacco. Despite this observation of the filterability of the tobacco mosaic agent, Ivanowski, like Mayer before him, concluded incorrectly that tobacco mosaic was caused by a bacterium. Finally, in 1898, M.W. Beijerinck (Figure 1) demonstrated again the filterability of the tobacco mosaic etiological agent through a bacteria-proof filter and concluded that tobacco mosaic was caused by a *contagium vivum fluidum*, i.e. a contagious living fluid. This conclusion was significant because it suggested that tobacco mosaic was not caused by a bacterium but by something more novel. Interestingly, in the same year of Beijerinck's work with tobacco mosaic, Loeffler and Frosch also demonstrated that the etiological agent of foot and mouth disease of cattle could be passed through a bacteria-proof filter (2). Thus, the field of virology was begun.

WHAT IS A VIRUS?

A simple definition for a virus is that it is an infectious macromolecule which replicates (reproduces) itself only inside a living cell. Although viruses are sometimes thought of as obligate, intracellular parasites, the term parasite is usually reserved for etiological agents which are cellular or multicellular in nature, not subcellular as are the viruses, and which are thought of as living organisms. However, the viruses are usually not considered to be living unless the only criterion for living is the ability to reproduce. Nonetheless, the reference to a virus as an obligate, intracellular parasite is convenient if one remembers that this usage simply means that the virus is obligated to an intracellular (within the cell) existence and can not be cultured outside of the living cell.

Virion is the term used for a single virus particle. A virion consists of two parts: 1) a nucleic acid, usually ribonucleic acid (RNA), which serves as the genome or genetic material of the virion, and 2) the capsid which is a protein coat which encloses the nucleic acid. The part of the virion which initiates infection in a healthy plant is the nucleic acid whereas the capsid merely serves to protect the nucleic acid from destruction when the virion is in the extracellular (outside of the cell) state.

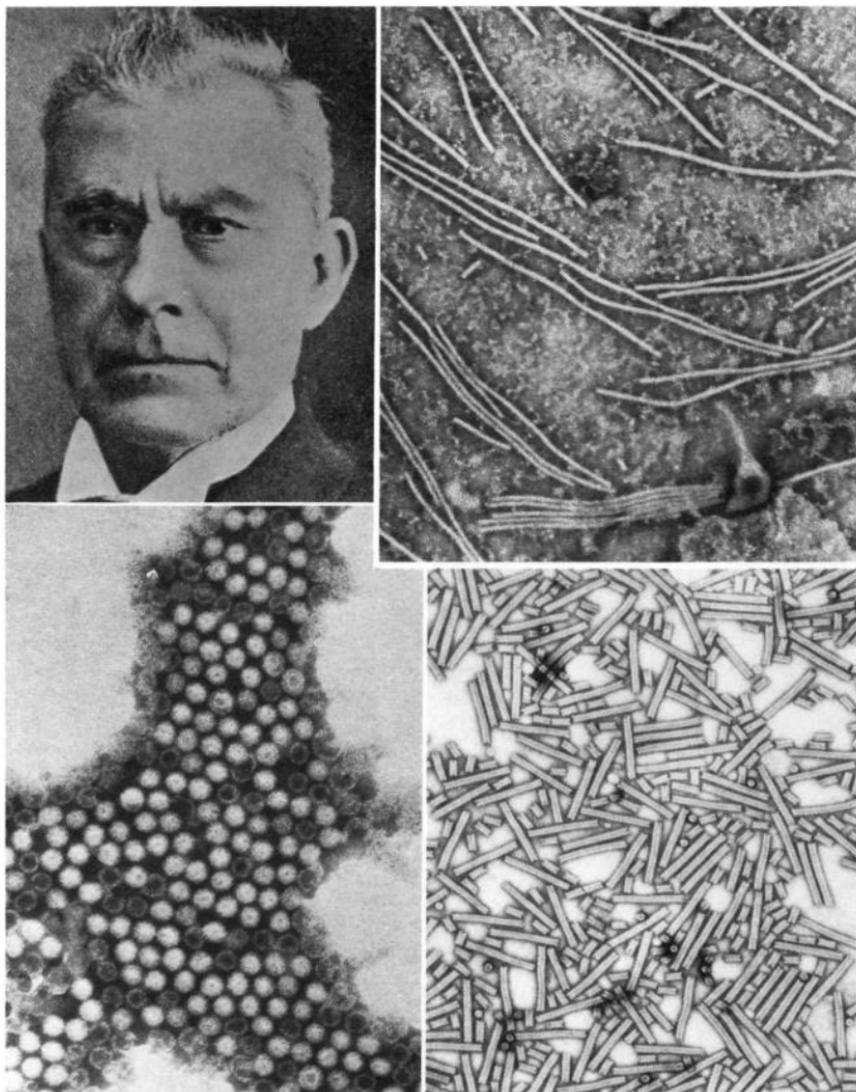


Figure 1, top left:— M. W. Beijerinck (1). Photograph used by permission of the American Phytopathological Society.)

Figure 2, top right:— Electronmicrograph of Narcissus Mosaic Virus. (Used by permission of Dr. A. A. Brunt, Glasshouse Crops Research Institute, England.)

Figure 3, bottom left:— Electronmicrograph of Narcissus Tip Necrosis Virus. (Used by permission of Dr. A. A. Brunt, Glasshouse Crops Research Institute, England.)

Figure 4, bottom right: Electronmicrograph of Tobacco Rattle Virus. (Furnished by Dr. R. M. Lister, Purdue University.)

Plant virus virions which infect narcissus have several capsid shapes or forms: 1) the isometric or spherical form, and 2) the helical form. Two types of helical forms are the filamentous where the virion is flexuous, and the rod-shaped where the virion is rigid. Exemplary of the isometric form is narcissus tip necrosis virus (Figure 3) whereas narcissus mosaic virus (Figure 2) is representative of the filamentous form. Tobacco rattle virus is an example of a virion which is rod-shaped (Figure 4). The capsid of all virions is comprised of protein subunits.

Recall that plant viruses are named according to the plant infected and the symptoms caused, e.g. narcissus yellow stripe virus, and that an abbreviation for the virus is commonly used which is derived from the first letter of each word in the virus name, e.g. NYSV for narcissus yellow stripe virus (3).

NARCISSUS VIRUSES

Throughout the past sixteen years, viruses infecting narcissus have received considerable attention in daffodil literature (4,5,6). It is interesting to note that the first edition of *The Daffodil Journal* contained an article by Harold S. King on daffodil viruses (4). At the time of this writing, seventeen different viruses have been described which naturally infect narcissus (2,5,6,7,8,9,10). Of these seventeen viruses, nine have isometric particles or virions and eight have filamentous or rod-shaped particles or virions (Table 1). Five of these viruses (jonquil mild mosaic, narcissus degeneration virus, narcissus yellow stripe virus, narcissus white streak virus, and narcissus tip necrosis) are known to occur only in narcissus (7). Narcissus mosaic virus is known to naturally occur in both narcissus and nerine whereas narcissus latent virus infects narcissus, nerine, and bulbous iris (7). Carnation latent virus has been found only in the cultivar Grand Soleil d'Or (10) and has only a limited host range (2). Tobacco rattle virus, which was first isolated from narcissus in Holland, has also been found infecting a number of other plant species (5,8). The remaining eight narcissus virus (arabis mosaic virus, broad bean wilt virus, cucumber mosaic virus, raspberry ringspot virus, strawberry latent ringspot virus, tobacco ringspot virus, tomato black ring virus, and tomato ringspot virus) have extensive natural host ranges (7).

VECTORS

Recall that a vector is a biological agent which carries the pathogen, e.g. virus, from a diseased plant to a healthy plant (3). Principally, aphids and nematodes are the vectors of most of the narcissus viruses; however, some narcissus viruses have no known vector and are said to be transmitted only by mechanical means, e.g. handling the foliage, cutting, cultivation, etc. (Table 2).

Since daffodils are rarely colonized by wingless aphids (apterae), many growers find it difficult to accept that a number of the viruses which are found infecting narcissus are transmitted by aphids (5,8,9). It is the winged forms of aphids (alatae) which are believed to be largely responsible for the spread of aphid-transmitted viruses of narcissus. Evidence for this comes from trapping experiments in England where large numbers of alatae were found to visit daffodils (5,8,9). In a specific case, nine different species of aphids have been shown to be able to

TABLE 1 - NARCISSUS VIRION MORPHOLOGY (2, 5, 6, 7, 8, 9, 10)

Isometric or spherical viruses ¹	Rod-Shaped and filamentous viruses
arabis mosaic virus (AMV) broad bean wilt virus (BBMV) cucumber mosaic virus (CMV) narcissus tip necrosis virus (NTNV) raspberry ringspot virus (RRSV) strawberry latent ringspot virus (SLRSV) tobacco ringspot virus (TRSV) tomato black ring virus (TBRV) tomato ringspot virus (TRSV)	carnation latent virus (CLV) ⁴ jonquil mild mosaic virus (JMMV) ⁵ narcissus degeneration virus (NDV) ² narcissus latent virus (NLV) ⁴ narcissus mosaic virus (NMV) ³ narcissus white streak virus (NWSV) ² narcissus yellow stripe virus (NYSV) ² tobacco rattle virus (TRV) ⁶

¹All these virions have a diameter of approximately 30 nm. A nanometer (nm) is one-billionth of a meter (m), i.e. 0.000000001 m.

²Filamentous particle is approximately 750 nm in length.

³Filamentous particles range from approximately 548 nm to 568 nm in length.

⁴Filamentous particle is approximately 650 nm in length.

⁵Filamentous particle of unreported length.

⁶Rod-shaped particles of two lengths: 190 nm and 110 nm.

TABLE 2 - VECTORS OF NARCISSUS VIRUSES (2, 5, 6, 7, 8, 9, 10)

Aphid vectors	Nematode vectors	Mechanical means
broad bean wilt virus (BBWV) carnation latent virus (CLV) cucumber mosaic virus (CMV) jonquil mild mosaic virus (JMMV) narcissus degeneration virus (NDV) narcissus latent virus (NLV) narcissus yellow stripe virus (NYSV) narcissus white streak virus (NWSV)	arabis mosaic virus (AMV) raspberry ringspot virus (RRSV) strawberry latent ringspot virus (SLRSV) tobacco rattle virus (TRV) tobacco ringspot virus (TRSV) tomato black ring virus (TBRV) tomato ringspot virus (TRSV)	narcissus mosaic virus (NMV) narcissus tip necrosis virus (NTNV)

transmit NYSV from diseased to healthy narcissus plants (5). All the aphid-transmitted viruses of narcissus are probably non-persistent viruses. Persistence is the term for the time a vector remains infective, i.e. capable of transmitting the virus after it is acquired from a diseased plant. A non-persistent virus is one in which the vector remains infective for only a few hours, usually less than four (2). Basically what is meant by saying that a virus is non-persistent is that the virus is acquired quickly by the aphid while it is feeding on a diseased plant and is also transmitted quickly when that same aphid subsequently feeds on a healthy plant. As a

matter of fact, non-persistent viruses can be acquired by a feeding aphid in as little as 10 to 30 seconds and subsequently transmitted to a healthy plant in the same short period of time (2). Aphid-transmitted narcissus viruses, in addition to being non-persistent, are often called stylet-borne. The stylet is one of the aphid's mouth parts which is used in feeding on a plant. A stylet-borne virus is one which is carried on the stylet of the aphid. Thus, as an aphid feeds, it inserts its stylet into the diseased plant, acquires the virus externally, and subsequently inoculates a healthy plant when it again inserts its stylet to feed. There is some controversy over the way non-persistent viruses are transmitted by their aphid vectors; therefore, the use of the term stylet-borne should perhaps be avoided for the meantime (2). There is no evidence to suggest that the aphid-transmitted narcissus viruses are also seed or pollen-borne (8). Thus, the seed produced from crosses between plants which were infected by aphid-transmitted viruses will be free of virus. Although all the aphid-transmitted narcissus viruses are mechanically-transmissible, neither handling of plants nor the cutting knife probably account for much transmission of these viruses. Instead, it is only the aphid which carries these viruses from plant to plant. Of course, the offsets or bulblets of a virus-infected bulb will also be virus-infected. However, NMV, which has no known vector, is easily transmitted by mechanical means.

All the nematode-transmitted narcissus viruses seem to be transmitted by only three genera of nematodes (5,8). It is important to note that neither the bulb and stem nematode, *Ditylenchus dipsaci*, nor the root lesion nematode, *Pratylenchus penetrans*, serve as vectors of any of the narcissus viruses. Tobacco rattle virus (TRV) seems to be only transmitted by *Trichodorus* species and the other six viruses by *Longidorus* or *Xiphinema* species (5,8). As with aphids, the nematode vectors have mouth parts which include a stylet which is inserted into plant cells as the nematode feeds. The mechanism of acquisition and transmission of the virus by the nematode is quite involved; however, the insertion of the stylet into plant cells is involved with both virus acquisition and transmission. The nematode vectors of narcissus viruses often feed on young tissue near root tips. With regard to acquisition and transmission of viruses, the viruses can be acquired in 15 minutes to 1 hour of feeding and transmitted in a similar period (2). Once a virus has been acquired by a nematode vector, it can be retained for weeks (2). Of the seven narcissus viruses having nematode vectors, only the four ringspot viruses are known to be seed-borne in narcissus (5).

SYMPTOMS

Recall that a symptom is the visible effect of the pathogen on the host, e.g. yellow stripes on the foliage of a NYSV-infected daffodil (3). At best, the identification of a plant virus disease by symptom expression is an inexact science. Perhaps plant disease diagnosis by the reading of symptoms is an art rather than a science. The preceding statements seem to be particularly well-suited for diagnosis of virus diseases in narcissus. The reason for this is that symptom expression in a virus-infected plant can be modified from the expected by several factors: 1) Symptom expression in a particular virus disease may deviate from the expected due to differences in genotype (genetic constitution of a particular cultivar) of the infected cultivars; 2) environmental conditions, e.g. temperature, soil

pH, soil fertility, etc., may also modify symptom expression in an infected cultivar; and 3) cultivars infected with a virus-complex, i.e. several different viruses infecting the same plant, may have masking of symptoms of one or more of the viruses, or the virus-complex may cause a synergistic effect where the symptom expression of the several viruses acting together is greater or more severe than the sum total of the individual viruses acting independently. In spite of the foregoing, having a "learned eye" is particularly useful in recognizing what may indeed be a virus problem in a daffodil planting.

Carnation latent virus (CLV)

The author could find nothing in the literature available to him regarding symptom production of CLV in narcissus. As the virus name implies, the virus probably produces no readily apparent symptoms in carnation; perhaps the same is also true in narcissus. As mentioned earlier, this virus has only been reported to be found in the cultivar Grand Soleil d'Or which had come from Israel (10).

Broad bean wilt virus (BBWV)

In work done in Japan, BBWV was isolated from narcissus (7); however, the author could find nothing in the literature available to him regarding symptom expression in narcissus.

Cucumber mosaic virus (CMV)

Symptomatology of CMV alone in narcissus is not known as it usually occurs in a complex with several other viruses. It commonly occurs in Grand Soleil d'Or but rarely in trumpet daffodils (5,8).

Jonquil mild mosaic virus (JMMV)

Very little is known about JMMV except that it is prevalent in *N. jonquilla* and causes a mosaic (5,8). In mosaic diseases, the leaves show a "patchwork of discrete, and usually unchanging, dark and light green areas (2)."

Narcissus degeneration virus (NDV)

In work with virus-free plants of the cultivar Grand Soleil d'Or, NDV causes conspicuous chlorotic (yellow) leaf streaking and color breaking in the flowers (10). It would appear that NDV infects only cultivars derived from *N. tazetta* (10).

Narcissus latent virus (NLV)

This virus produces inconspicuous symptoms in narcissus (8). It is common in many cultivars of narcissus (14).

Narcissus yellow stripe virus (NYSV)

Narcissus yellow stripe virus causes conspicuous yellow stripes on the foliage (Figure 5). Symptoms of NYSV typically appear early in the growing season and fade as the season progresses. These symptoms could easily be confused with those caused by tobacco rattle virus (Figure 6). Color breaking of perianth segments is also caused by NYSV (Figure 7). Color breaking usually shows up as white stripes or splotches in the perianth segments. In some cultivars, e.g. King Alfred, tolerance to NYSV is seen and the foliage symptoms are masked (6).

Narcissus white streak virus (NWSV)

Foliage symptoms of NWSV (Figure 8) begin first as purple stripes at the tips of leaves some 3-6 weeks after flowering and finally become white stripes (5,8). The lesions often coalesce and become necrotic, causing the foliage to mature or die down prematurely (5,8).



Figure 5, top left: Symptoms of Narcissus Yellow Stripe Virus. (Photograph made from slide furnished by Dr. Gary Chastagner, Washington State University, and used by his permission.)

Figure 6, top right: Symptoms of Tobacco Rattle Virus. Left — healthy, right — diseased. (Photograph made from slide furnished by the Bulb Research Centre, Lisse, The Netherlands.)

Figure 7, bottom left: Color Break in Cultivar Infected with Narcissus Yellow Stripe Virus. (Photograph made from slide furnished by Willis H. Wheeler and used with his permission.)

Figure 8, bottom right: Symptoms of Narcissus White Streak Virus. (Photograph made from slide furnished by Dr. Gary Chastagner, Washington State University, and used with his permission.)

Tobacco rattle virus (TRV)

Tobacco rattle virus, as mentioned earlier, causes stripes (Figure 6) on the foliage which resembles those caused by NYSV (5,8). Complexes of TRV with other viruses, e.g. NYSV, often occur in narcissus (6,8).

Other nematode-transmitted viruses

Symptom expression due to TRV has already been discussed. Arabis mosaic virus (AMV), strawberry latent ringspot virus (SLRSV), and tomato black ring virus (TBRV) commonly occur in both trumpet daffodils and Grand Soleil d'Or; however, they usually do not express any symptoms (5,8,10). Tomato ringspot virus (TRSV) and raspberry ringspot virus (RRSV) have also been reported in narcissus, presumably causing symptomless infections (5,8).

Narcissus mosaic virus (NMV)

Infections caused by NMV are marked by a mild mosaic, e.g. small, alternating light and dark green areas on both foliage and flower stems (5,8). Narcissus mosaic virus is widespread in cultivars which are trumpets, large cups, and doubles; however, NMV is not found in *N. jonquilla* or *N. tazetta* (11). Some older cultivars like King Alfred, Fortune, and Golden Harvest are totally infected with NMV (11).

Narcissus tip necrosis virus (NTNV)

In cultivars which show symptoms to NTNV, expression begins by the formation of elongated chlorotic areas near the leaf tips. These chlorotic areas later turn brown and necrotic with a yellow periphery (Figure 9). Ultimately, the tip necrosis proceeds toward the base of the leaf causing a premature leaf senescence (7).

Chocolate spot

Chocolate spot (Figure 10) is a disease of narcissus which is of suspected viral etiology. Perhaps it is due to a virus-complex (6). The obvious symptom of chocolate spot is the brown foliage lesions or spots.

EFFECTS OF VIRUS INFECTION

The effects of plant viruses on narcissus cultivars is often times less than obvious. Certainly, the leaf, flower stem, and flower symptoms of a virus infection would be effects; however, that is not what is at issue here. Instead, effects of virus infection here include such things as deterioration of a cultivar over a period of years as a consequence of infection by NYSV (8). Likewise, the infection of cultivars by NWSV results in early senescence of foliage which results in reduction of bulb yield by 30-40% within 2-4 years from the time the bulbs became infected (8). With reduction in bulb yield in a NWSV-infected cultivar, it is easy to see the effect of a virus infection on a cultivar; however, with deterioration of a cultivar as a consequence of virus infection, e.g. NYSV, the effect is perhaps less than obvious. Perhaps the best way to look at cultivar deterioration as a consequence of virus infection is to look at the only example available of a formerly virus-infected cultivar which has been freed of its viruses by meristem culture, e.g. Grand Soleil d'Or.

Grand Soleil d'Or is a cultivar of unknown origin which was registered first in 1890; however, it has been grown commercially for over 100 years on the Isles of Scilly (10). Over 200 acres of this cultivar, which is not frost-hardy and cannot be field grown elsewhere in Britain, are grown on the Isles of Scilly (10). Grand Soleil d'Or has deteriorated in vigor and productivity over the past 65 years, a deterioration which is due to the

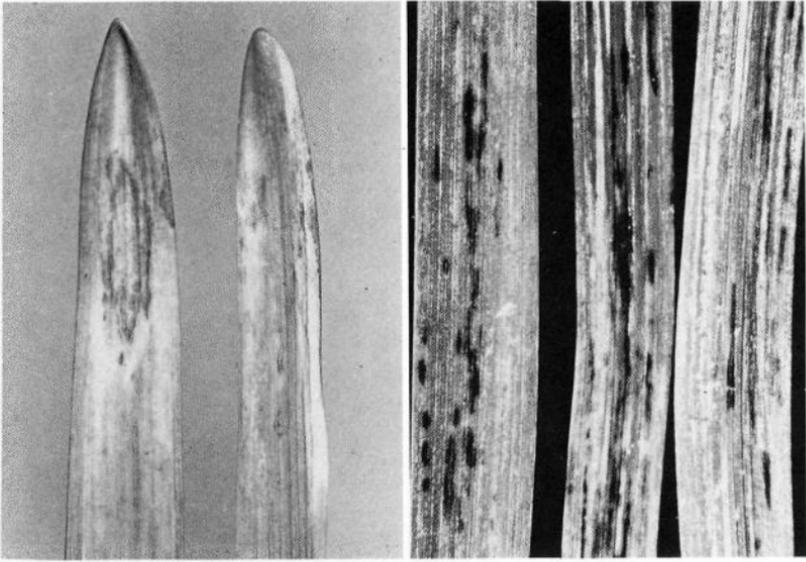


Figure 9, left: Symptoms of Narcissus Tip Necrosis Virus. (Photograph made from slide furnished by the Bulb Research Centre, Lisse, The Netherlands.)

Figure 10, right: Symptoms of Chocolate Spot Virus. (Photograph made from slide furnished by Dr. Gary Chastagner, Washington State University, and used with his permission.)



Figure 11 — Grand Soleil d'Or. Smaller flower is infected by NDV and AMV; larger flower is virus-free. (Photograph copied with permission from the Glasshouse Crops Research Institute Annual Report 1977.)

total infection of the cultivar by viruses (10). All samples of Grand Soleil d'Or examined have been found to be infected by NDV and AMV (10). Additionally, this cultivar has often been shown to be infected by other viruses in addition to NDV and AMV, e.g. CMV, TBRV, and SLRV (10). Grand Soleil d'Or, which has been freed of viruses by meristem culture, shows the following: 1) virus-free Grand Soleil d'Or produced twice as many flowers/bulb as did infected bulbs although the number of flowering stems/bulb was only 54% greater than that of virus-infected bulbs; 2) yielded 8.9 flowers/stem as opposed to 6.8 flowers/stem as did infected bulbs; 3) produced flowers which are larger and of richer color than those of virus-infected plants (Figure 11); 4) produced bulbs which showed 239% the weight gain of infected bulbs; and 5) produced 2.94 times as many offsets/bulb as did virus-infected bulbs (10). Wheeler (12) personally observed Grand Soleil d'Or growing in the Isles of Scilly and noted that the virus-free cultivar seemed to grow about twice as tall as the virus-infected cultivar. Thus, from the preceding discussion, it is obvious that what is meant by deterioration of a cultivar can't really be appreciated until one can observe the growth of a virus-free stock of the same cultivar.

CONTROL

Control of narcissus viruses which are aphid-transmitted can only be accomplished by thorough rogueing of all virus-infected stocks so as to remove the source of inoculum for the visiting aphids. With control of the nematode-transmitted viruses, two control measures practiced concomitantly are advised: 1) Rogue and destroy all infected bulbs, and 2) fumigate the soil, e.g. methyl bromide, etc. to rid it of the nematode vectors. With mechanically-transmitted narcissus viruses, e.g. NMV and NTV, cutting knives and cultivating tools should be regularly disinfected, e.g. trisodium phosphate dip, when moving from cultivar to cultivar.

Control of narcissus viruses in the future is of course speculative to say the least; however, it is through such speculations that new control measures will come. With the aphid-transmitted viruses, control may be accomplished by spraying the foliage with a water/mineral oil emulsion. Such sprays have already been found to interfere with the aphid transmission of some viruses, e.g. potato virus Y (PVY), a filamentous virus which infects potatoes (2,13). The development of genetically-resistant cultivars is an avenue to control of viruses in narcissus which is yet unexplored. However, the use of genetic resistance to viruses is used in a number of agronomic crops today. Control of nematode-transmitted viruses seemingly will continue to be handled by rogueing and the use of soil fumigants. Use of insecticides to control aphid vectors of narcissus viruses does not seem promising as aphids acquire and transmit their viruses too quickly for insecticides to be effective in control.

Although meristem culture as used to free Grand Soleil d'Or of viruses is not really a preventive measure, it does offer the attractive possibility of recovering a desirable cultivar of which there are no known virus-free stocks.

Culture of new cultivars in aphid-proof, screened areas covering soil which has been fumigated offers hope for the introduction of new cultivars which are not already virus-infected as the screening would prevent access to the plants by aphid vectors and fumigation would kill nematode vectors (5).

SUMMARY

Within this article, the attempt was made to discuss viruses in general and narcissus viruses specifically, virus vectors, symptoms and effects of virus infection in narcissus, and control measures for today and possibilities for tomorrow.

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THOUGHTS OF SPRING

After the ice and snowy winds of winter,
The late afternoon shadow of bare winter trees
Lies on the garden path with abandon and ease.
The first violet crocus beckons the daffodils
Which will wander along the winding path,
When Spring in full glory perceives what she hath.

—NANCY POPE

BEGINNER'S CORNER

If you're new to the cult of the daffodil, welcome! This column is especially for you. First of all, don't let Dr. Snazelle's article on viruses scare you! With any luck you'll never see most of them, but armed with the knowledge of what virus symptoms look like, you'll be able to keep an eye on the health of your daffodils, and should disease strike, you'll be prepared.

This is the blooming season for daffodils, so it is the ideal time to get out and see the flowers. If there's a daffodil show in your area, visit it. It's the best place to see all types of daffodils "in person." A show schedule may look complicated, but it's not really so bad. All daffodils have a classification. There are twelve divisions, so all daffodils have a number plus some letters which describe the color of the flower. The letters used are W-white, G-green (usually confined to the eye zone), Y-yellow, O-orange, R-red, and P-pink. The letters are assigned by the raiser as the flower grows under his conditions, and are sometimes changed by classification authorities if warranted. All divisions are for daffodils of garden origin except Division 10. Division 1 is for trumpets; the cup or corona is as long or longer than the perianth. Division 2 for long-cups requires that the cup be more than one-third but less than equal to the perianth segments. Division 3 for short cups requires—what else—that the cup be not more than one-third the length of the perianth segments. Division 4 encompasses all doubles (except species); Division 5 is for triandrus hybrids which usually have more than one bloom on a stem with a pendent pose. Division 6 is for cyclamineus hybrids which usually have a reflexed perianth and a straight, narrow corona. As a group, they flower early. Division 7, jonquil hybrids, usually have several flowers on a stem, and are usually fragrant. Tazettas, Division 8, are cluster-flowered, fragrant, and short-cupped. The poets in Division 9 are those our grandmothers called narcissus (but we know that narcissus is the Latin and daffodil the English name for the entire genus) and have white perianths with small cups edged in red or orange. Division 10 is for all the wild daffodils—not the ones growing wild at some abandoned homesite, but the species and wild hybrids including their double forms. Division 11 is for split coronas and Division 12 is for anything that doesn't fit precisely any other place. A few *bulbocodium* hybrids are in that category. Most shows include classes for single stems, vases of 3, and collections of 5 in each division, and the larger shows include classes for collections of 12 and 24.

A daffodil show is also the best place to meet other daffodil people. Though they may be busy, they're never too busy to answer any questions you may have. You'll find they're great people. I well remember being enticed to exhibit in an ADS show for the first time by the offer of a \$5.00 bulb for each blue ribbon I won. Several of us novices took the gentleman up on his offer. We won our share of ribbons and made a good friend in the process.

While you're at the show, make a list of what appeals to you, then send for catalogues from specialist daffodil growers like those whose ads are in this issue. Don't let the high prices of newer cultivars scare you. Remember that a grower has a lot of time and effort invested in a new cultivar. It takes five to six years for a seed to grow to a blooming size bulb, then more years are necessary to build up stocks enough to list in a catalogue. There may be twenty years invested in that new introduction.

The price will come down as the supply increases. There are lots of good daffodils priced at \$1.00 or less. Don't be afraid to order just one of each one you want, either, advice to plant six or more in a clump notwithstanding. (Admittedly the six will look better in the garden setting.) Your one bulb will grow into a clump and you can try lots more that way.

So, go to the shows, (if there none in your area, try to look up another ADS member) meet the daffodil people, send for catalogues, and if our catalogues get here in time, we'll have a list of good daffodils under \$1.00 for you next time.

1980 SHOW DATES

- March 8-9 - Corona del Mar, CA - by the California Daffodil Growers at the Sherman Foundation Center, 2647 East Pacific Coast Hwy.; information: Jay Pengra, 954 St. Katherine Dr., Flintridge, CA 91011.
- March 15-16 - La Canada, CA - by the Southern California Daffodil Society at the Descanso Gardens, 1419 Descanso Dr.; information: Jay Pengra, 954 St. Katherine Dr. Flintridge, CA 91011.
- March 21 - Dallas, Texas - Regional Show by the Texas Daffodil Society at the Dallas Woman's Club, 7000 Park Lane; information: Mrs. C. R. Bivin, Route 1, Overton, TX 75684.
- March 22-23 - Oakland, CA - Regional Show by the Northern California Daffodil Society at the Lakeside Park Garden Center, 666 Bellevue; information: Mrs. Joseph Allison, 1703 Cooper Rd., Sebastopol, CA 95472.
- March 26 - Hiram, GA - by the Rural Beauty Garden Club of Paulding County at the Hiram Methodist Church, Hwy. 92 & Church St.; information: Mrs. Donald H. Drafall, Rte. 1, Hiram, GA 30141.
- March 27-29 - Memphis, TN - National Show by the Mid-South Daffodil Society and the Garden Study Club of Hernando, Mississippi, at the Hyatt Regency; information: Miss Leslie Anderson, Rte. 3, 2302 Byhalia Rd., Hernando, MS 38632.
- March 29-30 - Fortuna, CA - by the Fortuna Garden Club at the Fortuna Monday Club House, Sixth & Main Streets; information: Mrs. Edward Garbutt, 1946 Scenic Dr., Fortuna, CA 95540.
- April 2-3 - Chapel Hill, NC - State Show by the Chapel Hill Daffodil Society at the North Carolina Botanical Garden; information: Mrs. W. L. Wiley, 412 Cameron, Chapel Hill, NC 27514.
- April 3-4 - Atlanta, GA - by the Georgia Daffodil Society and Rich's Garden Center of Atlanta at the Plaza Auditorium, Rich's, Inc., 45 Broad St., S. W.; information: Mrs. Phillip E. Campbell, Route 2, Fayetteville, GA 30214 or Mrs. Jeanne Lynch, Rich's Garden Center, Rich's, Inc., 45 Broad St., S.W., Atlanta, GA.
- April 5-6 - Hampton, VA - Regional Show by the Tidewater Virginia Daffodil Society at the Holiday Inn (Coliseum), 1815 West Mercury Blvd.; information: Mrs. Henning Rountree, 276 Harris Creek Rd., Hampton, VA 23669.
- April 5-6 - Nashville, TN - State Show by the Middle Tennessee Daffodil Society at the Tennessee Botanical Gardens (Cheekwood); information: Mrs. Paul Gripshover, Rt. 3, 1206 Natchez Trace, Franklin, TN 37064.

- April 10 - Scottsburg, Ind. - at the First Presbyterian Church; information: Mrs. Verne Trueblood, RFD 3, Box 187-A, Scottsburg, IN 47170.
- April 12- Huntington, WV - by the Huntington Council of Garden Clubs at the Woman's Club, 12th Ave.; information: Mrs. Curtis R. Davis, 78 Pine Hill Estates, Kenova, WV 25530.
- April 12 - Louisville, KY - Regional Show by the Kentucky Daffodil Society at the Shelbyville Mall, Louisville, Kentucky; information: Mrs. Wynant Dean, 1629 Cowling Ave., Louisville, KY 40201.
- April 12 - Princess Anne, MD - by the Somerset County Garden Club at the Peninsula Bank, 30 South Somerset Ave.; information: Mrs. E. Wallace Warwick, Sherree Lane, Princess Anne, MD 21853.
- April 12-13 - Washington, D.C. - by the Washington Daffodil Society at the National Arboretum Administration Bldg., 24th & R Streets, N.E., Washington, D.C.; information: Mrs. Jennings C. Pamplin, Jr., 5009 Ninian Ave., Alexandria, VA 22310.
- April 12-13 - Gloucester, VA - by the Garden Club of Gloucester at the Gloucester Intermediate School, Route 17; information: Mrs. Hugh C. Dischinger, Box 472, Gloucester, VA 23061.
- April 16-17 - Cincinnati, Ohio - by the Southwest Ohio Daffodil Society at the Cincinnati Nature Center; information: Mrs. Philip O. Geier, 6000 Redbird Hollow Lane, Cincinnati, Ohio 45243, or Mrs. William R. Seaman, 10405 Weil Rd., Cincinnati, Ohio 45242.
- April 18 - Wilmington, DE - Northeast Regional by the Delaware Daffodil Society at the St. Albans Episcopal Church, 913 Wilson Rd.; information: W. R. MacKinney, 535 Woodhaven Road, West Chester, PA 19380.
- April 20 - Indianapolis, IN - Regional Show by the Indiana Daffodil Society at the Fashion Mall, Keystone at the Crossing; information: Mrs. Atwood Moore, 5233 Brendonridge Rd., Indianapolis, IN 46226.
- April 22 - Chillicothe, Ohio - By the Adena Daffodil Society at the VA Medical Center, Recreational Hall, Bldg. 9; information: Mrs. Kenneth Dunn, 28 Shawnee Dr., Chillicothe, Ohio 45601.
- April 22-23 - Chambersburg, PA - By the Chambersburg Garden Club at the Recreation Center, South 3rd St.; information: Mrs. Owen W. Hartman, 105 Farmington Rd., Chambersburg, 17201.
- April 23-24 - Baltimore, MD - By the Maryland Daffodil Society at the Brown Memorial Church, North Charles St.; information: Mrs. Edward Richardson, Jr., 304 North Wind Rd., Baltimore, MD 21204.
- April 23-24 - Downingtown, PA - By the Garden Class of the Woman's Club of Downingtown, Pennsylvania, at the Woman's Club House, Manor Ave.; information: Mrs. W. L. Batchelor, Rte. 1, Downingtown, PA 19335.
- April 25-26 - Plymouth Meeting, PA - State Show by the Philadelphia Area Daffodil Society at the Plymouth Meeting Mall; information: Charles A. Gruber, 124 Lincoln Terrace, Norristown, PA 19403.
- April 26 - Princeton, NJ - By the New Jersey Daffodil Society at Trinity Church; information: Mrs. R. Kenneth Fairman, 88 North Stanworth Dr., Princeton, NJ 08540.
- April 26-27 Columbus, Ohio - by the Central Ohio Daffodil Society at the Upper Arlington Municipal Services Bldg., 3600 Tremont Rd.; information: Mrs. William Pardue, 2591 Henthorne Rd., Columbus, Ohio 43221.

April 28-29 - Nantucket, MA - by the Nantucket Garden Club; information: Mrs. Earle MacAusland, P.O. Box 298, Nantucket, MA 02554.

April 29-30 Cleveland, Ohio - by the Western Reserve Daffodil Society at the Garden Center of Greater Cleveland; information: Wells Knierim, 31090 Providence Rd., Cleveland, Ohio 44124.

May 1 - Greenwich, CN - By the Greenwich Daffodil Society at the Greenwich Boys Club, Horseneck Lane; information: Mrs. James W. Riley, 3 Jofran Lane, Greenwich, CN 06830.

May 10-11 - Chaska, Minnesota - By the Minnesota Daffodil Society at the Minnesota Landscape Arboretum; information: Dave Karnstedt, 1790 Richard Circle, West St. Paul, MN 55118.

NOTICE

To all Awards Chairmen of the 1980 Shows: Please return your unused ribbons and Show Report Forms to the Awards Chairman NO LATER THAN TWO WEEKS AFTER your show date.

Two brand new Awards will be offered at the National Show in Memphis this year. They are the English Award and the Northern Ireland Award. The English Award will be given for five stems of standard daffodils bred in England. A medal will be given to the winner. The Northern Ireland Award is a Perpetual one for five stems of standard daffodils bred in Northern Ireland. A plate depicting the Book of Kells will be given to the winner to keep for a period of one year.

The Olive W. Lee Memorial Trophy has been changed from a Special Award to ADS category. This is for the best standard daffodil from Divisions 5, 6, 7 or 8.

New last year as a Special Award was the John and Betty Larus Trophy, for the best three stems of one miniature daffodil seedling exhibited by the originator only. It is now an ADS Award.

—MRS. PHIL LEE, *Awards Chairman*

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A SHORT WALK IN NEW ENGLAND

FRANK HARRISON, *Newtownards, Co. Down, Northern Ireland*

The ADS Convention in Boston, Massachusetts, was the occasion of so much activity and hospitality that some of the visiting judges from overseas who were used to the slower pace of the old world needed a short rest cure, and having seen the beautiful old Boston houses and their gardens on Beacon Hill and the delightful daffodil plantings at the Rice's garden at South Hamilton, the Stevenson's place in Hamilton, the Convention Chairman Mrs E. A. Conrad's woodland garden at Prides Crossing, and the fascinating Peabody Museum in Salem, they were anxious to see more.

Mrs. Conrad's delicious lobster luncheon at Prides Crossing and a dinner at her Club in Boston had also created a keen desire to investigate further the sea-food situation along the North Shore and in other parts of New England.

It was a great Convention with a magnificent range of flowers throughout all the divisions with a really striking collection by Richard Ezell winning the hotly contested, much coveted Carey E. Quinn Award. The proceedings included splendid accounts by Peggy Macneale, Louise Hardison, and Kathy Andersen of the World Convention which preceded Boston. The Boston Convention Committee and the ADS were entitled to feel the satisfaction of successful achievement, and the President and Amy Anthony were entitled to a well earned rest, but packed into the back of their station wagon with all the papers and left over problems, were the two judges from Northern Ireland who now wanted to see the countryside and gardens of Connecticut.

The laden station wagon took the long 120 mile motorway to Hartford through a pattern of woodlands which were everywhere lit up by pink or white flowering dogwoods. We arrived in Bloomfield at the six acre steeply wooded site of the Anthony home, which has been built into the hillside on so many levels that it seems to have grown there, and we were immediately greeted by "Springhill's Curious Jorge," the English springer whose duty it had been to guard the property in the owners absence. He came bounding up the steps to the garage level from the terraces below rather surprised to see two strangers and who smelt suspiciously of distant Irish dogs.

The first impressions were of the rising slopes of the woods behind, below, and all around. The steep drive down to the garage level showed a vast range of daffodils on terraces to our left in groups which were nearly all in full flower. In front of us was the upper level of the house with its main living rooms on a lower level surrounded by paved terraces, which met lawns fringed with forest trees leading down into a glen. These lawns were in their turn bordered by beds of daffodils in great variety, and with raised stone-walled beds for the miniatures which needed special care and which also allowed their sometimes fragile beauty to be more easily seen.

The immediate desire to examine closely the growing flowers seriously curtailed lunch, and we were soon among them seeing what had come into flower since the Anthonys left for Boston, and what could be seeded for future generations.

For us the really extraordinary thing was to find Cushendall and Cantabile in flower with a few trumpets and Division 1 and 2 things like Preamble, Tudor Minstrel and Vulcan which have a different flowering season in Ireland; and the other immediate pleasure was to find the color so good in such a bright sunny place with cultivars like Mahmoud, Matapan, Greenjacket, and Strangford looking their best.

It took days for us to examine and enjoy all the hundreds of different things in bloom and the time not spent bending over the flowers was taken up with visits to the Anthonys' friends, especially Dee and Bob McCombs at their house perched high on a hill in West Hartford, who were kind enough to entertain the strangers.

There were expeditions all round the neighborhood to places which included a fresh vegetable and flower market where the color of purple tinted pineapples and fresh asparagus challenged the pinks and other rich hues of petunias, salvias, and pansies by the hundred; a visit to Nook Farm, the literary enclave of Mark Twain and Harriet Beecher Stowe; and the memorable sea-food which included a dinner at Jewish sea-food place where you could buy shelled lobster by the pound, and prawns by the bucket, and cherrystone clams or bay scallops by the ton.

But we always came back to the flowers whose color and freshness gave new pleasure early and late everyday. Everyday brought new discoveries and further discussion as to what pollen should be put on which new arrival, so that the hybridizing brush was kept busy, especially on the miniatures.

The groups which impressed us most strongly on the terraces above the house were Tudor Minstrel, Camelot, Verona, Silken Sails, Passionale; the jonquils Finch, Pipit, and especially Stratosphere; the doubles Tahiti, Hawaii, and Monterrico; and the little Division 9 Sea Green on the raised bed of miniatures which was curving round a splendid conifer. It was difficult to pick from the great variety of plants, but the Division 7 Pease-blossom on seven inch stalks with three florets captured attention.

Beyond the house on the further terraces the poets included nearly the whole range with Auden, Masfield, Wordsworth, Cantata, and Poet's Way all excellent and further again were Silver Leopard and Cushendall and some of the Ballydorn things such as Capisco, Strangford, and Clockface seedling crosses from these and other cultivars which seemed very comfortable in New England.

Here also there was a large clump of Dallas and a range of triandrus hybrids (from Grant Mitsch's cross of Quick Step \times *N.t. albus*), some of which had yellow in the flower which extended into the seed pod and neck. A particularly good block of the yellow jonquil Trevithian was here and some nice plantings of Magic, Acropolis, and Gay Time were not far off.

The big long beds fringing the lawns had many beautiful lime-sulphur flowers from Dr. Tom Throckmorton, good Benvoy and Arctic Imp from Prospect House, and two plants of Beauvallon which seemed to be clean of the virus which sometimes troubles its perfection.

A very good plant of Verve, a 2W-YY0, with a broad well-defined orange band on deep yellow against very white petals was particularly striking.

The crosses which Amy Anthony made were very interesting and often adventurous. Matador \times Bebop, and Matador \times Rikki, Joybell \times Perky

and by *triandrus albus*, and Joybell also crossed with several cyclamineus seedlings including the Ballydorn seedlings from Dove Wings and Jenny. Benvoy, Arctic Imp, St. Patrick, Greenjacket, and Cushendall all got pollen from a number of cyclamineus things and one may hope that a new generation of cyclamineus blood will produce real crystalline white in the perianth of modestly sized flowers of true cyclamineus character, and thus replace some of the overlarge hybrids now passing themselves off as cyclamineus.

It was an added pleasure on our final day to meet Matthew and Nel Zandbergen who had made the daylong journey from Nantucket Island to Bloomfield via Newport, and who took our places as house guests. They sat down with us to dinner under the beautiful Audubon bird picture "Tropic Bird" and the portrait of "Master Kimball" by John Singer Sargent which grace the walls of the Anthony dining room.

The visit to New England like the Convention was alas finished, but it left memories which will last, and a determination to return again.

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JUDGING ETHICS

BETTY BARNES, *Judges Chairman*

(Remarks made at the Boston convention, May, 1979)

The subject of Ethics and Responsibilities in judging is not a very popular subject for we hesitate to take an unbiased look at ourselves, but the time has come for us to do so. Whether we like to admit it or not there is among the exhibitors of the American Daffodil Society some discontent about the behavior and ability of some judges.

The Ethics of Judging can be said to have the right set of values and duties. Having this, a judge conducts herself/himself with dignity and is aware of his/her obligations to fellow judges, the exhibitors, and the show personnel.

A good judge will have tolerance and forget personal prejudices. Decisions will be based on knowledge acquired through study and experience gained by growing and showing. Also study the schedule before the day of the show. Never be over-bearing trying to take over the panel nor be over-confident or conceited. Always avoid offensive remarks and destructive criticism.

An ethical judge will not compromise by awarding unearned ribbons nor will he/she hesitate to award ribbons to worthy entries.

A judge assumes many responsibilities along with the privilege of being a judge. We must keep up with the changes. An exhibitor gives too much time and money to bring a flower to a show and to have an unprepared judge neglect the entry is unforgivable.

After you have accepted an invitation to judge a show do all the research necessary to prepare for the assignment you have been given. Arrive on time at the appointed place, weigh your decisions carefully and impartially, be considerate of your clerks and do not delay the judging to prove a point.

The whole purpose of the accredited judge is to raise the standards of judging and to educate the members. Isn't it true that too much of our valuable information starts and stops without leaving our own circle? If you find yourself in this closed-circle situation there are a number of things you can do—give programs, help with shows, even write the schedule. As you know judging a show takes work, both mental and physical. It takes experience, time, and patience, but let us if possible accept the invitation to judge.

QUALITIES OF A JUDGE

1. Knowledge
 - a. Realize that knowledge acquired in the schools is merely supplementary to that learned by personal contact with the daffodil, by growing them for exhibition, by visiting gardens and seriously studying the characteristics of the different cultivars.
 - b. Be informed as to the perfect stage of development and qualities of show flowers.
 - c. Be able to recognize good horticultural practice at a glance.
 2. Experience
 - a. One of the most important qualifications of a judge. Wise decisions should result from experience. This is why student judges begin by judging on a panel with a senior judge. It is so important that the senior judge take time to guide the student.
 3. Fairness
 - a. An essential quality. Personal preference and prejudices have no place in judging. A judge should be fair and unbiased in all decisions.
 4. Tact
 - a. Tact and kindness should be evident in a judge's actions and remarks.
- My final word—I urge you to be human, be considerate, be enthusiastic, and above all keep abreast of the times.

BOARD OF DIRECTORS MEETING, SEPTEMBER 22, 1979

(Abridged from the report of the Secretary)

Forty-one directors were present.

Mr. Knierim, treasurer, reported that the Society has about \$800 more in the bank now than at the end of last year. The net worth is up about \$2,000 for the year-end figure of \$10,915.

Regional Reports were received from seven regions.

Dates for future National Conventions were given as follows: March 27-29, 1980, Memphis, Tennessee; last weekend in March, 1981, Newport Beach, California; and April 1-3, 1982, Nashville, Tennessee.

REPORTS OF COMMITTEES:

AWARDS: Mrs. Lee is revising the show award sheets. She announced a new award, the English Award presented by the English Daffodil Society, for five stems of English-raised daffodils. Mr. Knierim said that the Omagh Horticultural Society had presented a Kells plate to him in April. At the time, Mr. Knierim told the assembled crowd that he would present the plate to the ADS to be given as an award for a collection of five Northern Ireland-bred daffodils, to be known as the Northern Ireland Award.

CLASSIFICATION: Mrs. Anthony reported that corrections to the Data Bank will appear in the December *Journal*. She suggested changing the name of *Daffodils to Show and Grow* to *Daffodils to Grow and Show*. Concern was expressed over the number of new cultivars registered recently.

DATA BANK: Dr. Throckmorton announced that this year 279 new cultivars have been added and 250 changes made (spelling, color-coding, etc.) *Daffodils to Show and Grow* can be easily updated. He proposed culling out those cultivars registered between 1960 and 1965 that most people have never heard of. Mr. Ticknor has lists of cultivars from Divisions 4-12 and miniatures. For 10¢/page, he will Xerox any of these.

EDITOR OF JOURNAL: Mrs. Gripshover reported that she was pleased to have enough material to expand the *Journal* to 64 pages. She urged people to continue supplying material.

HEALTH AND CULTURE: Mr. Wheeler's report said he recommended a formalin drench (1 pint formalin/30 gal. water) to a depth of at least eight inches for crown rot fungus or southern wilt fungus. Before mailing diseased leaves to him, he suggested that the leaves should be dried between blotters or papers and should have weight on them. Leaves in a plastic bag turn to mush. Insects should be killed in alcohol before mailing.

JUDGES: Mrs. Barnes has tabulated the numbers of accredited and student judges by state. Dr. Throckmorton asked what could be done when no judges can be obtained. A suggestion was made to put an announcement in the *Journal* or to contact the chairman of Judges.

LIBRARY: Mrs. Bloomer reported that the updated volumes of the Stud Book have been placed in the library, and the old ones destroyed. These volumes stay in the library. Information from them may be obtained by writing to Mr. Ticknor.

MEMBERSHIP: Mrs. Thompson feels that newsletters are very instrumental in obtaining and retaining members.

MINIATURES: Mrs. Macneale indicated that additions to the Approved List would be in the December *Journal*. She is interested in comments from growers of miniatures—thoughts on new small daffodils or candidates for possible de-listing.

PUBLICATIONS: Mrs. Pardue's report stated that the *Brief Guide to Growing Daffodils* was printed in North Carolina. This publication is sent to all new members. *Daffodils to Show and Grow* will be reprinted as the supply decreases and an update is needed.

PUBLIC RELATIONS: Mrs. Perry reported an interview she had had seemed to bring much favorable publicity. She has worked with the Hohn sisters in writing to eight different outlets for Dutch bulbs hoping to persuade them to use proper terminology in their catalogues.

REGISTRATION: Mrs. Anderson's report stated that eleven American breeders registered 88 daffodils during 1979.

SCHOOLS: Mrs. Yerger summarized the numbers of students taking examinations in 1979 as follows: Course I - 29 students (11 passed), Course II - 30 students (19 passed), Course III - 15 students (10 passed), Make-up - 20 students (18 passed). Her

report discussed rules regarding instructors. She brought the Board up to date on recent changes in judging school requirements. Discussion followed regarding number of required student judgments and suggestions were made to improve capability of judges.

SHOW REPORTER: Mr. Anthony commended Mrs. McKenzie for her large contribution in the September *Journal*.

SYMPOSIUM: Mrs. Moore indicated that her report will appear in the December *Journal*.

TEST GARDENS: Mr. Thompson indicated that the garden at Clemson has now been planted in the new arboretum. Mrs. Thomas F. Martin has given 600 seedlings to Clemson for evaluation. The best will be selected and placed in the Test Garden in memory of Mr. Martin. Currently 200 cultivars are being planted at the new Test Garden at the University of Arkansas.

REPORT OF EXECUTIVE DIRECTOR: Mr. Ticknor mentioned a March, 1979, article which had appeared in *Southern Living*. As a result, to date he has received 153 inquiries. These were answered. He pointed out that the present Executive Directorate is the work (almost full-time) of two people, himself and Mrs. Ticknor. Mr. Anthony commended Mr. Ticknor for his work. An ovation was given to Mr. & Mrs. Ticknor for all their efforts.

OLD BUSINESS:

GEORGE LEE MEMORIAL: Mrs. Riley stated that the New York Botanic Garden would like the George Lee interest to be designated for the student most outstanding in some specialized area such as "most improved" or "best practical gardener." It was moved that the prize should be awarded as established by the institution in consultation with Mrs. Riley.

NEW BUSINESS:

TROPHY INSURANCE: Mr. Knierim suggested that at the Memphis Convention, the Awards Chairman gather up the trophies and proceed to get an evaluation and description and apply for insurance as soon as possible.

SALARY OF EXECUTIVE DIRECTOR: A motion was approved to increase the salary of the Executive Director by \$500 from \$2500 to \$3000 per year.

EXECUTIVE DIRECTORSHIP: Because Mrs. Ticknor does so much work, it was moved that Mrs. Ticknor receive the title of "Associate Executive Director," and that she and Mr. Ticknor be members of the Board.

COLOR CODING OF VARIABLE DAFFODILS: Dr. Throckmorton has written an article which will appear in the December *Journal*.

TAX DEDUCTIONS: Mr. Ticknor stated that the ADS is exempted as an educational organization under Section 501 (c) (3).

BUDGET: Mrs. Bozievich presented a proposed budget for the year 1980. Mr. Anthony indicated that if the budget proved to be inadequate, it is within the province of the Executive Committee to change it. The budget was approved.

CONVENTION FINANCES: Mr. Knierim stated that Convention Chairmen should report to the Treasurer profits or losses realized from the convention. The profit should go to the ADS, and the ADS would be expected to make up reasonable losses to the local group.

DAFFODILS TO SHOW AND GROW, 1980: Since only a few copies remain, Mr. Ticknor expressed a necessity for reprinting this book in 1980. Mrs. Riley would like to see growers' names and addresses in the front. This was referred to the Publications Committee. The name of the next edition will be *Daffodils to Grow and Show*.

1980 FALL BOARD MEETING: Mrs. Rutledge issued an invitation on behalf of the Indianapolis Daffodil Society to hold the 1980 fall board meeting in Brooklyn and Indianapolis, Indiana, on September 26-27, 1980.

OBSOLETE SCHOOL FILE CARDS: Mrs. Yerger asked permission to discard file cards for people who took Course I in 1969 and are no longer ADS members.

NEW SHOWS: Mrs. Wiley brought up the problem of first time shows in isolated areas. Mrs. Lee is revising the booklet on how to hold a first show. Mrs. Wiley emphasized that these people need help from experienced ADS members.

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Along with Grant Mitsch introductions and a few of our own, others include those from: Dr. Tom Throckmorton, Mrs. Eve Robertson and Mrs. Eileen Frey.

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Publications in the ADS library may be borrowed by members. Incomplete list will be found in *Daffodil Journal* for September, 1965, p. 21. Correspondence invited on items not listed.

ITEMS FOR SALE

Daffodil Pin (tie back, pin back, or ring back)	\$ 7.50
Daffodils — To Show and Grow, 1977	3.50
Handbook for Exhibiting and Judging Daffodils, 1974	2.25
The Daffodil Handbook, 1966	
.....Paper Cover, \$3.40; Cloth	4.90
Print-out of Daffodil Data Bank	\$15.00; with binder \$20.00
Set of at least 15 numbers of Daffodil Journal	5.00
Single copies of Daffodil Journal	1.50
ADS Yearbooks for 1957/8, 1964	2.00 ea.
ADS Approved List of Miniatures, 1979	two 15-cent stamps each.
RHS Yearbook, Daffodils 1978	4.25
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Show entry cards	500 for \$11.00; 1000 for \$20.00

Make checks payable to American Daffodil Society, Inc. Prices include postage. Correspondence is invited concerning out-of-print publications on daffodils. Copies of these are sometimes available or names will be placed on want list.

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