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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 Executive Editor.

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SCHEDULE OF MEMBERSHIP DUES IN THE AMERICAN DAFFODIL SOCIETY

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NARCISSUS CYCLAMINEUS D. C.:
THE NAME AND THE PLANT

By Roberta C. Watrous, Washington, D. C.

Two books of flower illustrations published in Paris early in the seventeenth century are of particular interest in connection with *N. cyclamineus*, for they are the only record we have of its existence prior to 1885. *Le Jardin du Roy très chrestien Henri IV* was first published in 1608. The artist, Pierre Vallet, was "brodeur ordinaire" to the king, but is said to have been employed also in the royal gardens. The book was dedicated to the queen, Marie de Médicis, who took a great interest in the rare plants being cultivated in the royal gardens. She was also interested in embroidery, and one of the purposes of the books of flower illustrations of the period was to provide patterns for use in this fashionable form of decoration.

More than thirty kinds of narcissus were illustrated in this book or the somewhat enlarged reissues that followed (with changes in the title as Louis XIII and then Louis XIV came to the throne). The illustrations (unnumbered at first) are a combination of etching and engraving, and are quite naturalistic in treatment, although few of the daffodils are shown with foliage. Each variety is accompanied by its name in Latin, and in the later editions there is a list with color notes to guide those who "would like to paint, or illumine, or embroider, or make tapestry."

On the same plate with a beautiful "Lilium album vulgare" is a small daffodil with a long narrow trumpet and reflexed perianth segments, called "Narcissus hispanicus minor anplo calice folis reflexis." It is shown without leaves. We should not hesitate to call it *N. cyclamineus*, even though the trumpet is rather more flanged than we usually see it—the "anplo calice" of the name. The color notes call for golden yellow for the crown and sulphur yellow for the "leaves," as the perianth segments were called. This particular plate seems not to have been in the volume as first issued, and it is not known when the additional plates were added.

Daffodils must have been popular in France in the early 1600's. The *Theatrum Florae*, first published in 1622, included 35. Among them is the same small one as above, this time with the slightly different name "Narcissus hispanic' minor luteus amplo calice folis reflexis," and complete with leaves, bulb, and roots (cut off by the lower margin of the page.) This is the drawing I have chosen to reproduce. This book has no text at all, and did not even bear the name of the artist, Daniel Rabel, who was identified much later when the original drawings from which
some of the engravings were made came to light in the Bibliothèque Nationale in Paris. Rabel was prominent in his day in several fields of art, including portraiture and designs for the ballet.

It is probable that the plants seen and drawn by Vallet and Rabel petered out after a while and no fresh bulbs were imported. The curious "little Spanish daffodil with reflexed leaves" was forgotten. Later in the seventeenth century and eighteenth century many kinds of narcissus were described and illustrated, but not this one.

During the years 1802-1816 a magnificent collection of color plates of bulbous flowers—Les Liliacées—was published in eight large volumes. The artist was Pierre-Joseph Redouté, and Joséphine Bonaparte was his patroness. Eighteen beautiful plates of narcissus are included, followed by a list of narcissus species prepared by the Swiss botanist, August Pyramus de Candolle. He divided the genus into six sections, of which the fifth is called "Les cyclaminéens (cyclaminei)." Here, in a group consisting chiefly of triandrus species, appears for the first time the name N. cyclamineus D.C. There is no description, but the illustration in Theatrum Florae is cited as authority.

English botanists of the early nineteenth century were not satisfied with de Candolle's simple classification. In the years 1812 to 1837 the genus narcissus was divided into six (later fifteen) genera by R. A. Salisbury, into sixteen by A. W. Haworth, and again reduced to six by William Herbert. Salisbury does not mention N. cyclamineus, and seems to have considered our Theatrum Florae illustration a representation of what we now call N. minor pumilus. Haworth includes cyclamineus in his genus Ajax, following the smaller trumpets, citing the Theatrum Florae plate and indicating by an asterisk that he had not seen the living plant. Of the numerous species thus marked he wrote "... any so marked, the writer of this Monograph would be glad to receive bulbs of, from any one... and... would cheerfully and thankfully return any of the species or varieties he has described, which are duplicate with him, and which may be requested."

Herbert's unwillingness to accept as species those known only from illustrations and his scorn for the crude drawings in some of the early books led him to write "N. cyclamineus... is another absurdity which will never be found to exist... I have no hesitation in rejecting it as a non-entity." He thought the figure in Theatrum Florae probably represented a triandrus variety with the cup incorrectly given.

Our little daffodil has been renamed after 200 years, but was still known only from the two early illustrations.
The eighteen seventies and eighties brought a great revival of interest in daffodils in England and Ireland. F. W. Burbidge published his book *The Narcissus* in 1875. This book included a “Scientific Review of the entire Genus” by J. G. Baker of the Royal Herbarium at Kew. By this time it was realized that many of the plants called species by earlier writers were hybrids or garden varieties; existence or records of the plant in the wild state became one of the marks of a species. A Daffodil Conference was held in London in 1884; garden magazines contained many contributions on daffodils. In the December 19, 1885, issue of *Gardeners’ Chronicle* Burbidge, in an article on old gardening books, mentions the illustrations in *Jardin du Roy* and *Theatrum Florae* of the “most singular” narcissus with the long reflexed perianth of *N. triandrus* and a long trumpet. He goes on to say “This is such a curious thing that I give a small tracing of the flower in the hope that some modern grower after old daffodils may recognize this as an old friend if he should perchance meet with it in his rambles during the next spring.”

Strangely enough, the species had been collected in northern Portugal the previous spring. Credit for the discovery had been given variously to Eugene Schmitz, Edwin J. Johnston, and Alfred Tait, all residents of Portugal and enthusiastic amateur botanists. Dried specimens, accompanied by color illustrations by Prof. J. A. Henriques of the University of Coimbra and Mr. and Mrs. Tait, were sent to the Royal Horticultural Society in London in time to be displayed at a meeting on April 27, 1886. In the descriptive material accompanying the specimens it was stated “It varies much in size; there are plants from 9 centimetres to 35; the same difference is found in the flowers and in the leaves.”

The same year bulbs and seed were sent to England and Ireland, and several prominent daffodil enthusiasts were able to report that they had
blossoms early in 1887. In that year large numbers of bulbs were imported for sale and the species was launched as a garden and greenhouse subject in the British Isles. A short note in Garden, Feb. 25, 1888, signed W. E. G., tells of seeing a pot containing over a 100 bulbs, almost all in bloom, in a seedman's window in Cork. The writer was surprised to learn that the bulbs were so small—many not much larger than a pea—that no one would buy them the previous autumn.

The species was illustrated in Curtis's Botanical Magazine in 1887, with a historical note and Latin and English descriptions by J. G. Baker. The English description is as follows:

"Bulb globose, half an inch in diameter; outer tunics whitish. Leaves generally two, sometimes three to a bulb, linear, suberect, greenish, deeply channelled down the face; broadly keeled, and the keel margined with two raised edges, down the back. Scape subterete, always single-flowered, half a foot or so long; pedicel almost always cernuous, so short that the spathe is pushed back by the reflexing segments when the flower expands. Ovary turbinate; perianth tube very short, obconic; segments narrow oblong, lemon-yellow, nearly an inch long, strongly reflexed from the base. Corona as long or a little longer than the segments, rather deeper in colour, nearly equal in diameter throughout; edge erect, distinctly crenate. Stamens inserted at the throat of the tube, erect, connivent, more than half as long as the corona. Style reaching generally to the tip of the anthers. Capsule turbinate, nearly an inch long."

Later botanists have noted that the bulbs are usually single rather than double or triple-nosed, and the chromosome number has been found to be 14. A. J. Bateman reported that clones are self-sterile. When fertilized by other clones, however, seed is set freely, with sometimes as many as 150 seeds to a pod. Prof. Henriques reported in 1887 that Mr. Tait had found a double-flowered variety, but I do not know whether this referred to doubling of the corona or was a case of two blooms on a stem. One year recently three of my plants produced two-headed stems, but this seems to have been only a temporary aberration.

Few Narcissus species have escaped changes in name as different botanists have developed different interpretations of their relationships. In the case of N. cyclamineus the only disagreement seems to have been as to who should have the credit for first naming it in the Linnaean system. Although it has been attributed to Haworth and to Baker it seems agreed at present that the listing by de Candolle takes precedence, and so his initials follow the name to give us N. cyclamineus D. C.

H. W. Pugsley, in his "A Monograph of Narcissus, Subgenus Ajax"
(Roy. Hort. Soc. Jour., Feb. 1933), places *N. cyclamineus* and *N. Johnstonii* in a special section “Cyclaminopsis” of the subgenus *Ajax* Spach. Abilio Fernandes retains *N. cyclamineus* in the subgenus *Ajax*, but considers *N. Johnstonii* to be a hybrid between *N. pseudo-narcissus* and *N. triandrus*. In his “Sur la Phylogenie des Espèces du Genre *Narcissus* L.” (Soc. Broteriana Bol., 1951) Dr. Ferandes traces the presumed development of *N. cyclamineus* from a primitive form of the subgenus *Ajax*, probably by the accumulation of gene mutations.

A few river margins and damp meadows in northern Portugal and the adjacent northwestern corner of Spain are the only locations where *N. cyclamineus* has been found growing wild. These are areas of heavy rainfall and high humidity, and *N. cyclamineus* is one of the few *Narcissus* species that grow in marshy places. W. E. Ingwersen noted that it seemed to be found only in granitic districts. Due to heavy collecting and to changes in water levels and in land use in its limited natural areas *N. cyclamineus* is now almost extinct as a wild plant. Miss Muriel Tait, niece of the Alfred Tait mentioned previously, in whose garden in Oporto the species naturalizes in abundance, is making efforts to recolonize it in suitable places in Portugal, assisted by contributions of seed from England.

Whatever the future holds for the species in Portugal, it has found congenial homes in other lands, most notably in the Royal Horticultural Society Gardens at Wisley, where it blooms by the thousands each March. As with other species, however, its greatest future may lie in its use in breeding, now entering a new phase with the appearance of second-generation crosses. That is another story.

**DAFFODILS**

*Like sunbeams on a window sill*
*That break through winter sky,*
*The glow of spring’s first daffodil*
*Invokes a happy cry.*

*And then through each ensuing day,*
*With trumpet, cup and crown,*
*The daffodils will dance away*
*Till summer slaps them down.*

——GEORGE NICHOLAS REES, Nixa, Mo.
FROM THE PRESIDENT’S DESK

After just about the driest summer and fall on record in the northeast, our older daffodils have been replanted and the new ones put into place, plus their appropriate labels, with the extra precaution of “road maps” to indicate their position should animals, tiny tots, or inclement storms play havoc with the markers.

We prepared and tucked away in our cold cellar a little over 50 pots (including, I blush to admit, a few tulips and hyacinths) hoping to cajole them into bloom during the barren winter months. We’ll later pot a few more and sink them, covered with leaves, in our area windows, to tide us over the interval between the Pasadena convention and the time our own New England winter relaxes its grip on our regular outdoor plantings.

* * *

The fall Board meeting in Paducah, early in October, was a memorable occasion, made particularly so by the gracious hospitality of Dr. and Mrs. Roof, who entertained us all in their lovely home, and in general acted as efficient and tireless hospitality chairmen.

* * *

Dr. and Mrs. Throckmorton have extended an invitation to hold our Board meeting next fall in Des Moines, an offer which was enthusiastically accepted. Incidentally, over 40 persons, mostly Board members and their spouses, attended the Paducah meeting. The business sessions themselves, as well as all social gatherings, are open to all.

The suggestion is made that more non-Board members, those living within driving distance, as well as others attracted by the prospect of a lovely fall weekend, always characterized by hospitality and good fellowship, seriously consider being on hand. The meeting will be either the first or second weekend in October and will be announced at the Convention and in our JOURNAL, so that plans may be made in ample season. If you consider attending, write our secretary, who will be glad to include you on the list of those receiving advance reservation notice. For those who attend, it really furnishes a second and more intimate annual convention.

* * *

Owing to a series of unfortunate emergencies in the Tuggle family (which are now, we are pleased to report, on a much more even keel), our fall JOURNAL was delayed well past the original target date. Our sympathy goes out to Harry, and our thanks for his heroic efforts under most difficult circumstances.

—JOHN LARUS
PASADENA AWAITS THE 1965 CONVENTION

Preparations for the 1965 ADS Convention in Pasadena are more than well under way, according to word from Mrs. Michael A. Gallucci, president of the Southern California Daffodil Society and Far West Region director.

Opening officially on March 18, the annual meeting will conclude with the banquet on Saturday, March 20, with Judging School II taking place the following day. Headquarters hotel will be the Huntington-Sheraton in Pasadena, described by Mrs. Gallucci as “the most picturesque in our area, lending itself to a ‘floral’ convention.”

Room rates for the convention will be $12 per day single, $15 per person double, with suites at $26, $30 and $36. There is no charge for children in the room with parents, and the rates will apply for those arriving a day or two early, or staying an extra day or so. A Continental Breakfast is served without charge.

Arrivals by air will reach the hotel by hourly limousine service direct from Los Angeles International. Arrangements are also being made with the Sante Fe Railroad for a special car for ADS members from Chicago direct to Pasadena, and Mrs. Gallucci says that if as many as 150-200 members would prefer to travel by rail, the Sante Fe will provide a special train from Chicago. The rail route would have stops in St. Louis, Kansas City, Tulsa, Oklahoma City, and Amarillo.

The speaker at dinner on Friday, March 19, will be Mrs. Muriel Merrill, an ADS member who is the only non-Japanese master of the School of Ikebana (Japanese style flower arranging). Dr. William S. Stewart, director of the Los Angeles Department of Arboreta and Botanic Gardens, who at the moment is on a lecture tour in India, will speak at the closing banquet. It is possible Mrs. Lionel Richardson of Ireland will reach the convention on the return from a trip to Australia and New Zealand which she is making this winter.

Anticipated leaders of the panel discussions include Grant E. Mitsch, Murray Evans, Allen W. Davis and Lee Hannibal, with the possibility of Jan de Graff and Frank Reinelt also being present.

Tours of private gardens on the convention schedule include the homes of Bob Hope, Mary Pickford, Meredith Willson, and Don Morrison, the latter home being renowned for its Japanese garden.

In a recent letter to President John Larus and ADS directors, Mrs. Gallucci wrote, “We feel we will be able to entertain you at a very fine convention, and all of us wish to give you a sampling of Southern California hospitality. Everyone, everywhere, is most eager to make your stay with us a pleasant and memorable one... the best convention of the American Daffodil Society.”
AN IBERIAN ADVENTURE

By Mrs. William R. Taylor, Old Lyme, Conn.

On March 27 of this year I sailed for Spain, determined to see daffodils in their native habitat, as I was going to miss all the lovely hybrids in my own Connecticut garden. Mrs. Roennfeldt's thoughtfulness in sending me her own copy of Mr. Frederick G. Meyer's Exploring for Wild Narcissus before the new supply was available, whetted my enthusiasm. I assiduously studied the pamphlet while crossing the Atlantic and coached my travelling companions, my husband, his sister and brother-in-law, so that four pairs of eyes would be watching for these small flowers.

We landed in Algeciras, and travelling by car were able to see and enjoy the interesting countryside. Southern Spain was a riot of bloom of many flowers and shrubs, both wild and cultivated. Their beauty defied description, but I kept wishing in vain for daffodils. Not even in a garden was there one. On April 22 we left El Escorial for a day trip to Segovia. We climbed for miles on a road which snaked its way along to the Navacerrado Pass. Here, less than an hour from Madrid, were snow, ski lifts and winter. The road, Route N. 601 descends from this spot, through pine woods to the plain around Segovia.

Near the village of Pradera, at the edge of the pine woods, my eye caught a brief flash of something yellow. Before I could ask the driver to stop, we had rounded a bend of the road and on our right, no doubt about it, there were daffodils and spring. My excitement was contagious, and all four of us scrambled out of the car to investigate. On the west slope of the hillside were outcroppings of granite, and in the crevices of the rocks were drifts of bright, golden yellow N. rupicola. After the thrill of discovery had subsided a bit, I tried to be scientific. With my tape measure I found the reed-like foliage varied between five and six inches. The perianths of the blossoms measured about an inch and the coronas three-eighths of an inch. The decision of all was that there was a fragrant odor. After taking pictures, I was persuaded to leave, so on to Segovia we went. On the return trip I was allowed a few minutes to enjoy again the little beauties before we returned to our hotel in El Escorial.

Here, to stretch our legs a bit, we took a short walk in the gardens, and there in a sandy path were two narcissus of a different variety. The entire north slope of the garden and the light pine woods behind it were covered with it. We had passed them several times and I was looking too far afield to see them. I believe that these were N. triandrus var. cernuus. The plants were, at their largest, six inches tall, the flowers bicolored with the corona a deeper color than the perianth segments.
Very early the next morning I was looking for the gardener, to ask if he would dig some for me . . . I had brought import stickers with me, for just such a contingency. I found a trowel, a spade and no gardener, and was sorely tempted to steal, but for the sake of international good feeling and to be truthful, in fear of the ubiquitous state police and his fancy patent leather hat, I refrained. Just as it was time to leave on a sight-seeing expedition I saw the gardener. I speak French but no Spanish; however, I had discovered that the doorman spoke a bit of French. With him as interpreter, I asked the gardener if he would dig some daffodils for me and pot them. I showed him pictures in Mr. Meyer’s pamphlet and a nice smile told me that he understood and would do me the favor.

At lunch time I returned to find a six-inch pot filled with daffodils, fritillaria and a small daisy-like flower. When I asked my friend the doorman where I could find my benefactor to thank him properly, I discovered that he was not the hotel gardener, but a friend of the doorman and the caretaker of the estate across the road, whose rock garden I had been ogling for several days. I had been the instigator of larceny, no doubt, but not the least daunted I stored my treasure in the car and went across the road where I spent a delightful half hour looking at and admiring all the rare and beautiful flowers, trees and shrubs my friend cared for. As we did not speak each others language, we conversed in Latin . . . that is, in botanical names.

Madrid was our destination that afternoon, and when we arrived at our hotel, I would not entrust my posies to the little chico who escorted us to our rooms, but tenderly carried them myself. Following the pamphlet’s instructions, I washed the dirt from the good-sized bulbs (that is, they were larger than I had thought they would be), and prepared them for mailing, using plastic bags from our picnic basket, part of a cosmetic kit and cardboard and paper from a cookie box. These were directed to the inspection station in Hoboken to be forwarded to my yardman. This package and a letter to the yardman with directions for planting were entrusted to the concierge to be sent airmail. I went to bed that evening feeling that I had discovered more gold in Spain than had the Conquistadores in the New World.

Tuesday, April 28 we started north to Burgos. Near the Somosierra Pass, 3,500 feet altitude, right beside Route N 1, we again saw daffodils, Unfortunately this was a heavily travelled road, and as there was no available pull-out to park on, I had just enough time to photograph one flower. These were growing on top of a bank, in a wet boggy meadow, where they received full sunshine all day. The rounded leaves were four or five inches tall. From the spathe to the end of the cup was one inch and the cup was well over an inch wide. The color was a pale lemon
yellow, therefore undoubtedly the flowers were *N. bulbocodium* var. *citrinus*.

Mr. Meyer's expedition found these three types blooming earlier in 1957. The *N. rupicola* was found in Portugal where the climate is usually milder than in Spain and the altitude lower. The *N. bulbocodium* he found was in bloom a month earlier but at San Sebastian, at sea level as opposed to an altitude of 3,500 feet. The *N. triandrus* var. *carnus* we both found in El Escorial within ten days of each other. I was grateful for a later than usual spring and the luck that produced them for me.

We left Spain a week or two later, but did not return home until the end of May. I had no news of the bulbs, and was so happy to find that they had reached Old Lyme and were safely planted in pots. As well as I can figure, it had taken about ten days, so that the foliage had not been in very good shape, but surely my luck will last and they will survive to bloom again. If they are as happy in Connecticut as in Spain and seed themselves as easily as they apparently did, I hope in time I can share seeds or bulbs with others.

**GRANT MITSCH HONORED WITH MGCA GOLD MEDAL**

The Gold Medal of the Men's Garden Club of America was awarded earlier this year to Grant E. Mitsch of Canby, Ore., an outstanding hybridizer of daffodils and other flowers, at the MGCA's 1964 convention in Atlanta.

An article in the May issue of the MGCA publication said:

"Mr. Mitsch became interested in growing daffodils as a hobby in 1933 and a year later did his first hybridizing.

"By 1945 he had developed many attractive seedlings and decided to sell his gladiolus business and devote all his commercial efforts to daffodils. He has grown more than 600 named varieties of daffodils and has introduced nearly 100 of his own seedlings, many of which have won top awards in North America and England.

"Mr. Mitsch was a charter member of the American Daffodil Society and presently has a reputation as one of the world's great daffodil hybridizers.

"Ten years ago, Jan DeGraaff, himself a noted grower and hybridizer, was asked his opinion of Grant Mitsch as a hybridizer of daffodils. DeGraaff said, 'Grant Mitsch ranks among the 12 outstanding hybridists in this field in the world. In addition to his skill and patience, he has a real love for work and that is a necessary quality for a hybridist.'

"Since then, Grant Mitsch has risen even higher in the ranks; he now is accepted as one of the few top hybridizers in the world."
HYBRIDIZERS’ FORUM

Greetings to all our hybridizers! This section of our new Quarterly is yours: for your questions, which we shall endeavor to answer; for your comments, which we solicit; for short articles, excerpts from Round Robin letters, announcements, and news items of special interest.

This first issue is devoted mainly to some suggestions contributed by several of our more experienced breeders for beginners. In the next issue we’d like to hear from some of the beginners—and by beginners we mean all who have not yet bloomed a seedling—telling of their special interests, their problems, and their suggestions for making this section more useful and interesting. We cannot promise, but there may be prizes for the first five or six contributions received. Send your contributions to Mrs. George D. Watrous, Jr., 5031 Reno Road, Washington, D. C. 20008.

A Word to Beginners

Enthusiasm, knowledge, and perseverance are qualities needed in breeding daffodils. A backward and a forward glance are essential—backward to study pedigrees, forward to the needs and possibilities.

Many areas are lacking in types that flourish. In these categories, if only the most vigorous varieties are used as parents for seedlings, in time the situation can be improved.

A beauty that is short-lived is a heartbreak. When beauty is combined with vigor and endurance it becomes a heartthrob. Don’t accept defeat! Varieties supposedly sterile have occasionally responded.

Publications of the RHS and ADS contain much information, and it would be wise to secure back issues. Joining a Round Robin would also provide fun and information. Many experienced breeders would give personal help and some would even share bulbs.

Breeding daffodils is exciting and satisfying. Sometimes it is even rewarding. More growers should know this joy.—Eve Robertson.

Hints to Beginning Hybridizers

There is still tremendous room for improvement in the first three daffodil classes, but as these fields have been worked so extensively by most professionals the remaining classes seem to offer more possibilities for real breaks. Very often first generation hybrids between species (particularly triandrus and jonquilla) and the large-flowered garden varieties are sterile, and one comes to a dead end so far as future progress is concerned, but outstandingly different seedlings may occur
in this first generation. And to those who have the time and are willing
to try crosses involving these hybrids, there always is the chance of
finding one which is fertile; we believe that it is here that some of the
distinctive advances of the future will be made.

Crossing between the various miniature species offers another field.
Most often such hybrids tend to be poor growers or to give little in-
crease, but there are exceptions, and with the greatly increased interest
in small flowers there should be real opportunities here.

In the first three classes there is need for work to be done in selecting
the most vigorous and disease resistant named varieties and seedlings,
to be used in a breeding program aimed at the development of varieties
equal to the best on the market today but more amenable to growing
in difficult areas. We need not only sunproof reds but reds that will
develop coloring consistently everywhere, pinks that are pink on first
opening and do not fade, and whites that will thrive in warm climates, to
mention only a few. It will take many hybridizers to achieve these
goals.—GRANT E. Mitsch.

Some Moderately Priced Daffodils for Breeding

Few beginners wish to invest in new, high-priced varieties. Being new
and expensive does not necessarily qualify a flower as the best for
breeding. Some of the older and less expensive varieties are known to
transmit good quality to their offspring; in fact, many of the best new ones
have been raised from them.

There are many others, of course, but the following list includes some
with which the writer is acquainted which have proved themselves
good parents. With a few exceptions, they retail for $1 each or less.

1a—Kingscourt, Goldcourt, Kandahar, Moonmist; 1b—Content, Ef-
fective, Frolic, Trouseau; 1c—Cantatrice, Kanchenjunga, Beersheba,
Petsamo, Broughshane; 1d—Entrancement, Nampa, Spellbinder.

2a (yellow—Galway, St. Keverne, St. Issey, Carlton; (red cup):
Armada, California Gold, Ceylon, Fireproof, Klingo, Narvik, Playboy,
Tamino, Tinker, Dunkeld, Indian Summer; (rimmed cups)—Aranjuez,
Diolite, Red Riband; 2b (yellow or pale crowns)—Festivity, Green
Island, Polindra, Willamette; (pink crowns)—Interim, Loch Maree,
Mabel Taylor, Pink Lace, Radiation, Roman Candle, Rose of Tralee,
Wild Rose; 2c—Greenland, Ludlow, Truth, Zero; 2d—Binkie.

3a—Ardour, Chungking; 3b—Bithynia, Blarney, Limerick; 3c—
Chinese White, Cushendall, Frigid, Silver Salver, Dallas (sets seed but
not proved); 4—Falaise; 8—Matador; 9—Cantabile, Dactyl, Shanach,
Smyrna; 10—N. poeticus poeticus recurvus.—MURRAY W. EVANS.
**On the Subject of Pollination**

I pollinate daffodil blooms on the second day they are open and then usually follow with pollinations on the two succeeding days, unless it is quite evident that the first pollen applied is sticking well.

Many factors are involved in successful daffodil pollination. Temperature and rain are two. If the flower opens during a period of cold weather the stigma may not be receptive on the second day, but I do not believe anyone can state what the critical temperature may be that brings on the stickiness that holds the pollen on the stigma. Rain following pollination on the second day can wash away the pollen applied on that day. By following the practice of repeat pollinations I have had reasonably good seed production.—WILLIS H. WHEELER.

**Some Publications for Beginners in Daffodil Breeding**

It is not necessary to be a student of botany or genetics to make daffodil crosses, but most beginners would profit by doing a little reading on the subject of plant breeding in general, and daffodil breeding in particular. The publications listed below are only a few especially recommended for beginners.

*A Handbook of Breeding Ornamental Garden Plants.* Brooklyn Botanic Garden Record, Summer, 1959. 112 p. This is one of the most valuable small publications that I have seen in this field.


The books on daffodils by Alec Gray, Michael Jefferson-Brown, and Carey E. Quinn contain sections on breeding. Nearly every issue of our own *Yearbook* and that of the RHS includes one or more articles on various aspects of the subject. Winter is a good time to read them! —ROBERTA C. WATROUS.
THE STORY OF RANCHO del DESCANSO

By Frances Combs, Yucaipa, Calif.

Descanso Gardens! Outdoor Show Place Supreme!! Where each year thousands of admiring people stroll over smooth lawns under giant oak trees that were growing here when Columbus discovered this continent. Where lively little streams invite ducks to swim . . . and often little boys who take off their shoes and go wading. Where all gardeners can observe the growth habits of many kinds of trees, shrubs, perennial plants, and bulbous-type flowers. These gardens are open every day of the year. There is no admission fee, and on each visit one finds new beauties and new things to see. Flower lovers and members of the general public, young and old, have visited these gardens in the live oak forest by the thousands. Most of them come back again and again. It offers a different attraction each month of the year.

The area in which Descanso Gardens is situated has an interesting history. It is in LaCanada Valley of wide rolling hills and broad plains, seven miles long, bounded on the north by the Sierra Madre Mountains and on the south by the San Rafael Hills. The valley reaches eastward to the Arroyo Seco and the city of Pasadena, and it is a very short drive to the city of Los Angeles on the south. The gardens cover approximately 165 acres, more than 25 are shaded by the gigantic California live oak trees, making it a wonderfully natural area of beauty.

The early inhabitants of the LaCanada Valley were Gabrielino Indians, who spoke the Shoshonean dialect and lived in the entire Los Angeles basin. The green and fertile LaCanada Valley was well supplied with water from the many canyons of the Sierra Madres. These Indians were nut-gathers, depending on native oaks for their mainstay, supplemented by valley grasses, herbs, and small game. Their villages were large and fairly permanent. Those who built brush huts along the Arroyo Seco and near the San Rafael Hills called the land Haleameupet. Until 1880, the Linda Vista section of Pasadena (now filled with lovely homes and gardens) was the site of a large Gabrielino village. Relics and implements have been excavated in Descanso Gardens. Their hard-worn path may still be seen beside an ancient creek bed.

The first “official” land owner of Descanso Gardens was the King of Spain. This was in 1769 when the Spanish came with Caspar de Portola and claimed all of California. The next owner was a white settler named Jose Maria Verdugo, a native of Baja California. He was a corporal attached to the Mission guard. In 1779 he married Maria de la Encarnacion, daughter of Ignacio Lopez, and in 1784, he petitioned Governor Pedro Fages for a tract of land, asking it in return for his faithful service.
His plea was granted and he was given 36,000 acres, the second and one of the largest grants in California. One condition for the grant provided that no harm should befall the Mission, the Indians, or the newly founded pueblo, Reine de Los Angeles.

Verdugo built his first buildings of stone where Glendale now stands. He built a dam and aqueduct for irrigation and called his rancho La Zanja (the ditch). Later, the name became Rancho San Rafael, and the hills surrounding the gardens are still so known today. The Verdugo family, enriched by five daughters and a son, worked their rancho and prospered. Great herds of cattle, horses, and sheep roamed the hills and valleys and the name of Verdugo is still important in the story of California.

Quickly bridging many years, let us come to the modern history of Descanso. Shortly after World War I, Manchester Boddy, a New York newspaper man, came west to recover his health, after long service with the Army in France. Looking for a home away from the city, he saw the lovely rolling hills, covered with the live oak trees, and knew this was the ideal spot for his future home. He bought the land in 1937 and built a beautiful house on a high promontory, the structure we now know as Hospitality House. Mr. Boddy was interested in planting the grounds to flowers and shrubs, and he also realized that the deep layers of oak leaves that had been dropping for hundreds of years would be ideal for the growing of camellias. The first camellia at Rancho del Descanso was planted the year Mr. Boddy bought the property, but the really widespread plans for the gardens began in 1941. Roads and trails were laid out, the ancient stream bed cleared out and directed throughout the lower levels, and additional plantings of native California trees and shrubs were made, to accent the beauty of the camellias that were still to come.

The goal of self-support for Rancho del Descanso was achieved in the fabulous success of the camellias. In 1942 alone, $40,000 worth of grafted camellia plants were sold. A lath-house was devoted to the cultivation of thousands of young plants. When Japanese-American nurserymen were compelled to move to relocation centers, they were paid a fair price for their myriads of young plants which would otherwise have been abandoned. By 1943 there were 600,000 camellia plants in Rancho del Descanso.

Dr. Walter E. Lammerts joined the staff in 1945, engaged for research and development work. Already a famous hybridizer, he contributed important new varieties of ceanothus, leptospermum and roses, many of which received world acclaim. Culminating a two-year search in the Orient for rare camellias in 1948, he brought to Southern California a group of hitherto unknown varieties of Camellia reticulata. This is a
completely different species from the well-known and popular *Camellia japonica*. The exciting adventure of transporting small plant propagations of these reticulatas from Kunming in the Yunnan Province of China to Rancho del Descanso is a modern-day botanical romance. Fifteen varieties were propagated and distributed as important collectors' items. These spectacular Oriental exotics with their magnificent large showy flowers have been grouped into a special planting of their own at the South end of the gardens.

Mr. Boddy retired from the publishing business in 1953, at which time the County of Los Angeles purchased the land and administered it under the Department of Parks and Recreation. This meant that it could be open to the public, and paved the way for further study and development of plants. To facilitate this plan, in 1958 Descanso Gardens was placed under the jurisdiction of the Los Angeles County Department of Arboretum and Botanical Gardens.

In addition to so much shade, there are wide sunny acres too, and these had to be planted for further beauty. Dr. Lammerts was again called in for consultations. The result is quite evident in the now famous Descanso Rose History Garden, where wide curved beds of roses are placed according to their years of discovery—the first beds you pass hold roses known before the Christian era. They progress by 100-year periods until 1850, after which new introductions came thick and fast, and the roses are displayed in beds spanning about 25 years each. Six acres are devoted to the Rose Gardens.

A note from Superintendent Anthony informs me that the attendance for the fiscal year 1963-64 was over 380,000 persons. And ADS members might like to know that many thousands of these visitors come during the annual daffodil show.

This show as far as we can learn, is the only outdoor daffodil show. Thousands of daffodils are planted in great drifts in the gardens and hundreds are planted in huge pots along the walks and patios to greet the visitors. The specimen blooms of daffodils are displayed on long tables, sheltered from any possible inclement weather by coverings and back-wall shelters of plastic. Blooms come from everywhere, sent in or brought in by individual gardeners and commercial growers.

It is interesting to watch the visitors to the show walking slowly along the tables, taking notes of the varieties that each one hopes to grow in his own garden. The show is presented by the Southern California Daffodil Society and its many affiliates, and approved by the ADS. Flower arranging exhibits and the Judges' School are held in the Hospitality House. With the coming of the ADS Convention in March, 1965, we all are deep in plans for the enjoyment of our many visitors coming from faraway places.
MINIATURES ROUND ROBIN

I think that what we need more than anything else at this stage is simply more varieties which can qualify as miniatures. At this time of growing interest in miniatures, it is imperative that the number of approved varieties and the supply of bulbs be expanded as rapidly as possible. Closely related is the problem of sufficient outlets, so the average gardener with ordinary perseverance can get a little collection of miniatures and try them out.

Right after a longer list of varieties and a satisfactory trade situation I would place permanence. . . Of course a certain amount of unpredictability will always be present in miniatures as a class. That element is a challenge to venturesome gardeners and can be an asset to the group as long as there is a large number of varieties for the numerous run-of-the-mill gardeners who want only good performance and aren't interested in challenges.—GEORGE S. LEE, JR.

How to grow the more difficult species seems to be a problem with many. . . It appears that hardiness to cold is less of a problem than meeting some of their cultural requirements. Several of them seem to be susceptible especially to various fungus and bacterial troubles. Grown in a cold greenhouse, we find most species prone to rot off at soil level frequently about flowering time or later, and many are especially susceptible to botrytis, even in the field.

We have been having trouble with N. triandrus even when grown in the woods, but they are looking much better this year than usual at this time. Evidently higher humidity and temperatures favor this trouble. N. cyclamineus seems to be settling down to better performance, and while past experience indicated that it seldom made any vegetative increase, some rows that had been down for four years gave up to four or six blooms from some bulbs, with stems that must have been nearly 12 inches. Apparently seed set will not be as heavy as some years, but a lot of seedlings several years younger, and down for three years, bloomed most profusely with most blooms setting good pods.

A group of seedlings from N. asturiensis x N. cyclamineus, which had been blooming for several years and grown in dense shade, was very nearly uniform for hybrids. They had been flowering on stems about six to eight inches high. Last summer they were dug and replanted in a more open spot in the woods and this year came on stems about a foot long. A group of N. asturiensis grown next to
them were also transplanted and they too had stems about nine to twelve inches. I am at a loss for an explanation, as they had always been short before.

I think we commercial growers have as many or more unanswered questions as amateur gardeners! One indisputable fact, however, is that perfect drainage is even more essential with many species than with the larger garden daffodils.—Grant E. Mitsch.

I am wondering whether the lack of permanence in the miniatures is not due to the small size of the bulbs. More shallow planting and small size makes them vulnerable to the cold of our winters, even with a snow mulch. The fluids within the bulbs help prevent them from freezing, but in the very small bulbs there is naturally less fluid combined with salts, etc., therefore more chance for freezing. I don't think we can do much about this factor except protect against cold.

—Helen K. Link.

MINIATURES: PROCEDURE FOR REVISING APPROVED LIST

Any ADS member in good standing may submit recommendations for changes in the approved list of miniature daffodils. Recommendations for the removal of any variety now on the list should be sent to Allen W. Davis, chairman, Committee on Miniature Daffodils, 3625 S.W. Canby St., Portland, Ore. 97219. These recommendations should be accompanied by statements of reasons for the proposed action.

Recommendations for additions to the list may be sent to Mr. Davis or to Mrs. Richard N. Darden, Jr., Box 116, Newsoms, Va., or Mrs. James F. Birchfield, R.D. 3, Ashburn, Va.

All recommendations for change should include the following information concerning the variety:

Name of variety, classification, color;
Width of bloom, length of stem, number of bulbs grown by you;
Type of soil in which grown;
How many years you have grown the variety;
A photograph of the flower (color if possible);
Names and addresses of at least two members submitting the recommendation.
HOOP-PETTICOAT DAFFODILS IN SOUTH ARKANSAS

By Carl R. Amason, El Dorado, Ark.

Most modern authorities, the Royal Horticultural Society included, now consider two species of narcissus in the Hoop-Petticoat complex: *N. bulbocodium* and *N. cantabricus*. Both species are highly variable, with considerable differences in the foliage, blooming time, and color of flowers. To most gardeners and daffodil growers, however, they are all just Hoop-Petticoat daffodils. With a modest collection one can have one form or another of the two species in bloom from November to April in the lower middle south, including extreme South Arkansas, during a winter of normal temperatures. And having a few dependable winter-flowering plants growing outside with no special winter protection has its own fascination.

The differences between the two species are highly technical, but to the gardener the *N. bulbocodium* forms are some shade of yellow and bloom from midwinter to spring, whereas the *N. cantabricus* forms are white or whitish and bloom in the fall or early winter.

At this time all the sorts listed in commercial sales catalogues are approved as miniatures by the American Daffodil Society. Recent botanical literature has described forms growing in Spain and Portugal with flowering scapes over twelve inches tall, but how they will grow in cultivation remains to be seen. The quality of the flowers is more substantial than the appearance would indicate. They stand freezing weather excellently, and hold up fairly well in rain, although many critical judges of daffodils would describe them as thin, weak, ribby, or poor in texture. Proportions are pleasing and they do possess charm and grace. My main complaint is that they so often come with an irregular number of petals to the almost hidden corolla. Even if they are not ideal show flowers—and few bloom at the the prevailing show times—they are potential material for future garden varieties. Their crosses and hybrids could easily become the future RHS Division XI or XII, depending on which group, the collared or Hoop-Petticoat, gets the most attention from the hybridists in the near future.

Normally the winter season of the south is a series of cold waves of varying lengths intermingled with warm spells. These cold waves can be from a few hours to two weeks in duration, with lows of 15° to 32°. Warm spells can last from several days to two weeks, and it is during these times that the winter flowers come forth. It takes winter temperatures lower than 10° to damage the Hoop-Petticoat flowers. For the last three winters temperatures in most of the south have been extremely
bitter, with readings below zero common in the lower middle south. Still the Hoop-Petticoats have tried to flower, and many times were successful. Somehow they continue to survive without winter protection, even though there was no snow cover and the ground was frozen to a depth of about five inches. It is somewhat more difficult to establish new bulbs in such winters, though, as they are planted only an inch or so deep.

The soil in South Arkansas varies from red clay to white sand. My place is a mixture of clay and sand, in all possible gradations. It is acid. Rainfall is usually adequate except in July and August, when the threat of drought is always at hand.

Just how many varieties, forms, crosses, or hybrids of the Hoop-Petticoat daffodils exist at this time is anybody's guess, but they are numerous. It is difficult to obtain more than just a few, though. So many are offered as collected bulbs, and the chance of getting mis-named material is very real. I am listing only those that I have grown during the last six years. They are all planted in the open, without any special winter protection, and all are still growing in the original spots where they were planted, in spite of the last three unusually severe winters. They are listed in the order of flowering, beginning in the fall.

*N. caniabricus monophyllus*. I purchased this in 1957 as *N. bulbocodium monophyllus*, and it is still listed as such in most catalogues. Few, if any, list *cantabricus* as anything other than *bulbocodium*. This is the first of the Hoop-Petticoats to bloom for me which it does in late November. To me it is not a true white, but a pale cream which the daffodil world terms "whitish." It does well for me, possibly because it blooms before "ole dreaded" January, when it has received some winter damage to the foliage. I do not recall whether it has ever set seeds. The form that I grow is not single-leaved as its botanical name would indicate.

Nylon is next, and it is usually listed as the first to bloom for most growers. It is a hybrid between *N. bulbocodium romieuxii* and *N. bulbocodium monophyllus folioso* (now *N. cantabricus cantabricus folioso*). Nylon seems to vary considerably, and the ones I have are no better than the wild forms that I also grow. I can expect blooms between Thanksgiving and Christmas. The flowers are only whitish. I cannot be generous enough to call them white.

*N. bulbocodium tenuifolius* is usually in bloom with Nylon. It is a pale yellow and is a prettier flower than Nylon. The foliage is narrow and for me it tends to split bulbs and is not as prolific with its flowers as some of the others.

*N. bulbocodium romieuxii* comes into flower some time after the
first of the year, when we can expect anything in the way of weather—usually bad. It is hardy and in warm spells gives good flowers, quite large for a Hoop-Petticoat, and pale yellow. I doubt if it would be as good even a 100 miles north of me.

*N.bulbocodium romieuxii rifanus* is smaller in stature and in flower, also pale yellow. It is one of my newer bulbs, and I do not feel that I have had it long enough to really appraise it.

At this point in the listing we have arrived at the time of the year when most of the forms of *N.bulbocodium* are coming into bloom, late February and early March. Those that bloom in February are not late enough to escape damage by cold always. The foliage is seldom damaged, and what damage is done affects that part of the stem immediately below the immature ovary. From now on the varieties do not bloom in strict sequence, and the effect is largely of all coming into bloom about the same time.

*N.bulbocodium vulgaris citrinus* is a good one. It is a light yellow, a color that is popularly described as lemon, hence the Latin “citrinus.” It has a well fluted and flared cup and grows to approximately four inches. It is more susceptible to wind and rain damage that most because of the larger flower and rather thin stem.

*N.bulbocodium vulgaris nivalis* is the smallest of all the daffodils I grow. It is tiny. The first one I had came in a shipment of *N.cyclamineus*. It has never failed to bloom on a stem about one inch tall, with a cup ¼ or ⅜ of an inch across. I'm somewhat hesitant to point it out to the general run of my daffodil visitors, as the small size does not arouse interest or excitement, but rather dislike or contempt and comment that is rather caustic for it as well as for anyone who would grow it. Others that I have obtained true to name are not quite so tiny, but still very small, with a color darker than lemon but not so deep as golden. I always seek them out and enjoy them in a manner out of proportion to their size. They have been dependable and undamaged in my garden during the past three winters.

*N.bulbocodium albidus zaianicus* and *N.bulbocodium serotinus* are two which are too new with me for evaluation. I only hope that I shall marvel at the blooms and dependability of *N.b.albidus zaianicus* as I have at the name. *N.b.serotinus* is not listed in the latest issue of the RHS Classified List, so it must be a newly described subspecies, but it is catalogued as the Giant Hoop-Petticoat Daffodil with stems up to ten inches tall. At any rate *N.b.serotinus* is not to be confused with the autumn-blooming *N.serotinus*. There is a lot of difference!

Also too new to evaluate properly are the three sisters of Nylon that I have: Jessamy, Taffeta, and Tarlatan. So far they have not bloomed for me as early as Nylon.
N. bulbocodium tananicus is another whitish one, and may be the whitest of them all. Its upright cup catches your eye and also catches the heavy spring rains.

N. bulbocodium obesus is one of the latest to bloom and it is different. One does not have to rely on some vague and insignificant botanical feature to see the difference. To me it is a real “fatty” and it is well named. It blooms late, too late to be damaged by cold. The foliage grows well ahead of the blooms, and the thick, fat (for a bulbocodium) leaves grow prostrate on the ground. The buds come forth as fat spears between the leaves, and the stems remain short and stocky, and are crowned with golden pleated flowers that always have an over-supply of tiny golden petals with a green stripe down the middle of each. So many of the other Hoop-Petticoats lack definite distinguishing points that I would not attempt to call them by name in other gardens—I’m not sure that all of mine are true to name—but I wouldn’t hesitate to name N. b. obesus in any garden.

N. bulbocodium vulgaris conspicuus is the last of the line-up to bloom, and it is the best performer of all. If your space is limited, and you can grow only a single representative of this species, this is the one for you. It is the easiest to acquire and that is fortunate. It is golden yellow in color, and blooms late enough to escape all the ravages of winter, but is hardy enough to grow almost any place where daffodils can be planted. My stock blooms late in the season, but some stocks that have been in the south for many years bloom still later. Mine have been with me for a long time. They are quite slow to increase, but that is true for all the others, too. Neither have I found any evidence that they have self-sowed as some of the other species have done.

I have never been successful in raising Hoop-Petticoats from seeds. They rot the second summer when I try to grow them in pots. It is probably a question of over-watering.

The future of the Hoop-Petticoats will depend on their appeal to collectors of the unusual in daffodils. I doubt seriously if they will do well, in general, north of a line from Little Rock, Ark., to Memphis, Tenn., along the southern boundary line of Tennessee to the Piedmont, and on north to Washington. I am satisfied that in my area all forms will give some flowers most winters after they are established. In extensive collections we can expect to find a daily flower, weather permitting, all winter long.

For individuals interested in working with the Hoop-Petticoats the fun is just beginning. Few hybrids have been registered, aside from the series of winter-blooming ones mentioned above, bred by the Englishman D. Blanchard. Alec Gray and F. R. Waley have written of natural hybrids of N. bulbocodium and N. triandrus in Spain and Por-
tugal, and Mr. Gray's Kenellis and Mr. Waley's Sennocke are hybrids of garden origin from the same parents. More crosses and hybrids can be expected to appear. One of the most fascinating Hoop-Petticoats to turn up in recent years is one described by Miss Caroline Dorman in Plant Life, 1961, which has two blooms on the scape. Could this be one of these hybrids?

This listing is far from complete. Many more subspecies and varieties are described in catalogues, popular gardening books, and botanical literature. The one that has made a name for itself most quickly is N. cantabricus cantabricus petunioides. Judging by its picture, it is lovely. It won the RHS First Class Certificate in 1960—no small accomplishment for a wild flower.

Most of the well-known dealers sell a few Hoop-Petticoat daffodils. Most are reasonably priced. The challenge is great to acquire as many forms as possible. May there always be Hoop-Petticoat daffodils, someone to grow them, some to write about them, and someone to talk to about them.


MY HEARTE WAS SO FLOODED WITH
A BLISS . . .

"And soe at last I came to a certayne spott I wotted of where alle around the bankes of a tiny lakelet stood a whole hoste of Daffodillies growne tallle and statalie and fayre; neither coulde there haue been lesse than thousandes of them, so that the whole earthe coadjacent seemed strewen thick with bright yellow flakes of golde; and whenever a smalle wynde came they bowed in greate rowes lyke a sea of golden starrs. I know not why it was, Amadis, but certes my hearte was so flooded with a bliss and strong love longinge that big teares of tender joye did fill mine eyes, and soe I lay me downe upon a greene banke of Grasse and sweete herbes, and gazed at those fayre blossoms with gentle joyance. . . ."

From a letter written in 1610 by Ralph Cunnyngham and quoted (pp. 286,287) by Wilfrid Blunt, Esq. in Of Flowers and a Village, St. Martin's Press, N.Y.
NARCISSUS CYCLAMINEUS AND A FEW OF ITS CHILDREN

By Grant E. Mitsch, Canby, Oregon

Interest in species hybrids, and particularly those involving that rather capricious elf, N. cyclamineus, is riding high, and both the hybridizer and the gardener who merely wants small daffodils desire this sometimes contumacious species in their gardens.

Inasmuch as one cannot duplicate the environment in which most species grow, it becomes the gardener’s problem to imitate its as nearly as possible, or to provide certain factors that are peculiar to its needs. In past years many of the species daffodils were collected in the wild while in bloom, and it is quite obvious that their resentment at such treatment would be evident in their performance where they were transplanted many months later, thousands of miles from their original homes, and under vastly different growing conditions. Often such bulbs were nothing but mummies when planted.

Being asked to give some suggestions for the culture of N. cyclamineus when I have far from mastered an understanding of its requirements must give rise to an answer that is at least partially speculative. For years it sulked and not infrequently disappeared, but recently it is giving the appearance of thriving in some of our plantings. Whether this is due more to luck, or to understanding its needs is difficult to say. Apparently it requires plenty of moisture during its entire growing season, but with perfect drainage; our practice being to plant the bulbs over a thin layer of peat moss. If the soil tends to be heavy or if it compacts readily, a layer of sand beneath the moss seems desirable.

Most of our bulbs are planted at the edge of a wooded area where the soil is constantly being built up with decomposing leaves, primarily fir needles. During their dormant season, the soil is kept from excess moisture by roots of nearby vegetation. Here bulbs that had been down four years gave stems nearly twelve inches long with flowers in proportion. Some bulbs produced three and four flowers after having been self-pollenized the year before and producing in some instances up to 150 or more seed per pod. The soil is sufficiently acid so that rhododendrons thrive. Finding a place to their liking, I am inclined to believe that they prefer not to be disturbed. Perhaps the bulbs should be stored in peat moss while out of the ground to prevent any dehydration. I have not taken this precaution. Since it usually is sparing with offsets, increasing it by seed is the normal means of propagation.

Fortunately, most cyclamineus hybrids are more amenable to ordinary
garden culture than the species, and on the whole they seem to be a hardy lot although some of them make rather unattractive bulbs.

Selecting a dozen favorites is not an easy task and there is a prone-ness in trying to visualize them to see instead of, or along with them, some seedlings, both those appearing here or in the gardens of Mr. Fowlds! Hence, we trust that we will be pardoned if two or three of our own are mentioned.

First on our list would be Charity May. Fine form, clean color, and smooth finish along with the characteristic reflexing associated with these hybrids are notable in this excellent flower. One of the largest in the class, and with broader perianth than most is Woodcock, a flower with many good qualities, while Jana comes with nice form and is one of the very first flowers to bloom. Few flowers last so long as Bartley, or Peeping Tom, which seem to be identical although the stock grown under the former name is more prolific with blooms some years. It is hardly of exhibition caliber but is a most attractive garden flower.

The older February Gold may not be quite as fine a flower as others in this list but for dependability it ranks high. Mite is the smallest of the lot and most like its species parent in form, and it is one of the first to flower. It is a delightful and worthwhile rockery plant. Estrellita is an F2 cyclamineus hybrid, and unlike the others mentioned, its perianth is flat, but it still had something about it to remind one of its forebears. Its vivid soft lemon coloring spills over into the stem and foliage a bit.

All of the above-named varieties are yellow, and they were mentioned together because of this similarity and not because they were the first seven in our affections. The first named is perhaps our favorite of the lot, and two others from C. F. Coleman, Jenny, a near-white flower of most exquisite form, and Dove Wings, a pale bicolor of most graceful proportions, stand near the top of the list. The diminutive Cyclataz could not be denied a place in this list, and having tazetta blood in its pedigree, it is distinctly different with its clusters of tiny flowers.

The old variety Beryl with its poeticus ancestry adds still more variety in form, and it is still deserving of being included among the best. To round out the dozen we would name Satellite as having the most vivid orange red coloring as it grows with us of any that we have seen, although reports indicate newer ones of superior brilliance. Some others might have been named as better flowers than some of these but for the fact that they were less distinctive or were weaker growers, or were less well known to us.
MINIATURE NEIGHBORS IN THE ROCK GARDEN

By HELEN C. SCORGIE, Harvard, Mass.

It is well to consider first the type of rock garden in which miniature daffodils are appropriate and the ways in which miniatures may be effectively used. If the rock garden contains largely ground-hugging plants with brilliant flowers covering the leaves, it is no place for small daffodils. Even if these have a spot to themselves, their more delicate shapes and colors are obscured and, sooner or later, the more rampant plants will seize their territory. In such a garden, the lower growing standards such as the poetics may be used to better effect.

The miniatures may be grown singly, in clumps or in small groups. The rock garden does not lend itself well to growing bulbs in drifts. Even if it is blended into other parts of the garden, it always gives the feeling of definite limits. Drifts are more satisfying for naturalizing, even with the miniatures. They suggest motion which should not be blocked.

The appeal of the little daffodils—aside from the greatest one of their littleness—is the nuances of their shapes (the entire plant as well as the flower) and their poise. They are for the most part so near the species that variants are frequent. Rocks, a solid background of dull green or the brown earth, make the best foil for them.

Ground covers with matted roots sooner or later (usually sooner) strangle the small bulbs. For variation, however, shallow-rooted annuals may be used, such as the annual sedums or the scarlet pimpernel (Anagallis arvensis). I love particularly the latter in its blue form (forma caerulea) in which the petals are bright blue with a scarlet throat from which the golden stamens protrude. Both bloom later than the daffodils and are self-perpetuating.

Visual labels are a potential danger to any rock plant, including the daffodils. A chart is a necessity, but for convenience, a flat small label may be pushed into the ground out of sight, and temptation to the visitor to crush the little daffodil with the heel in order to find out the name is avoided.

Nothing excels the dwarf conifers as companions of the miniatures. They are of themselves rock plants of the highest interest. Most of the best-known conifers have one or more dwarf forms. Only miniature forms should be used in the rock garden, of course, and even these may take a sudden notion to put on height. But, after testing out a few years, one can gauge the annual growth and plant the daffodils at a safe distance. The tiniest one I have grown is Hertz Midget, a sport of our native arborvitae (Thuja occidentalis).
Of dwarf forms of the deciduous flowering shrubs, I have found none suitable for the rock garden in this climate. Many rock plants are technically shrubs but spread too widely to make good neighbors for small bulbs. There are, however, some of the broadleafed evergreens that are attractive in themselves, low growing, and excellent associates for the daffodils.

In this garden, heathers alone rival the daffodils for first place. But most attempts to grow them together have resulted in the heathers steamrolling the daffodils out of existence. Many are mossy in growth and too fast growing to be safe for little daffodils. A few, such as Calluna Foxii nana and Sister Ann are delightful and slow-growing plants that do not crowd out small bulbs.

Quite different from the heather are the tiny forms of the box. The two that I have appear to have obtained their full growth at ten inches in all directions. They have proved absolutely hardy here without protection except for the three feet of snow that they acquire each winter.

Of the herbaceous plants with which small daffodils may be grown there are such a multitude that only a sampling can be mentioned. They should not be spreaders in any of the assorted ways in which plants annoy the gardener. Those that sleep late underground are, perhaps, somewhat more preferable but those that take over just as the daffodils are through are needed too.

Of the pinks, the mat-forming ones belong elsewhere in the rock garden if at all. The industrious seeders are safer in the perennial border. For the rock garden and as companions to the little daffodils, there are a number of ones forming small rosettes. These are easily raised from seed, but until the seedlings flower, one cannot be sure that the seedlings are true to name. Dianthus neglectus is a long-lived little plant with large rosy flowers, buff in reverse. Dianthus alpinus is another good associate for the miniatures. It seems rather short-lived here.

The campanulas are another genus that combine well with the daffodils. They are generally not visible when the miniatures are blooming, but at blooming time may completely cover the ground where the little daffodils stood.

A plant quite different from those mentioned above and with a different usefulness is our native ebony fern, Asplenium platyneuron. It is the only native fern suitable for the sunny rock garden. Its need for a cool root run makes it especially desirable.

Finally, we must not forget the goodly number of not-so-small daffodils that did not make the Miniature List. The list was compiled for the show table and many of these others look well with their smaller brethren.
A SUGGESTION ON THE DORMANCY PROBLEM

By Thomas F. Martin, Ashland, Va.

As if there were not enough problems involved with the breeding of daffodils to get even a few seed from certain crosses, now here comes the additional problem of dormancy in the seed. But then when were daffodils ever the meek, mild ones to foresee and obey the wishes of every one who would raise and show them off? Our present-day flowers come from gypsies, haughty, proud and perverse. They toss their proud heads in utter disdain, while resisting all attempts made to tame them.

Now that the subject has been brought up in the 1964 Yearbook, ("Some Technical Aspects of Breeding," W. L. Brown) it seems logical that daffodils would present this problem. Narcissus, for the most part, leaving out possibly the tazettas and the general jonquilla complex, come from regions where the climate is a contrast between warm summers and cold wet winters. The flowers represented by Divisions I, II, III and IX come from N. pseudo-narcissus and its subspecies together with N. poeticus and its subspecies. All of these are native to lands where there is a cold winter with freezing weather.

In order to cope with this situation where a warm growing season is followed by a cold, apparently dormant season, nature appears to have built into the seed a mechanism that responds to an after-ripening period induced by cold.

A number of years ago correspondence with the late Henri Correvon of Chêne-Bourg near Geneva, Switzerland and the raising of many things from his lists of alpine plants brought out the idea of dormancy and the breaking of it through cold. This does give results with many, many species of plants. If it were to work with daffodils then the matter would be simple.

Primula and Helleborus niger are two plants both of which have seeds that apparently are quick to lose viability when stored ordinarily in a container awaiting the time for planting. They are difficult if not impossible to germinate immediately or very soon after being harvested. The writer did have sad experience in this respect. Happily, however, possessing a few plants, their seed upon harvesting was frozen in cubes of ice. When planted the following spring the Helleborus germinated 100% and the Primula came up like the proverbial hair on the dog's back.

Survival of the species is important. It may frequently depend on something sometimes not obvious. Suppose one were to follow the
vicissitudes of the seed of *Helleborus niger* or of a narcissus species growing in the wild from the time when it is ripe and drops to the ground where it awaits the following spring to sprout and grow into another individual. What happens? The seed ripens and falls to the ground, say in early summer. There it remains some months before cold weather. One is not interested in those seeds eaten by insects, birds or animals; nor those that fall on barren ground. Nature has evolved into this seed a constitution consistent with an environment which man can easily create and control perhaps even better than nature herself.

Spring, the season when the embryo awakens and sends forth a tiny probing root-tip, is some months away. Just what happens within the seed itself during the summer and early fall months is not apparent. Perhaps nature ordained this for a relatively quiet period when the rains are washing the seed away from too close proximity to the mother plant, carrying it down into the mouldering vegetation, camouflaging it with mud and making it safe against its enemies, and at last depositing it into a tiny crevice of soil. Here the early frosts of autumn help to bury it a bit deeper in the earth. The deep freeze of winter gives it that final sound sleep—no, not sleep really in the sense of inactivity, but a dormancy, a state of subdued activity, that is so necessary to fill it with vigor and urgency to come forth, with the return of the sun and springtime, a vibrant, living, growing individual ready to meet the challenges of every day of living.

It is this sleep that is not really sleep that counts. This, for want of a better word, is a gestation period. There in the womb of enclosing soil, frozen, but not in the same sense to the seed as it would be to warm-blooded life. Evolution has made of this freezing a thing of necessity and as much needed by the seed and embryo of certain plants as the womb of the mother is to the developing foetus of warm-blooded life.

Coming back to daffodils. Some years ago, having a lot of *N.jonquilla* that bloomed exceptionally well, the writer found a great deal of self or open pollinated seed, which when harvested amounted to about half a cupful. Knowing that I could not devote the attention necessary to raising them on successfully I sent them to Alec Gray, who reported that they must all have germinated as they came up thick. *N. jonquilla* comes from the warmer parts of the Iberian peninsula and the Mediterranean seacoast, so probably and rightly does not require a freeze for after ripening.

Most breeders are working in Divisions I, II and III, so this is where this dormancy problem would seem to be. Some crosses may exhibit this tendency more than others. The writer, never having
planted daffodil seed, does not know to what extent it exists. How many people are there in the Society who are making crosses? There would seem to be quite a number. As I understand the Society, we are banded together for mutual aid in gaining more knowledge about our particular field. It would seem that breeders could this season try out this method of freezing some of their seed and upon germination send in their results so that the matter could be reported. Ten people reporting would be good, 20 still better. How many individuals report to the Symposium?

Breeders may not wish to risk their special crosses to an experiment; none should be blamed for this for they have much at stake. Because there must be variability in the degree of dormancy, it could be well for a number of breeders to make crosses, count their seed and freeze them and report the following year. If there are those who are willing to enter into an experiment such as this, the writer will undertake to compile the results and make a report to the Society. However, please drop me a card saying that you are willing, so one can know how many persons are involved and when all the reports have been received.

The seed would naturally be kept separated as to crosses, etc., and the number should be tabulated. The easiest method of freezing a few seeds at a time is to imbed them in an ice cube. Let the water begin to freeze so that there is a coating, then break the thin top of the cube and drop in the seed, then let the cube freeze solid. The frozen cubes then be stored in the deep freeze in a labeled container. I leave it up to you to keep up with your cross numbers and recording devices yourself.
PRESERVING DAFFODIL FLOWERS

By Polly Anderson, La Canada, Calif.

Some tazettas, species and miniatures come so early that they are gone and forgotten by the time show time rolls around, and many are the comparisons one would like to make between these early ones and those similar which bloom at later dates.

Then too, a new hobby has been started among ADS members of comparing the tazetta and jonquil types which bloom in the deep south, on the Atlantic Coast, the mid-south and Southern California. Names for these favorite old timers are many: Seventeen Sisters, Grand Monarque, Pearl, White Pearl, Scilly White, Scilly Isles, Little Sweeties, Early Louisiana, Intermedius, and Butter Cup. There are many, many other local names for these various forms. No one seems to be able to pin down the original common names or the true botanical names of many of them.

Gertrude Wister suggests that we dry these interesting species and hybrids and bring them to conventions for comparison and identification. They might even be entered in an educational exhibit in many shows where the fresh flowers might never be seen.

There are several methods of drying, the simplest being the use of fine dry sand. Old timers recall when borax was used for drying flowers, and also a borax-cornmeal combination, but these borax-dried flowers require careful brushing afterward to remove the film that clings to the petals.

The newest material available in the garden stores and florist shops is a fine white silica-gel containing small blue crystals which indicate the drying power of the material. After the gel has been used repeatedly it absorbs more moisture than it should, so the blue crystals recognize this fact and turn pink, telling us it is time to dry out the mixture. A long period in a slow oven dries the silica gel and renews the blue color of the telltale crystals. Then the material can be used over and over again to dry more flowers until it again has absorbed too much moisture.

Most small flowers, leaves and stems will dry readily, but those with succulent or moisture-holding petals, leaves or stems are less successful. They shrink and wrinkle when the moisture is withdrawn.

The small species and miniatures can often be dried with complete stem and a leaf or two.

A soft loose floppy head of the tazetta types for identification purpose only, can be had by breaking the head off with a half inch of stem. Lay this gently on a bed of the silicate gel in a coffee can or plastic
container which can be tightly sealed, carefully spoon more of the material in and around and on top of the florets until the whole head has been covered. Petals can be held or arranged during the process with tweezers or a long pencil to keep flowers from crowding each other or petals from bending. Tightly seal the container and let it stand at room temperature for two to seven days (trial times will tell you which is most successful for you). Too short a time leaves the flowers limp with some moisture remaining. Too long makes them brittle and easily broken. A well dried specimen is firm and dry but still pliable and easily handled. They are best kept and displayed pinned or taped in a plastic box, preferably sealed tightly, but may be opened and handled when necessary.

The art becomes more complicated if one desires to use the finished flowers for arrangements, but with care they make very fine arrangement material, and last indefinitely.

Each floret must be wired separately before placing in the drying material. A very fine wire should be poked gently up the tube into the base of the perianth. Leave the wire long enough to form the length stem you desire. After drying, gather together the florets and hold the wires at a point where the pedicels usually join the main stem, then twist the wires together to form the stem. This can then be wrapped with green pliofilm to hide the wires. (The pedicel wires seldom need wrapping, but if they do, wrap them before joining all the wires together.) If these long wires are too long to place in the drying container they can be coiled in a small circle, but be careful that every floret is placed upright while spooning in the silica-gel.

Yellow and white daffodils hold their color very well; orange and pink tends to bleed out a little but still holds much of the color. The larger the daffodil the harder it is to keep the perianth petals stiff enough to hold their form, but nevertheless, daffodils as a rule can be very successfully dried, exhibited and used in arrangements.

Preserving daffodils is fun and results are rewarding. Let's all try a few and exhibit them in our next shows!
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