The Daffodil Journal

VOLUME 26 NUMBER 4 JUNE 1990

AMERICAN DAFFODIL SOCIETY, INC.

The Daffodil Journal

ISSN 0011-5290

Quarterly Publication of the American Daffodil Society, Inc.

Vol. 26 JUNE 1990 Number 4

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THE DAFFODIL JOURNAL (ISSN 0011-5290)is published quarterly (March, June, September, and December) by the American Daffodil Society, Inc., 1686 Grey Fox Trails, Milford, OH 45150-1521. Second class postage paid at Milford, OH 45150-1521.

POSTMASTER: Send address changes to The Daffodil Journal, 1686 Grey Fox Trails, Milford, OH 45150-1521.

Membership in the Society includes a subscription. $12.00 of the dues are designated for the *Journal*. The Daffodil *Journal* is printed by Williamson Sales and Printing, Inc., 2nd Ave., Franklin, TN 37064.

Articles and photographs (glossy finish for black and white, transparency for color) 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 JULY 5, 1990

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COVER

Bow Bells a new miniature candidate scheduled for introduction by James Wells. (Wells photo)

BULBOCODIUMS AND TRIANDUS

MICHAEL SALMON

(Transcribed from the talk by Michael Salmon at the ADS Convention, March 31, 1990)

Good morning ladies and gentlemen. I suppose I have to apologize for myself for one or two reasons, chiefly because I am not a business man. I just like growing bulbs. If anybody wishes to contact me at anytime my address is available. I can supply them with seeds true to name and possibly via Brent Heath in due course I can supply bulbs and Brent will distribute them on this end.

I am going to go through the bulbocodiums and at the same time I am going to try to answer a lot of the questions that people have asked as we go through. So roughly I am going to go through the whole genus, it might sound like a fairly impressive thing to say. It can be done very quickly and as I go along I will try to draw together some of the points people have

(top) *obeses, viruditubus, graellsii;* (middle) *vulgaris, nivalis;* (bottom) *tenuifolius, conspicuus, ectandrum.*

made so we can clarify some of the things that people have been asking about.

I'll just start off and say, because there is no fossil evidence it is not possible to be precise as to where narcissus originated and to what form it took but by using various sorts of discipline like cytology and phytogeography, it is possible to hypothesize that they arose in North Africa.

As we look at a European map, most of the *Narcissus* species are contained within the Mediterranean basin. Very few species go any further north than the Franco-Spanish border or any further east than Turkey. Just occasionally you get the odd one from Iraq or Syria, which possibly are native narcissus. Any *Narcissus* you find east of that has certainly been transported there by man but in the south I think initially they went very much further south into Morocco and Algeria than they are presently found. About 70 million years ago was possibly the time the proto-*Narcissus* or ancestral *Narcissus* evolved. At that time, the land mass was entirely joined to the European mainland. The Mediterranean Sea was not there. It was a depression in the ground in a totally limestone area and there were various mountain ridges across from Europe to North Africa and these ridges were utilized by the early *Narcissus* to cross from one side to the other. Now at that time, 70 million years ago, the North African area known as the Saharan area was tropical. At that time a lot of species of various genera evolved in this area and then radiated out in all directions. The *Narcissus* group as a whole probably went quite far south into North Africa originally. I am quite sure that if Colonel Kadafi would allow me to go there (Libya) into the Tibesti Mountains in the middle of the Sahara, which are 10,000 ft. high and snow covered, we will find *Narcissus species* there. They certainly grow down the Atlantic coast of Morocco and as far down as Ifrane through Mauritania, a long way down into the desert sand. Now by using the disciplines I just mentioned of cytology and phytogeography, and we can go backwards, we think *N. bulbocodium* evolved probably in the Atlas or the pre-Saharan Atlas Mountains. It is basically a mountain flower wherever it is found. It needs high altitude. Most of the basic 14 chromosomes species are found in high altitudes and the higher chromosome numbers are generally found at lower altitudes. These are the ones moving down to the lowlands at the present time.

Some years ago when I was doing botanical drawings and, just by accident, I sectioned a leaf of *Narcissus* that I was about to draw so I could tell what the cross section was like, I noticed that there was a particular arrangement of the vascular bundles and vacuoles inside the leaf. It did surprise me. I did a few more leaves. Each leaf, I realized, had a different arrangement. It was set out in a different pattern and when I did the whole family and sorted them out, I could see there was a series of patterns that corresponded with each other. In the yellow bulbocodiums you can see that the bundles are arranged equatorially through the middle of the leaf. There are secondary bundles below it and the primary bundle in the middle. There is a different number of bundles to each species. Comparing

it with *N. cantabricus*, that is the white bulbocodiums, you see that the bundles are arranged almost radially all the way around the leaf. Primary bundles are distributed through the middle of the leaf, sometimes in a two or four arrangement. It is on this basis that I decided to separate the bulbocodiums into three separate groups. So you have the yellow bulbocodiums, that is bulbocodium itself, and the second group which is the white bulbocodiums that is *cantabricus*, and, a third group, which is a new section, *N. albidus*. *N. albidus*, except for one instance, are all North African species having a very distinct equatorial arrangement of the vascular bundles. Other groups of *Narcissus* such as *Tazettas, Pseudo-narcissus, Jonquillas* and the like, all have very specific patterns which are common to each species within each section. It is on this basis that I have broken up the bulbocodiums. Here we have an array of bulbocodiums (p. 196) to give you some idea of the size from the smallest which is *tenuifolius* at the left hand side at the bottom to one of the largest ones which is on the top which is *N. obesus*. *N. obesus* in the wild is extremely large, equal to a small trumpet daffodil in size. It is a 28 chromosome plant. It has a potential for hybridization. All the others in the photo are 14 chromosome plants. *N. viriditubus*, which is a new species yet to be described, is entirely green on the tube and on the segments making it a very distinct plant.

Graellsii I have separated out, listing it is a subspecies of *citrinus*. *Bulbocodium citrinus*, as it was called intitially, is *N. citrinus* which occurs from central Spain right to the borders of southwest France. It then goes over the borders of Southwest France, where you get the largest of all *bulbocodiums* with 28 or 42 chromosomes which I will eventually describe in *N. palledensis*. You will notice in the right hand corner, another new species, *N. ectandrum*, recently named by Fernandez-Casas a Spanish botanist. It is a rather isolated *bulbocodium*. In some respects it resembles the plant described by Maire from North Africa as *Narcissus nivalis*.

We will work through the bulbocodiums one by one starting with what I call the standard bulbocodium, *Narcissus bulbocodium var. bulbocodium*. It has quite a wide distribution from Southern Portugal through Northern Spain and into central Spain. It is found almost invariably in meadows and hillsides that are running with water in spring and quite dry later. Quite often you can find flowers floating on the surface of the running water. The plant is quite variable when found in the wild because it has various pressures acting upon it. The bulb tends to react to these pressures—whether is has the amount of water it needs or whether it is fairly dry that year; what is growing about it can encourage it to be fairly tall. It is about three to four inches normally but I have seen it in a very wet year nearly a foot high. The flower diameter is about one to one and a fourth inches. We did see one or two flowers in the show yesterday of *N. bulbocodium var. bulbocodium*. It is perhaps the commonest one to be seen and it is mostly this one that has the huge chromosome range from 14 up into the hundreds. The reason for this I think is that it is presently in

the act of speciating again and we are likely to get even more varieties of new species from this particular group.

The interesting thing about *Narcissus bulbocodium var. conspicuus* is that this one is about the most inconspicuous one. The feature of this plant is that the petals or segments are very rarely more than a sixteenth of an inch wide. This is a very distinct feature and the tube behind the perianth segments is almost entirely yellow down to the ovary. So this is *Narcissus bulbocodium var. conspicuus*. It has a very small distribution in the wild. It is quite common in cultivation but in the wild is only found in two habitats to my knowledge. It tends to grow on rough stoney banks and even in the pockets of sandstone cliffs. It is found in southern Spain. The type locality is a most interesting mountain called Monte Tejeda which is actually a volcanic cone. It has a huge hole in it and you can actually look straight through the mountain from one side to the other. The bulbocodiums grow around about it.

There is a new species, *N. bulbocodium var. veriditubus*, I just mentioned a minute ago. It is a very large, very strong growing plant with 28 chromosomes and has the potential for transmitting its green tube and green segments into other hybrids. It is a meadow plant again and in this case the plant must have had seven flowers initially for only three bulbs. It is a very strong grower. The diameter of the corona is about two inches. It is a particularly deep color which is unusual for bulbocodiums from the Spanish side. It has only been in cultivation for about three years and has proved to be a very good plant.

Now the one on the bottom right hand corner is the smallest of all the *bulbocodiums*. The *N. bulbocodiums var. tenuifolius*. Typically it tends to grow in among scrub on hillsides. The flower very rarely is more than one fourth of an inch in diameter across the corona and no more than five eights to three fourths of inch long. The segments are minute. They are narrower than *conspicuus* and very much shorter in the corona as you can see. It occurs in vast numbers, chiefly in Portugal. It only just manages to creep into Spain. In central Portugal and on down it is a common plant along hedge row sides. It moves into pine woods as well. That is somewhat unusual for it is beginning to move into the habitat of other species and it is one of those plants that hybridizes quite freely with *Narcissus triandrus pallidulus* once it has moved into the woodland areas.

N. bulbocodium var. obesus is the largest of all the bulbocodiums that grow in Europe other than the *N. bulbocodium var. citrinus* form, the pale yellow forms that occurs in southwest Spain. You can get plants of *obesus* there where the flowers are over two and one half inches in diameter if you grow it in good conditions. It tends to be rather short in its pedicel and stalk and the leaves tend to be prostrate. It is a very nice pan plant and it is a very easily grown one. It also comes very quickly and very easily from seed. It is one of my favorite bulbocodiums. I don't know if it has ever been used for hybridizing but I would have thought that as it has 28 chromosomes, it has the potential to be used.

There is another new species that has just been recently discovered. It is an interesting plant because it corresponds with a plant found in North Africa which is called *N. romieuxii* which has the same sort of flaring petunioide flower. It is yet awaiting a name. It also has the same feature as *N. romieuxii*, as does *N. bulbocodium var. nivalis*, of which I say that all the naughty bits are sticking out from it. It occurs in a fairly small area in Monte Vallelands. It has a restrictive distribution. It could well be a new species and will be described later on this year, I hope. It is about one and one fourth inches in diameter.

Now let us discuss the real *N. bulbocodium nivalis*. It is a very distinct little plant. You can see it is very compressed and solid in the wild. It does improve slightly in size where you grow it in cultivation but note the distinct leaves—almost invariably when grown in wild it has two leaves. These are very soft and fleshy and they lay flat on the ground. It certainly cannot be called an attractive plant. It occurs in millions on the ground in the Sierra de Gredos and the Sierra de Guaderrama in central Spain. It carpets the ground so you can walk all over it if you want to and frequently you can find it opening its flowers under a cover of snow. It is one of the only narcissus I know that actually opens under the snow. So when the snow melts the flowers are already squashed flat on the ground by the weight of the snow.

There is a Spanish form of *Narcissus bulbocodium var. nivalis*. I did say earlier today that we have two *nivalis*, unfortunately. Two botanists called two different bulbocodiums, *nivalis*. Graells described this one first in Spain as *nivalis* and Maire, a French botanist, described a Moroccan one and at a very high altitude also as *nivalis*. He thought, by looking at the herbarium sheet, that the two species were the same which will give you some idea of the problems that arise when you are working entirely with herbarium specimens because narcissus make very poor specimens when these are pressed, so we have another problem with names to sort out, and since this small Spanish bulb was described first it will remain *nivalis* and the *nivalis* from North Africa will be renamed *maireii* after the botanist who named it. One is actually quite distinct from the other.

Maire's form of *nivalis* is found in North Africa at a height of about 10,000 feet in the Atlas Mountains. It really gets no rain at all; only the water from the run off of the snow as it melts, and I understand from the locals they get up to four or five feet of snow in this area. If it melts rapidly the plants are very well irrigated just as they are coming into flower. They also grow on the tops of the skyline and on several of the peaks around the habitat of *N. watieri*, which is the highest growing of all the *Narcissus*, found up to 13,000 feet.

Since Maire's *N. nivalis*, looks very similar to the Spanish form you can see how he could have had this confusion. This one has a very much longer tube to the flower, it is almost twice the length of the corona. In cultivation, it makes a very distinct plant from the Spanish. It has some affinity to the one which is waiting to be named with the stamens and style

extruded. This is a North African *nivalis*. Some people may be growing this one and also the other one.

In the Picos Mountains in northern Spain, in early March, the band of yellow which can be seen in front of the lake and in foregound is *Narcissus bulbocodium var. citrinus*. This is what I have now separated out as *Narcissus citrinus* which is one of the pale yellow ones. I took a photograph on a Friday evening, as I was camping down there, and awoke the following morning to a tremendous amount of noise. Coming out of my camper I looked around to see about 1000 people who had come up from Madrid for the weekend and kids were playing football and kicking footballs around and people were setting up tents totally oblivious to all these flowers round about. This is my general feeling about people in this part of the world: they don't really appreciate these flowers and they really are not concerned about the wild flora round about them.

Narcissus citrinus has a very distinct shape, a peculiar sort of trumpet shape with the corona curling in slightly at the end. It is a very long flower about three and one half inches long. It is quite a large bulbocodium. The segments are quite narrow and they have a peculiar habit of standing out almost like a windmill behind the flower. There is very little variation in its form until we get slightly further over in the Vassa area where they become slightly smaller and paler flowers, and these tend to have slightly more chromosomes numbers. Possibly it might have got involved with other bulbocodiums.

There is another paler one which I have made a variety of *citrinus*. It is the one that covers all of the Guadarramas and Gredos mountains. This is *Narcissus bulbocodium var. graellsii*. It is very easy to seed in cultivation. It is a very nice plant varying from fairly smooth medium yellow to almost white. Here again is a 28 chromosomes plant. It is a meadow plant, one of those that flowers before the grass starts growing, generally March or April time. Eventually the grass will be typically meadowland. It is one of those that does not need seriously drying off in its dormant period. The bulbs need to be kept slightly moist all the year around as does *citrinus*. Neither of them need to be seriously dried off otherwise you will dehydrate the bulb. Here again the altitude is 6000 to 7000 feet so it grows cool as well. I recommend *Narcissus bulbocodium var. graellsii* as a nice pot plant.

As a matter of interest, we might mention a few hybrids. If *Narcissus bulbocodium var. graellsii* and *Narcissus bulbocodium var. nivalis* are grown along side of each other the two frequently hybridize as they do in the wild to give you a slightly smaller *graellsii* which carry the same dark yellow color as *nivalis* and just occasionally the combination of the two gives you a flower where the corona will become almost petunioide. These hybrids are well worth having for pot plants in the greenhouse. They are sterile unfortunately as hybrids, but in the wild they occur quite frequently and you can produce it yourself quite easily.

There is a paler version of *graellsii*. It has very glaucous leaves and

from the leaf section it is very distinct. It is quite easy to separate it from the yellow bulbocodiums. As I mentioned earlier about *nivalis, graellsii* has all the naughty bits sticking out in front.

Now we come to the true plant *romieuxii*. The true home of *romieuxii* is in fields in the high Atlas. A lot of plants have been distributed as *romieuxii* in the trade and by private collectors like Jim Archibald and others. He got it from a friend in the middle Atlas. Unfortunately, because of man's action in this part of the world, nearly all forests are gone. The barriers, therefore, for pollinators have been removed. We are now getting tremendous swarms of hybrids of various species that grow there. Some of these hybrids are obviously more vigorous than the parents so that they are slowly wiping out the parents, because the vigorous ones tend to cross with the vigorous ones and the parents perhaps are under some difficulties and are soon swamped by these hybrids. Because of the removal of various barriers to pollinators, we are now getting a number of species involved so we have things named *N. mesatlanticus*, which in fact are just hybrids. It does not occur as a pure strain anywhere at all. They are in fact moving into areas where the white *bulbocodium albidus* grows. We are getting some very interesting hybrids. Actually the true *romieuxii*, to my knowledge, has only has two very small sights in the wild now. All the rest are swamped by hybrids swarms.

While we are in North Africa we should consider the only pure yellow *bulbocodium var. genuinus*, which is perhaps one of the biggest of the yellow bulbocodiums. I have found plants in the wild 14 inches high and growing very strongly. Typically it tends to grow on very acid soil, generally volcanic, on very steep slopes. It needs very good drainage in the wild. The flower over all is about three and one half inches long. There is very little variation in it. It is very good. I mention here that all the North African narcissus are far easier to grow certainly in the U.K. and Europe than any of the Spanish ones; much less temperamental. I think they got used to harsh conditions over the years and now they will just about tolerate anything that anybody gives them. I might add that with very good cultivation, it could well be the biggest bulbocodium you can produce. This is *Narcissus bulbocodium var. genuinus* from the high Atlas.

Before we go on to the *albidus*, consider we have *Narcissus albidus zianicus* from a small mountain area to the north of Marrakech and *N. bulbocodium var. genuinus*. There are many hybrids where these two overlap. It can give you some idea of the potential there is if you really want to do it yourself. The range of shapes and colors and sizes which can arise is quite considerable. There is a whole field open here but please do distribute these hybrids as hybrids not species.

Still in North Africa, there is the new group which I have named as *N. albidus*, one of which is species *N. albidus albidus*. In a typical situation it is a woodland plant generally growing in ancient woodland. By that I don't mean the cedar forests which are mostly gone in North Africa but instead the quite extensive dwarf scrub forest that sort of aggregate over one

another. These *albidus* species tend to carpet the ground rather like English Bluebells do. You get vast numbers of them. They are quite large, they are larger than the *cantabricus* flowers. One of the distinctive features separating the white bulbocodiums, the *cantabricus* from the *albidus* is the shape of the tube behind the segments. In *albidus* all the tubes are trumpet shaped or a narrow funnel shape. In *N. cantabricus* all the tubes start off being funnel shaped and then inflate before becoming parallel to the back of the segments again. It is this very distinct feature that separates them, as well as the leaf sections. This is *albidus albidus*. The diameter (of the corona) is two to two and one fourth inches. It is a beautiful plant, quite common throughout the middle Atlas and the high Atlas in very localized areas with quite a wide distribution, and various forms of it actually go down the southern side of the high Atlas into the Saharan side of it so you have a wide spread and, it is very tolerant of a wide range of conditions in cultivation. It comes easily from seed and normally flowers in the third of fourth year even in the U.K. It probably would also flower in this country in the third year. It is a very fertile plant, crosses freely with a lot of the other species and very freely over there. While we are on the *albidus* group we will move down into the Southwest part of the high Atlas mountains. It is a very isolated area which is all limestone. It looks like the mountain in front, almost entirely tufa. Obviously a long time ago a huge waterfall came over the top and deposited it there on this spot.

This is the home of another *N. albidus*. This is *N. albidus tananicus*. All white and again the tube is more or less funnel shaped not swollen as *cantabricus* tubes are. While I mention this one, *tananicus* has been a long time in the trade not only in Great Britain but also here and in Europe. The plant was distributed as *Narcissus tananicus*. *Narcissus bulbocodium tananicus* or *Narcissus romieuxii tananicus* which is a small white flower which tends to look upright on a vertical stem a very small flower with a short corona with all the stamens protruding from the top of the corona. That unfortunately is not *tananicus*. It was misidentified quite a long time ago. Ida ou Tanane is the area from where Maire described it. The other one is a form of *albidus* which has to have a new name. Possibly it will be described in a short time by a Spanish botanist so I can't preempt him.

The true *Narcissus albidus tananicus* is slightly smaller than the *albidus albidus*. Equally easy to grow, this one interestingly has a very good scent. I find with my nose I can discern little scent in bulbocodiums. This one has a very pleasant primrose scent. So for those who like to pass scent on in daffodils, this has a potential.

In an unlikely habitat, on the edge of the pre-Sahara at a place called Ouioun-du-dra, which is really a desert area,—the rainfall here when it actually comes in any one year is no more than one half inch or so—is where you find the largest of all the white bulbocodiums. This is *Narcissus bulbocodium albidus var. kesticus*. The flower is about two to two and one half inches in diameter. It a a beautiful plant, one which I think has

tremendous potential for small hybrids within the bulbocodium complex. I have not actually tried to get any of this pollen onto other species groups. I think you will agree this is a superb narcissus. I believe if it is possible to get further down into the Sahara you will actually find this group growing there, my guess would be. I don't know whether any of you are interested in other species of bulbous or tuberous rooted plants, but a new cyclamen species has been recently described from Somalia on the eastern end of the Sahara and similar groups of plants tend to grow together. I would guess at some stage or another *Narcissus* went down through the Sudan and as far as Somalia along with the cyclamen. I don't know of anybody who has done any work down there. To get into that part of the world, unless you happened to belong to an oil company, is very difficult. So there is a potential further down the Sahara for this type of *Narcissus* to be found.

Narcissus albidus zianicus is rather a lovely species. Above Marrakech in North Africa there is a group of low hills which have this species as a dominant plant. Unfortunately, it is getting more difficult to find this true now, because it is in an area that is under a great deal of cultivation. The barriers have been removed again. We have several of the pale yellow species which grow in the area and which are tempted now to cross. The original is getting to be quite a scarce plant. We are getting the hybrid swarms again coming along from all sorts of sources. Unfortunately the pollinators for these are virtually all the same thing, all are small solitary bees. The bee hawk moth pollinates all of them. The small woodland areas actually tend to isolate one group from another because very rarely would the bee hawk moth go into shade, so those *albidus* that grow in shady situations are fairly safe. Those like *zianicus* that grow out in open ground tend to get pollinated quite frequently with foreign pollen so in a very short time you will actually lose the species as a true species altogether. As an example of what I am talking about, one was crossed with *romieuxii*. It is exactly the same flower form but has taken on the further extruding stamens of *romieuxii* and *romieuxii's* color. This is getting to be very common among these hybrid swarms in North Africa. There are not too many in Spain as yet. I think the Spanish actually have not done so much damage to the interior part of their country as the Moroccans are presently doing and have been doing for the last two or three hundred years.

Another example of what I am saying is *romieuxii* again with *albidus albidus* and there are endless crosses growing around where the two species overlap. This gives you some idea of the breeding potential. There is an entirely petunioide form which occurs quite frequently. Such is possible, I suppose, if you want to expand on that and maybe in the past some of this has happened. So, plants like *romieuxii* may already have been produced by hybridization in the past, but now through the stabilizing of the chromosomes they breed true. It seems possible that this process is maybe one that has gone on before. It is sort of a cycle of species being produced and lost. It is an interesting lot of flowers with

much potential for hybrids within this group.

The plant that was originally called *albidus* or *bulbocodium tananicus* is now due to be renamed later this year. I think quite a number of you who are into the species will have seen it and grown this one. It is a proliferous and attractive plant to grow. It is the smallest of all the *albidus* group. It usually is no more thant two or three inches. Very rarely do its flowers exceed three fourths of an inch in diameter and are extremely floriferous and attractive plants.

Now we move on to the other white bulbocodiums. This group is the Cantabricus Section or *Cantabricae*. *Cantabricus cantabricus* grows typically on scrubby hillsides and hedge row banks and sort of edges the fields under cultivation. It is a fairly stable plant in the wild. There is very little variation. I have photographed it through its entire range, which is from the southwest of Spain through central Spain and over into eastern Spain almost as far as Madrid. It is a large area that it covers but there is very little variation from one side of the country to the other. In actual fact there is very little difference from the Moroccan and Spanish forms. You can see what I mean by considering the inflated tube. It goes from the top of the ovary and curves outward rather than being trumpet shape as it is in *N. albidus*. This is a very distinct feature between the two. This is the one probably grown by a lot of people and the most frequently available one.

N. cantabricus foliosus—I don't find it a very attractive plant. It is too narrow and too long in the corona. Some clones tend to be rather more milky white than true white. In the wild it is now a very rare plant. Ten to fifteen years ago it indeed covered the northwestern half of Morocco. It was a frequent plant anywhere you happened to go. All that area now is so tremendously cultivated the flower hardly exists. Literally there are only isolated bulbs here and there so in the wild this is a very endangered species. Fortunately it is one that is very well established in cultivation. Anybody who grows it knows that it is very prolific and a very good grower and of course it has been used in a number of hybrids in years past. It still has a potential as it is a 28 chromosome plant.

Here again is a typical central Moroccan situation which is part of Monte Tazzeka. Monte Tazzeka is not just a single mountain, it is a full range of mountains which together is called the Monte Tazzeka Massiff. This is where we find *Narcissus cantabricus var. monophyllus*. Now, a lot of people complain the plants that they are growing, supposedly of *N. cantabricus var. monophyllus*, have more than one leaf. It is most likely in these cases that it is a form of *cantabricus* which you are growing because *monophyllus* literally means one. In the wild, and even in cultivation, it should have only one leaf. Quite frequently in the wild it actually acts the same way as *Narcissus serotinus* and *elegans* do. The flowering plant will dispense with leaves and will use the flower scape, the length of scape with a seed capsule on it, for photosynthetic purposes and will not bother with leaves. It is only immature plants or seedlings that produce leaves. It is intermediate in size between *N. cantabricus* and *N. albidus*. It is about one

and three fourths inches diameter. It is a very attractive plant. This one occurs quite frequently through North Africa through the Rif Mountains down through the Monte Tazzeka Massiff, and down into Algeria as well where it is a slightly smaller plant. It has a wide distribution. The habitat tends to overlap that of others, chiefly *N. cantabricus*, and of course the yellow forms.

Where you get *cantabricus* and *monophyllus* overlapping you get a plant, that is *petunioides*, and in actual fact *Narcissus petunioides* is called *monophyllus var. petunioides*. *N. petunioides* is a hybrid between *cantabricus cantabricus* and *cantabricus monophyllus*. Therefore the clones that are in cultivation, which were raised by John Blanchard's father some years ago, are actually from North African material. The province is not known. It seems likely that it came from this particular area of Monte Tazzeka, so therefore there is a hybridizing potential of course, because the one in cultivation is a solitary clone. Now I have brought in quite a lot of this material. It is quite variable in size and not only are some perfectly flat or discoid as I call it, some of the coronas actually recurve rather like an umbrella back over the tube. There is a potential here for hybridization. So there is a series of hybrids between the two species.

In one part of the range, in an area called Sefrou Sefrou, this hybrid has now stablilized itself and breeds true and all the *cantabricus* in that area are this plant. I have released some of this to the trade recently. In a short while there will be plenty more. I have raised it through five generations without any variation at all. It appears to have stabilized in this area. I will probably name it *vascinatus*, this is now *N. cantabricus vascinatus*.

There is another range of a hybrids between *cantabricus cantabricus* and *cantabricus monophyllus*. I mentioned already the one where the corona reverses back over the petals. It almost looks like the old fashioned gramophone. It is about one and three fourths inches in diameter, with a wide range of potential hybrids.

Now we will recreate the name *N. cantabricus clusii*. It is a distinct plant. It always grows with very short pedicels sometimes about only one inch long. The foliage is always prostrate and extremely fine. There is one small semi-desert area in southeastern Spain where this is the predominate species and you can see actually millions of it in flower here. The diameter is about two inches. It is a very large flower for *cantabricus*. This a *Narcissus cantabricus var. clussii*. It has proved to be a good doer. I also raise this plant and Jim Wells also has some of this now. I think it is behaving in exactly the same for you isn't it Jim? (Answer Yes). I can recommend this one, *N. cantabricus var. clusii*.

Now to return to the hybrid swarms in North Africa. Some people have been asking me where can they get a yellow *petunioides*. Well, I will be shortly releasing one as a yellow *petunioides*. It appears to be a good species in its own right. It has now come true for five generations. I am not happy about describing it as a species as it might just be a hybrid that is beginning to stabilize itself. In a short while if people are interested in it I

will give this one sort of a grace(?) name and release it as a yellow *petunioides*.

I have transferred *Narcissus hedraeanthus* into the cantabricus group. From its leaf sections it is obviously a *cantabricus* hybrid. It is an ancient *cantabricus* hybrid were talking about, thousands of years old. It is a hybrid that has completely stabilized itself. It now covers a very large area of south central Spain around the Sierra de Cazorla where it grows in marble and limestone chips. It is very distinct in habit with the flower stem coming out of the ground at a acute angle, about 45 degrees or there about. It sets seed very freely and very prolifically. It flowers and seeds in cultivation. It has an unusual characteristic in that it is one of the quickest of all the species to ripen the seed and unfortunately the very second the capsule starts going yellow at the end, if you want to save the seed, it must be collected immediately because in a matter of hours it will be completely dry and the seeds will drop. It is one that is easy to propagate and I am surprised there is not a lot more of this one in cultivation. The diameter of the flowers are about one and one fourth to one and three eighths inches. Just recently a variety of this one has been found, which will be described later this year, in an area somewhat to the north of the Sierra de Cazorla, quite separated by a mountain range, which has larger flowers with a deeper yellow color. It also is a very attractive plant. It is about twice the size and a slightly deeper yellow than the usual one. It will also be available soon. It grows on fairly level ground. The usual characteristic is that most of the *hedraeanthus* grow on more sloping ground whereas this one tends to grow on level ground and a fairly high altitude.

Another selection of the *petunioides*, one to be named later this year, is a flower which is nearly three inches in diameter. This is a magnificent plant I found quite by accident in the high Atlas where I was actually collecting plants of *Narcissus watieri* at the time, and this came up with them. I have no idea of its parentage but it is one which is breeding true. I will be surprised if it is a true species because there was not sufficient amount of it. It might be a hybrid itself. It also has potential for hybridizing. I have already used it myself on a few small crosses and it seems to carry over the *petunioides* characteristics. It is a very large flower which is one of the choice features about it.

In one small place in southeast Spain we have the plant that was originally described as *Narcissus bulbocodium tananicus* or grown as *N. tananicus* which is in fact a *N. albidus* form. It occurs in one town, Puertollano, and earlier, I was describing this plant which always comes exactly the same. Its parentage is *Narcissus albidus albidus* and the other half of the parentage is *Narcissus triandrus pallidulus*. The two are so different chromosomally, there is only one possible combination of the chromosomes. Everytime this cross is made, it turns out to be this plant. No matter how many times you make this cross artificially or naturally you always get the identical plant which has been in the trade for a number of years as Trimon. I think it was possibly distributed by John Blanchard's

father initially. It is actually a wild plant found in the area of Puertollano. Because the two parents are growing sympatrically, you get a fair proportion of this plant known now as *N. munozii-germandei*, named after the Spanish botanist with to many letters in his name.

We were talking earlier on about bulbocodium hybrids. The most frequent hybrids with bulbocodium are triandrus. *Bulbocodium bulbocodium* crossed with *triandrus pallidulus* occurs in all wild hybrids that have been collected. This will give an idea of what sort of potential you have. I doubt we will see any hybrids between *triandrus pallidulus* or any other triandrus for that matter and bulbocodium. I don't find them to be attractive. The one thing they do have is tremendous vigor and they normally increase at a tremendous rate when brought into cultivation. Unfortunately they are all sterile. They essentially increase by bulb division at a tremendous rate and they make very good pot plants. You really get a lot of flowers and a splotch of color. I find it attractive myself. Another cross is *bulbocodium tenuifolius* with *triandrus pallidulus*. Here we have the typical *triandrus pallidulus* habitat, pine wood forests and generally extremely acid soil quite often down to 3.5, a situation where you would have to lime to grow rhododendron. All the triandrus grow in extremely acid soils. They are intolerant of lime in the wild. They are not quite so intolerant of it in cultivation, provided there is plenty of moisture available. This is a fairly typical habitat of *triandrus pallidulus*. Another habitat includes cyclamen species growing round about. This also is an indication of very acid soil. They tend to grow in light pine wood forest scrub situations. Their area of distribution is from the west coast of Portugal to central Portugal right through central Spain as far as Puertollano and southwest Spain. They never cross the main river across the north of Spain. The river Doura is a barrier for them going north.

In the north a different triandrus grows. To give you some idea of the variation, people have quite a number of clones in cultivation, and the keep saying "Oh! They can't possibly be the same thing" because of the variation of the length of the petals and trumpet. This shows you how it varies in the wild.

You also get quite nice bicolored ones. One time Fernandes separated one out called *N. triandrus cernuus* because it was very distinctly bicolored but in actual fact you can find other plants in the area that emerge into the typical *pallidulus*. It just happens to be one group that is tending to stablize itself in one particular area. No doubt in a few more hundreds of years of time or thousands of years of time, if it survies that long, it will be a true breeding species. This is a whole range of *triandrus pallidulus* again.

These plants are all from the same site. There is a very deep yellow one, you could say it is as a deep a yellow as *Narcissus jonquilla*, which gives you some idea as to the depth of color that the plants have. The potential that the triandrus have when you use them hybridizing, is that they transmit tremendous vigor into the hybrids. A very vigorous plant.

Triandrus triandrus which used to be called *triandrus albus*—The Angel's Tears—I think it is known widely to everybody in the trade. I am almost sure that the majority of the plants in the trade for years is the plant *triandrus pallidulus*. It is a very different plant. If we look at the leaves these are typical daffodil leaves of *triandrus triandrus*. *N. triandrus pallidulus* has narrow, simi-circular, hemispherical leaves and yet these are the only ones in cultivation today.

N. triandrus triandrus has typical, flat *narcissus* leaves and generally there are four or five to each flowering bulb. They are almost always glaucous in color with sort of a powderish white on the surface. The plant is about 12 inches high. It is a very large plant in relation to the others. It is very variable, still the flowers are very large. It has the typically bluish *narcissus* leaves. Most of these grow on the northern side of Ganadoira, therefore they start in the western end of this Cantabrian Mountains and cover three fourths of the way of the Cantabrian Mountain just about south of San Sebastian. The very vast forms just occur on the borders of northern Portugal and Spain just as the tail end of the Cantabrian Mountains where I have actually seen 12 to 14 inch high plants with seven flowers to a scape. I am trying to distribute stocks of these particular clones. I think this is a plant that really ought to be more in cultivation. The last of the *Triandrus* section is *triandrus*—what you all call *aurantiacus* but now we have to call—*concolor*. Notice again that the leaves are round or hemispherical which separates it quite well from *N. triandrus triandrus*. They always have this distinctly small pod shape. The stamens are always narrow and the corona is always a short bell shape. It has a very limited distribution. It occurs on a sight literally only hundreds of yards long by a road side now. They have put a main road close to the sight. It may well be safe for a little while longer providing they do not do any more road widening. This is *Narcissus triandrus concolor*. It also makes a superb pot plant. Note the narrow semi-circular leaves. It is very variable and very vigorous. It seeds freely. It comes very easily from seed. Just bare in mind, all triandrus need an acid soil and they do not want to be dried out at the end of the growing season, but want to be kept just slightly moist. The easiest way, if you have a frame, is to just plunge the pots in sand and cover them with a piece of board to keep the direct sunlight out. Keep them cool and just slightly moist.

Someone asked me earlier what essentially crosses with *N. triandrus triandrus*. It has been crossed with *Narcissus fernandesii*. The group as a whole is called by a Spanish botanist as *Narcissus incurvus cervicus*. It is noted that one of the features of *N. fernandesii* is the distinctly curved tube and in all cases it is passed on to the progeny. This is one of the features of *Narcissus fernandesii*.

There is another interesting hybrid *Narcissus* × *pujolii* which is another set of plants we will discuss this afternoon. This is *N. requienii* × *N. dubius*. *Narcissus dubius* itself is already a hybrid of *N. requienii* and *papyraceus* or possibly *pachybolbus* which has now stabilized to be a good true

breeding species, so much so, that it is now crossing back to its original parent and producing this new hybrid *N.* × *pujolii* which occurs in southeastern Spain. There are three habitats where *requienii* and *dubius* grow together, so this is a case of a hybrid becoming stable and now beginning to produce new hybrids with one of its original parents.

Here we have a new member of the *juncifolius* group which I used to like to call it, but now we have to call it *requienii*. I refuse to use the latest title for this group, *assoanus*. As I have often said many times before, the description should be left to the botanist who came up with it! I must apologize for that remark.

There is a new species I discovered a few years ago which has potential. It is going to be described later on this year as *Narcissus bandanus* only because it happens to be growing near a spring. This is the earliest flowering of all of this group. I have actually found this one flowering in the wild before December and certainly by the end of January they are all finished. The slight difference is in the internal mechanisms and also in the leaf sections. I think this has a potential to breed very early flowering into some of this group. It is possible to outbreed with this one. It might actually bring earliness into some other flowers as well. This is *Narcissus bandanus*, which will be described later on this year.

Thank you.

Question: Is there a bulbocodium called *filifolius?*
Answer: No. It is a trade name. It has been in circulation for 100 or more years now. It is possibly a hybrid originally which has now stabilized in cultivation.

Question: Do you have any publication about your work?
Answer: Hopefully I will be finished with a monograph by the end of the year. I do not know when it will be published. I have written articles for the American Plant Life Society and *RHS Daffodil Year Book*.

Question: Do they always multiply by seed or do they multiply by bulb division?
Answer: In the wild you hardly ever find clones. Everything is propagated from seed.

Question: How long does it take to get a flower from seed?
Answer: I would expect, in a good season, a flower in a third year and most certainly in the fourth year.

Question: In your container grown flowers do you fertilize at all when they are sunk in the sand beds and do you water the sand beds?
Answer: Fertilize once a year. The whole stock is repotted every year into fresh soil which to me is sufficient. In the wild they grow in very poor soils. I do actually give the foliage maximum growth. I give one watering with sulfate of potash—quite a rich solution I put on about three or four weeks

before the foliage goes down. If you are growing in an open mixture they will take any amount of water. You need to irrigate very frequently.

Question: We often thought that the bulbocodiums were tender bulbs, but you say they come from high elevations, so they are hardier than we think. Would you say that the drying off in summer is very important? Answer: It would be better if you can get the North African version of *cantabricus* bulbs. They do grow at a much higher altitude than the Spanish ones. I have always said that the Moroccan *narcissus* are very much easier to grow than the Spanish ones, which I find to be very temperamental.

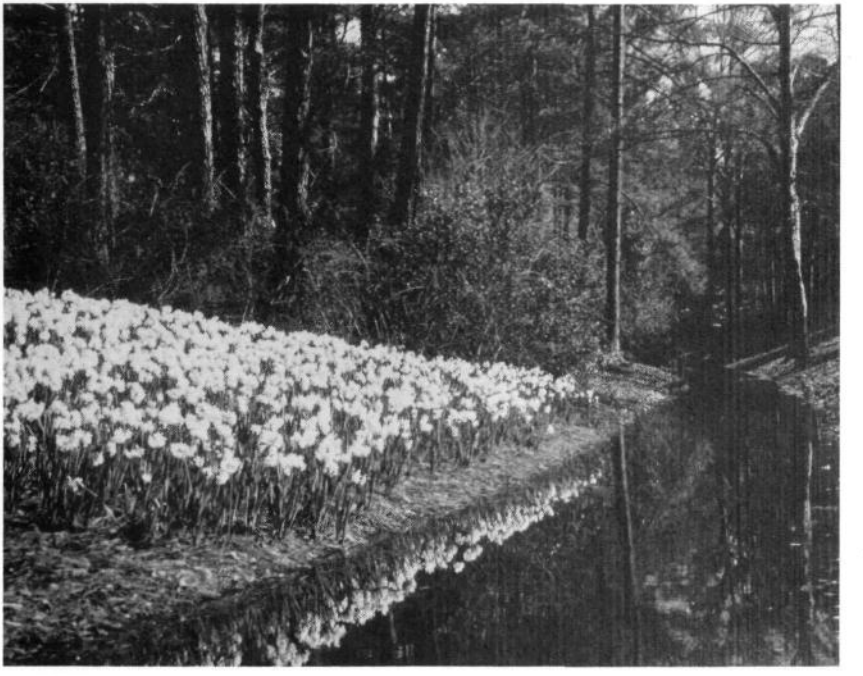
Thank you.

GEORGIA REFLECTIONS

DONNA DIETSCH, *Columbus, Ohio*

Ah! Georgia in the springtime! What a magnificent setting Callaway Gardens was for "Southern Reflections", the 35th Annual Convention of the American Daffodil Society. Our hosts, the Georgia Daffodil Society, made it one of the most memorable conventions, ever.

As I flew south toward Atlanta, I watched spring creeping up the



landscape below. A bit stark and bare in Ohio, it kept getting greener the further south my airplane went. As I left the plane at the airport, I found a couple of friends from Ohio and together we started the long trek to the baggage claim. Not having the courage to try the trains, since we were not at all sure that they would get us to where we wanted to go, the Schraders and I finally arrived at the Northside bus terminal more than a bit footsore and eager to sit down. The hour and a half ride to our destination passed quickly with Wells Knierim telling tales much to the amusement of everyone within hearing distance. That included the driver of the bus who, more than once, had difficulty keeping the bus on track. The roadways in Georgia are much more impressive than I had been accustomed to, with masses of azaleas and dogwoods in bloom and pieris "Mountain Flame" showing its crimson new leaves.

Our driver announced that we were entering Callaway Gardens and our attention was riveted to the beautiful view outside. Winding roads took us past plantings of azaleas along the banks of lakes. The lakes are man made and the shrubs had been planted there but looked exactly at home and as if they would not have wanted to be growing anywhere else in the world. Perhaps it was true that they were somewhat past their prime and that severe frosts has eliminated much of the bloom, but seen through eyes not accustomed to such quantity, quality and diversity, they looked pretty marvelous.

We reached the inn which was to be our home base for the next few days, found the registration desk, hung the name tags around our necks, and stowed baggage and goody bags in our appointed rooms. Eagerly we then sought out the staging rooms. We looked around to see who was there, renew acquaintances and make a few new ones. Especially we looked to see how our meager few blooms might stack up against the competition. Many were staging for the major award classes, but we were content to possibly receive a few ribbons imprinted with the convention logo as a souvenir.

Staging went on well into the night hours and early risers continued the onslaught of blooms to the show tables. Finally 1274 blooms made it to the tiered tables hopeful of being judged worthy of an award. After Handy Hatfield's Classification committee checked color codes and arranged the blooms so that the judges could easily make their choices, all of us left the show room. We drove into Pine Mountain to find some lunch and introduced Clive and Astrid Postles to catfish and hush puppies.

After lunch, back to the show room we went to see which ones took the awards. We were pleased to find that Eve Robertson won the Gold Ribbon for the best single stem with a bloom of Twilight Zone. How nice it was for Spud Brogden to be in attendance for his first convention to see his friend win with one of his introductions.

The big excitement, however, was in the hybridizers classes. In this, the third time for these awards, the best ever competition was waged. Both Brian Duncan, who had won the Hybridizers Challenge class in

Washington, D.C., in 1988, and Clive Postles, who won it in San Francisco in 1989, arrived ready to do battle. These two most civilized of gladiators were observed shaking hands just prior to the judging and offering congratulations, each to the other, after the fray.

Emerging the winner was Clive, who captured the ADS Challenge Cup for twelve raised by the exhibitor and the ADS Hybridizers Rosette for the best stem in the classes. Brian had minimal difficulty carrying away the other two—the Murray Evans Trophy for six of his own introductions and the Goethe Link Award for three of his charming cyclamineous hybrids. With both of these gentlemen sharing the awards, we were able to breathe easier and proceed with the enjoyment of all the blooms on display. How marvelous it was to have these two great competitors go head to head in our American counterpart to the Brittish Engleheart class. We do owe much credit and appreciation to those ADS members who first envisioned just this sort of occasion and worked to establish these hybridizers classes.

It would certainly be uncharacteristic of me to ignore the contribution to these classes of the entries of Kate Reade and Elise Havens. These two, upholding the banner of women hybridizers, will surely have their day. This one was not to be the one. Coming in second to Clive or Brian is no disgrace, but as Tevye said in *Fiddler on the Roof* "It's no great honor, either".

Later that evening we gathered for the Awards Ceremony. Jaydee Ager, convention chairperson, to whom I soon began referring to as the eigth wonder of the world, welcomed us to "Southern Reflections". A proclamation was read from Joe Frank Harris, Governor of the State of Georgia, designating March 29, 1990, as "Daffodil Day in Georgia". Our president, Kathy Andersen, introduced Hal Northrup, CEO and President of Callaway Gardens, who also welcomed us and made us eager to see the gardens. The award winners were announced by Delia Bankhead, and Tag Bourne, ADS Awards Chairperson, bestowed each winner with a mint julep cup and a kiss along with the trophies.

We went by cars and buses to the magnificent Sibley Center for the reception. An engineering, architectural and horticultural triumph of a structure, it has to be experienced not described. Greeted by a planting of "Salome" at the entry, we walked up winding pathways at various levels banked with lush foliage. We found tables piled high with food along the paths and an ensemble from the Columbus, Georgia, Symphony provided perfect accompaniment to the beauty of the place. Rum cake and key lime pie added an exclamation mark to the end of the tour.

Back to the show room we went, to spend several more enjoyable hours with our friends, the daffodils and our daffodil friends. I browsed through the commercial exhibits to see if there might be some that I would put on my wish list. If I may indulge myself, these are my "pick of the litter".

In Elise Havens' group, I noted Berceuse, a smooth petaled bloom with

a deep solid raspberry cup. A Spun Honey cross, numbered TEH 80/1 was a double I thought exceptionally refined. Trumpet Warrior, a Chiloquin cross, even though damaged in transit, showed smooth, flat petals. Elise's son, Kenny, may have been the pride of the exhibit. Gracious with an ingenuous smile, he held his own in discussions with the viewers, and is a credit to his parents. It looks as though this delightful young man may be the first of the third generation American breeders.

Brian Duncan showed some wonderful golden flowers in his stand. Tyrone Gold looked as good in person as it had in a photo a couple of years ago. As for my note on Dispatch Box, I just wrote WOW! If it always looks like that, it's the best golden trumpet yet. Gold Bond not yet listed, gathered gasps of appreciation. Find that bee again, Brian! I must not neglect the six blooms of Premiere. His first introduction, it is a most consistent flower and easily held its own in that rarified company in which it found itself.

It was difficult to pick the best in Clive Postle's group. Perfection of form is almost a needless-to-mention trait when describing his flowers. Norma Jean stood out, though. Named for Marilyn Monroe, it is a beautiful platinum blonde color. A 3 W-Y seedling, numbered 1/38/76, it was a pristine bloom with a fluted and ruffled cup. I thought it compared favorably with Dunley Hall and liked it better. China Doll, a graceful flower, seemed to be the choice of many. The cup is soft pink getting darker toward the rim.

Nancy Wilson had charming vases brimming with the dainty miniature blooms that she grows so well. Brent Heath arranged an exuberant display of the varieties for show and garden that he offers. Rainbow with its lime green and pink colors caught my attention.

Kate Reade in her Carncairn stand had her new George's Pink looking very handsome. Catching the eye no matter what surrounds them were Fireraiser, that burning orange flower, and Lough Bawn, a round jewel of a flower.

Wim Lemmers aways brings blooms that invite comment. This time he had several that he is growing that were exceptional and which were bred by an amateur in Holland. One was a very good double with true orange petals and vivid red segments which was bred from Ambergate. The other was a show quality division 11. It is small, as he had it there, with smooth golden petals and plush substance. The corona was a luscious shade of tangerine with even ruffling, covering three quarters of the perianth. A nice one, Wim.

Bill and Diane Tribe, carrying on the legacy of Murray Evans, displayed many Evans cultivars and Bill Pannill's, as well. Northwest looked very nice and I wondered why I didn't have that one. I stopped Bill Pannill to ask him why he had not registered anything that had been bred from his own named cultivars. He was surprised that he had not, and escorted me to the lovely 2 Y-P seedling from his Keepsake. Bill then delighted me with a tour of his flowers in the show. It appears that there is a story behind the name

of most of his introductions, and Woods Pink has a charming one. As Bill dug his seedlings, he threw those which were not to be kept into a wooded area next to his seedling beds. Once, while walking through the woods to visit a nearby relative, he spotted a pink cupped flower blooming among the trees. After retrieving it, evaluation showed it to be a lovely flower with a form that was distinct from others. Undoubtedly an Interim cross, Woods Pink has petals that are pinched at the top, giving them a pointed and starlike outline. This is a nicely appropriate name for this flower which offers diversity of form especially for collection classes.

Friday dawned a bit misty, but nothing would have dampened our enthusiasm or prevented us from enjoying all the wonderful things that were planned for us on our tour day. It all started in the Magnolia Room where two large televisions had been set up. We settled down to see a video on the Day Butterfly Center—a tantalizing taste of what was in store for us later on.

We gathered a group of compatible friends and boarded "Aunt Pitty Pat's" bus, greeted by our most charming hostess with the wonderful name, Season. Season kept this unruly mob in check and gave us commentary as we travelled the winding roads of Callaway Gardens. Azaleas reflected their vivid colors in quiet inlets in the lakes. Wild geese and ducks settled on the surfaces. We passed a small island which had been constructed to invite the more timid species to nest there.

The Hybridizers' Garden at the Vegetable Garden

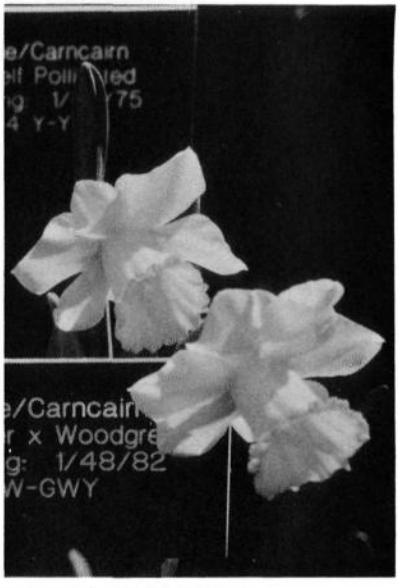
Unbelievably, it was floating on a base of styrofoam anchored to the bottom.

Our first stop was at the Victory Garden South, a carefully tended plot of rows of vegetables and herbs, and beds of flowers just starting to burst into bloom. The hybridizers' registered and unregistered bulbs had been planted here. The strange weather had made it a somewhat disappointing show with some blooms long gone and others still in bud. No matter, it caused only small regret in an otherwise marvelous day.

Speaking of marvelous days, our next stop was the Day Butterfly Center. What a fantastic place it was! Filled with the tropical plants that are hosts to butterfly species, the glass structure was a wonderland of fluttering wings and dancing bits of color. The butterflies dipped and hovered, preening in our attentions, and posing for our cameras. They landed on the windows, on flowers and leaves, and on a few fortunate people. In nursery boxes, chrysalises hung by threads looking like jewels—jade, amber, and polished gold nuggets. A thousand butterflies is a lovely gift. Thanks, Mrs. Day.

Our next stop was the lovely chapel that Cason Callaway dedicated to his mother. Made of Indiana limestone, with magnificent stained glass windows, it had a serenity that made you want to linger in silence. It almost seemed wrong somehow to be munching on breadsticks and sipping the lemonade that had been provided as a snack.

We again visited the Sibley Center where our guide, Season, took us through the greenhouse filled with the plants that would decorate the grounds for the summer. We ducked around hanging baskets brimming with fuscia and begonias. We saw the Center again by daylight which had a completely different atmosphere than what it had the evening before. Bright and lush this time, we admired the tropical plants and a cascade of



Lemon Sprite (Mitsch-Havens) and Carncairn 1/48/82

hanging baskets full of flowers reflected in a pool beneath.

Since the weather was still misty and a chill wind was blowing, (even if we really hadn't noticed), Jaydee had the picnic lunch moved inside the Inn. Having an inside picnic didn't ruin our enthusiasm for the more than generous feast. After we had eaten, the entertainment began. "Clogging Express", a troupe of brightly cheerful young people, showed us what clog dancing is, when done right. With flashing tap shoes and whirling skirts, they bounded through intricate and rapid routines. It was about this time that several people figured out what those yellow tags were that had been pasted on their clothes earlier in the day. One of my (former) friends transferred hers to me just before it was announced that those wearing tags were to come to the front to learn to clog dance. Never let it be said that I am not willing to try nearly anything, once, and I joined the rest, simply hoping not to make a complete fool of myself. I understand that Clive Postles was the champ, but I wouldn't know since I was concentrating on remaining upright. I was personally grateful to sit down for the Judges Refresher where Naomi Liggett guided us through the changes in the judging handbook. We discussed some of the implications of the changes and everyone appreciated the tremendous amount of work that went into the issue.

The banquet that night was a Georgia feast of southern fried chicken and collard greens, among other down south delights. The annual meeting followed, with Kathy Andersen turning over the gavel to Jack Romine, ADS President for the next two years. Following the meeting, Dr. August De Hertogh gave us an information packed talk on forcing daffodils. It was impressive to realize and understand the enormous amount of research that has gone into the science of forcing which enables us to buy a pot of daffodils in bloom from the grocery, unless, of course, you want to do your own.

Regretfully passing up invitations for late night revelry, we decided to retire early in order to be up at the crack of dawn for the hybridizers breakfast. (This Yankee was grateful that there were other items on the menu besides the grits and red-eye gravy promised in the schedule pamphlet!) Dr. Bill Bender quieted us down and we settled into an interesting discussion of the pleasurers and pitfalls of breeding with the species. Most questions were directed to our guest panelist, Michael Salmon, who fielded them with ease.

Starting at 9:00 that morning, we were treated to a series of wonderfully informative seminars, several of them prefaced by witty introductions by James Wells. Michael Salmon spoke twice, the first talk on the bulbocodiums and the second on recently discovered species. I found it interesting that the narcissus species are relatively recent arrivals on the earth since no fossil evidence of them has been found. He explained the various types and showed slides for identification. After the amount of knowledge that he so easily tossed out to us, all I can say is that I will wait for his book rather than try to make sense of my notes.

Between Mr. Salmon's talks, Brent Heath discussed collected and

nursery grown species bulbs. He let us know that the reputable growers are selling nursery grown stocks and that unexpectedly, the previous collecting of species bulbs have saved some of them from extinction since they are at risk in their native environment. Brent suggested that we should be dilligent in preserving these delicate beauties.

Scattering for lunch, some of us drove down the road to Pine Mountain and the family restaurant that we had discovered a couple of days before. To our pleasure, we found that our praises of hush puppies and other southern delicacies had increased their clientele and a number of our daffodil friends had joined us.

We went back to the inn to hear more speakers. First was Brian Duncan who took us on a trip through the twenty five years of his hybridizing. He explained the ledgers on which he keeps track of everything from the application of pollen to pistil to the eventful registration with the Royal Horticultural Society of the best of the best. In an exercise guaranteed to produce agony for me, I carefully noted germination percentages and seeds planted to result in Brian's 188 registrations to compare to my fledging hybridizing efforts. I noted several seedlings in his slides, in particular a Cool Crystal × Monksilver cross and Triple Crown, (3 Y-GYO), named but not yet catalogued.

The final speaker was Dr. August De. Hertogh, who, once again, awed us with the quantity and quality of his knowledge of narcissus. It will take a while to assimilate all of the information that is in my copious notes from his talks.

With our brains reeling from all the knowledge we had gained this day, we left the room, some to attend the Board of Directors meeting, and others to go their way to enjoy some of the other pleasures of Callaway Gardens and this convention. Not the least of those pleasures was the boutique assembled by the Georgia Daffodil Society. Packed with daffodil memorabilia from tee shirts to tea cups, it invited us to spend some pleasant time browsing with Helen Grier and Elise Havens. Each of us found something that we could not possibly live without.

It had, naturally, stopped raining after our tour day was over and Saturday provided a warm and pleasant evening to gather in the central patio of the inn before our final dinner, called the "Gone With the Wind" banquet. Afterward, Jaydee Ager, convention chairperson, individually thanked her committee. The thanks really went to Jaydee, who had kept her cool through changes in plans and schedules and did it all with that charm and grace for which southern women are justifiably famous.

James Wells again did the introduction for our guest speaker, Fred Galle, who then introduced us to the azaleas that were so abundant on the garden grounds. He related the story of the bear that stole his pack in the Adirondacks and, along with it, all of his records. "That's the bear facts", he said. At the end of his talk he said that he would be going back to find the great grandson of the bear that got his pack to see if the bear knows

more about azaleas than he does.

Phyllis Vonnegut told us about the difficulty she was having in trying to follow Scarlet O'Daffodil. She had given much thought to how she could properly represent the state of Indiana. Dressing as an Indy race car driver or a basketball player came readily to mind, but she decided to be herself and invite all of us to enjoy Housier Hospitality at our 1991 Convention in Indianapolis. Just going to see Helen Link's garden will be worth the trip.

A witty and talented acutioneer started the money flowing after Jaydee announced that Marie Bozevich's lovely painting would be donated to the Education Department of Callaway Gardens. Champion bidder for the evening was Jane Meyer who triumphantly carried off the magnificient wood sculpture of the bluebird with Tete-a-Tete.

"See you next year" and "Don't forget to write" floated around the room as we milled around not willing to end it yet. Some of us were treated to a slide show of some of Spud Brogden's creations on a bedsheet thrown over the curtain rod. We jotted down names of ones to acquire in the future and we hope that we convinced Spud to honor some of these lovely things with RHS registration.

With a feat of legerdemain worthy of the magician, David Copperfield, our travel service representative, having previously done an outstanding job for us, managed to make a bus disappear at 10:00 on Sunday morning. Good-byes were said to friends who had intended to leave at that time for the airport. However, without a bus on which to leave, a harried group gathered outside the inn and nervously kept peering down the roadway as if looking once more would make the bus appear. Finally, Jaydee, again doing yet another heroic last minute adjustment, announced that a bus had left the airport and would arrive shortly. Several people hurriedly arranged for alternative flights home, having already missed the ones on which they had been scheduled. A somewhat surly group greeted the bus as it pulled up in front of the inn. After we filled the luggage hold and the seats, the driver announced that he was the 12:00 bus not the 10:00 and he, at least, was on time. A grateful group applauded as he promised to get us to the airport as quickly as he could—and did. At the airport we, somewhat regretfully, said more good-byes and then scattered to get to our flights to go home.

Quips, Quotes and Quiet Thoughts...

Clive Postles, as he gestured toward his commercial exhibit, asked Bill Pannill what he thought of all this. Said Bill, "Makes me want to go get a greenhouse."

Michael Salmon wanted us to know that he had enjoyed the Southern Hospitality, corrected to American Hospitality, and was looking foward to returning in the future.

John and Ans Pennings, Dutch bulb growers, especially enjoyed meeting new people. They came to see what the new trends were for daffodils and what types would be desirable in the future.

Barrie Kridler was telling Butler Brown, the schedule cover artist, that he and I would someday be competing in the hybridizers classes. Cheerfully he mentioned that he intended to slash my throat. I do hope that was figuratively speaking.

Our schedule was embellished by some lovely Haiku poetry written by Terry Johnson of the Georgia Natural Resources Department. My favorite was:

A robin pauses
beside showy triandrus blooms
a rainbow now pales.

What a nice addition these were to the schedule booklet.

Bill Roese, after inspecting all the things in our goody bags, said that it contained everything except a change of underwear.

At the final banquet, Clive and Astrid Postles and Spud Brogden were at our table. David Cook asked if he might join us and Clive graciously invited him. Astrid remarked. "Clive never allows any man to sit with him who either is taller than he is, or has more hair."

The definitive quote, however, came from Jaydee Ager who described the convention as "wild, but wonderful". She would compare being convention chairperson to childbirth. "While it is happening, you're saying you aren't ever going to do this again, but time has a way of dulling that memory." She doesn't think she wants to do either one again.

If these remarks have made you a little envious of those who were there instead of making you smile with pleasant memories, be assured that this was exactly what I intended—to make you wish you had been there and perhaps to see you next year.

It was a great convention. Thanks, Georgia—you're a peach!

HOME FORCING OF DAFFODILS

A. A. DE HERTOGH, *Professor, Horticultural Science*

(from the North Carolina Agricultural Extension Service)

Causing spring flowering bulbs like daffodils (*Narcissus*) to flower by other than naturally occurring conditions is called *forcing*. This is a practice carried out by commercial growers the world over. With a little care and effort, any homeowner can have a steady supply of bulb flowers from late December through April. Forcing bulbs should be a challenge to those who are interested in plants.

GENERAL INFORMATION

The steps involved in forcing are quite simple.

(1) The proper forcing cultivars (cultivated varieties) must be selected for the desired flowering periods. This is necessary since all cultivars are not suitable for all flowering periods. The *Table* lists some cultivars which are best suited for forcing for the various months.

(2) The bulbs must be planted, rooted, and stored for a minimum of 13 weeks, and given a cold treatment with temperatures ranging from 35-48°F.

(3) After cooling, they should be placed in the home. On the average, the bulbs will take about 3-4 weeks to flower. During this time you will be able to enjoy a growing plant.

MATERIALS

Bulbs - The selection of the proper cultivars for the desired period is very important. The *Table* lists several cultivars which are suitable for the various months. It is strongly suggested, since some cultivars may be in short supply, that you place your bulb orders with your dealer in the spring to make sure they will have them ready for you in the fall.

Planting Medium - The purpose of the planting medium is to anchor the bulbs and serve as a supply of moisture. Thus, the planting medium must be well-drained and yet retain sufficient moisture. A good mixture would be one part loamy soil, one part peat, and one part sand. Fertilizer should not be added to the mixture.

Containers - Use only clean pots with adequate drainage holes. Six to eight-inch diameter pots can be used. If they have been previously used, scrub the pots and rinse thoroughly. If they are new plastic pots, be sure the holes in the bottom of the pot are open. When clay pots are to be used, soak them overnight so they will not draw moisture from the planting medium.

PROCEDURES

Handling of bulbs prior to planting - It is extremely important that all bulbs be handled with care at all times. They are living plants and should not be dropped or subjected to extremely high or low temperatures. After purchasing, keep the bulbs well-ventilated. If they are in paper bags, open the bag to allow maximum air movement. If possible, store them on open trays. Keep the bulbs in a room with a temperature between 45 and 50°F. Bulbs can be stored for several weeks at these temperatures. Temperatures above 63°F. should be avoided at all times.

Planting - Planting can take place any time from mid-September to December, depending on the desired date of flowering, and the type of storage used. As a general rule, for late flowering, plant late, and for early flowering, plant early. Remember the minimum length of the total cold treatment should be 13 weeks, 15 weeks is preferred.

If the bulbs were held at 45-50°F (precooling) prior to planting be sure to count this time in the total weeks of cold given. Thus, if bulbs were precooled for three weeks they only need 10 weeks more after planting.

For flowering in late December, the planting must be done in mid-September. For February flowering, the bulbs should be planted in mid-October and for March and April, in mid-November.

When planting, the pot should be loosely filled with enough soil so that the top of the bulb will be even with the top of the pot. Place three or four daffodils in a six-inch pot, more in larger pots.

Do not press the bulbs into the soil. The soil under the bulbs should be loose so that good rooting can take place quickly. When covering bulbs, do not fill the entire pot. Fill only to within one fourth inch of the top so the plants can be more easily watered.

Label each pot with the name of the cultivar, date of planting, and date to be placed in the house.

Cold Treatment - After planting, water the pots thoroughly and place them in refrigerator at 35-45°F. The medium should be kept moist through the rooting and cooling period. After five to six weeks, the roots should emerge out of the bottom of the containers. The shoots will subsequently emerge from the bulbs.

Forcing the bulbs - After a minimum of 13 weeks of cold, the first bulbs may be place in the house. Longer cold storage will result in taller flowers, while storage shorter than 13 weeks will result in smaller plants and sometimes aborted flowers. If the first planting was made on October 1, the first plants may be taken into the house just before Christmas. For a continous supply of flowers, bring in a few pots at weekly intervals.

In the house, place the plants in an area with a temperature of approximately 60°F. For best results, place them in direct sunlight. The plants will require about 3-4 weeks to flower. Once the flowers begin to open, take the plants out of direct sunlight. The flowers will last longer. Since the bulb contains most of the plant food it needs, it is not necessary

to fertilize. Bulbs which have been forced indoors are usually of little value for outdoor plantings. Daffodils, however, can be placed outdoors as soon as spring arrives. Many of them will flower in one to two years.

Daffodil (Narcissus) for Forcing

January and February	**March and April**
Yellow - Carlton, Dutch Master, Explorer, February Gold, Garden Princess, Peeping Tom, Tete-a-Tete, Unsurpassable,	Yellow - Dutch Master, Explorer, Garden Princess, Prizewinner, Unsurpassable
Bicolor - Barrett Browning, Fortune, Jack Snipe	Bicolor - Barrett Browning, Bridal Crown, Flower Record, Fortune, Las Vegas, Magnet, Jack Snipe, Salome, Jules Verne,
White - Casata, Mt. Hood, Ice Follies	White - Casata, Mt. Hood, Ice Follies

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REFERENCE

De Hertogh, A. A. 1989. *Holland Bulb Forcer's Guide, 4th ed.* International Flower Bulb Centre, Hillegom, The Netherlands.

MEET YOUR PRESIDENT

KATHY LEONARDI, *Ferndale, California*

I first met Jack Romine in Sacramento, California, at a California Garden Club Symposium, where he was the horticultural instructor. The subject was daffodils, with emphasis on classification and judging. Much impressed with the presentation, I made it a point to thank him; never missing an opportunity to promote our favorite flower he gave me, among other things, a Grant E. Mitsch catalogue. "Pipit" was the featured cultivar on the front cover; you may guess the year.

A transplanted Midwesterner who has lived in California for forty years, he has devoted a lifetime to the field of higher education: a retired college English instructor; author of thirteen college English textbooks, a formidable contribution to the educational system.

A World War II veteran, having served in the Navy he still loves the ocean, only these days a luxury cruise has more appeal.

The love of gardening began early in his childhood. The curiosity of a five-year-old, seeing a seedling emerge, has turned into a passion which led to much research, hybridization, staunch leadership in horticultural societies, and a small mail order business, "The Pollen Bank" which specializes in colchicine-induced tetraploids and their progeny.

He is a member of the national daffodil, iris, lily, daylily and rock garden societies. Jack is past president of the prestigious California Horticultural Society and served six years on the board of directors of the American Hemerocallis Society. Many times he has served as president of local iris, daffodil and daylily groups.

The Pacific Region of ADS matured under his leadership as RVP, and his organizational skills were well demonstrated as chairman of the 1976 ADS Convention in San Francisco.

As a colchiplodist* he converted over 200 daylilies, several true lilies, *Scilla peruviana, tritonia crocata* and other bulbous and cormous material, and has developed a seed strain of tetraploid Swiss chard. As a hybridizer, Jack concentrates on daylilies, lilies and daffodils. He has registered two daffodils: Little Soldier, a yellow bulbocodium, which blooms in some seasons and in some places as a miniature, a real charmer; and Old Smoothy, a 1 Y-Y. Amidst a busy schedule, he "finds" time to devote to reading, hiking and writing murder mysteries!

Did you know?, have you heard?, what do you think? are likely questions posed during a conversation with Jack. He is always interested, always seeking input, a quality which will serve him well as ADS president. Over the years his home in Walnut Creek, California, has been the scene of many bulb auctions, potluck suppers and other gatherings of the Northern California Daffodil Society. An atmosphere of friendship and

welcome always prevails.

Just as the turn of a page on the calendar has eased us into a new decade, so will the turn of events, ease, or propel us into situations requiring prudent decisions. I feel confident that we will grow stronger with each of us doing our part to support our new president and the board in their endeavor to conduct the business of the ADS.

Please, welcome Jack Romine, President of ADS.

* A colchiploidist uses colchine, an alkaloid poison derived from *colchicum*, to double the genetic structure of plants. A plant successfully treated will be larger and heavier, and have an extra crystsalline layer on the surface or the flower, thus reflecting more light and giving the illusion of a brighter color.

BULLETIN BOARD

FROM THE PRESIDENT'S DESK

The convention at Callaway Gardens fulfilled all expectations. It would be difficult to find a more nearly ideal setting for a flower convention. Thousands of blooming azaleas lined the lakesides, paths, and roadways; large plantings of bulbs and spring annuals surrounded every building. Although local daffodils had bloomed out because of an early season, people from other regions brought copious entries of high quality, and I have never seen more intense color than in this year's commercial displays.

Convention chairman Jaydee Ager and her many helpers deserve high praise for providing us with the best of Southern hospitality—a top show, with educational exhibits, lovely daffodil arrangements, and art works featuring daffodils; a full day of interesting seminars; an evening reception that included a showing of the work of acclaimed Georgia artist Butler Brown; a tour of Callaway Gardens, with generous time allowed to visit the Day Butterfly Center and Mr. Cason's Vegetable Garden (also the site of the Hybridizer's Display Garden). During one luncheon we were entertained by a clog dance group from Valdosta, Georgia. The Judges Refresher course presented an orientation to the new Handbook for judges. At the Hybridizers Breakfast guest speaker Michael Salmon answered many questions about species and their possible role in breeding new cultivars.

The Georgia Daffodil Society Boutique was well stocked with "daffodillia." Featured were seriograph notecards by Gene Bauer, of California, as well as antique and collectible glassware, silver, and china with daffodil motifs selected by Scott Bally, past-president of the Washington Daffodil Society.

Note should be made, too, of the Plantation Auction that concluded

the convention. Jaydee arranged for a professional auctioneer to handle the proceedings. With his skill and humor he turned the event into a novelty and raised much more money for the donated bulbs, quilt, and woodcarving than we might otherwise have anticipated.

If I were asked the purpose of our organization, I would probably say that we have joined together to celebrate the beauty of daffodils, to acquire and disseminate information about growing them, exhibiting them, and landscaping with them. To that end we are incorporated as a nonprofit association, and our business is to furnish goods and services to our members. The executive officers and directors guide that business and keep it functioning smoothly and soundly. In assessing the administration of outgoing president Kathy Andersen, I would like to call attention to three major accomplishments.

First, we held to planned budgets and met all our obligations in spite of continually rising costs. Second, we gradually switched to a fully computerized operation in the office of the executive director. This happened just in time, too, because we were beginning to ask more of an unaided executive director than we could really afford to pay for. Now we literally have finger-tip information about our inventories, our membership, our financial accounts, and our areas of greatest and weakest performance. Third, we have recently published a wonderful product—the long-awaited revision and updating of the *Handbook for Growing, Exhibiting and Judging Daffodils.*

Although at present we are not in a perilous financial situation, we are not really comfortable either. Interest from the life membership fund is far from adequate to defray the yearly cost for life members. Printing expenses continue to rise, and increased postal charges loom on the horizon. One of my goals will be to seek more ways of augmenting our income without raising dues or cutting down on services.

As many of you know, I have strong opinions on most subjects, but as your president I assure you my priority will be to implement the will of the majority and especially to see that all opinions are given an airing.

Thank you for giving me the opportunity to serve you.

—JACK ROMINE

FROM THE EXECUTIVE DIRECTOR'S DESK

As I write this at the beginning of April, my daffodil season is some six weeks old, and it had better last another month, or an exhibit planned here for late April will be in real trouble! What a strange season it's been—warm when it should be cold, then cold again, then hot...and so it goes. The current cold spell has provided marvelous color—deep orange and red cups, solid to the base! Would that it were always so!

We've just returned from a wonderful convention in Georgia. Jaydee Ager and her committee did a fantastic job. If you missed it, I hope you'll

plan to attend next year in Indianapolis. Conventions are always great fun, even for first-timers. Come and get acquainted.

By the time you read this, you should hopefully have your orders placed for bulbs for fall delivery. Stocks of some cultivars are always in short supply, so do order early to avoid disappointment.

A request has been received for a copy of the June 1982 *Journal*. If you have one to spare please send it to this office.

BOOKS AVAILABLE

We have a very few copies of *Narcissus, Chinese New Year Flower: Legends & Folklore*, by William C. Hu, available for $10.00. Seven legends relating to narcissus are told in its 106 pages. The final chapter is on cultivation.

Copies of the RHS Yearbook, *Daffodils 1989-90* are now in stock and available for $8.00. Along with the annual show reports are articles on pests and diseases, John Blanchard's Moroccan Diary, and a review of yellow-pink daffodils by Don Barnes.

Those interested in species daffodils will welcome the publication by the Alpine Garden Society of a book titled *Narcissus, A guide to Wild Daffodils*, by John Blanchard. The book is about 176 pages long with 28 pages of color illustrations. The book includes an extensive list of species and synonyms, a description of nearly every species—including measurements, and advice on cultivation of the plants. We have placed a small order with the AGS at the pre-publication price of $38, and have a limited number of copies still available. Once the initial supply is exhausted, additional copies will be $48.00 each.

All three books are available from the office.

BEE MABLEY

Bee Mabley, 3 W-YYO (Fairy Tale × Matapan), bred by Nancy Fitzwater of West Virginia and registered in 1973 is a lovely, large, late-flowering daffodil. It was named for Mrs. Carlton Mabley, Jr., of Huntington, West Virginia, a good friend of Mrs. Fitzwater.

Mrs. Fitzwater sent me several rounds of the bulb in 1979. In going through boxes of ADS "stuff," I came upon some old correspondence which indicated that Mrs. Fitzwater wanted to make Bee Mabley available to ADS members, with the funds benefiting ADS. As I now have several clumps of it, I can offer a bulb to the first ten people who send a check for $20.00 made out to ADS (limit one bulb each please). I can recommend the bulb as an excellent cultivar, having used it in a winning Gold Quinn collection, a winning Throckmorton collection, and several other blue ribbon entries. While this won't fulfill Mrs. Fitzwater's desire to have the cultivar widely available, at least it's a small start. Send checks to the office, please.

—MARY LOU GRIPSHOVER

AMERICAN DAFFODIL SOCIETY, INC.
PROFIT AND (LOSS) — YEAR ENDED DECEMBER 31, 1989

INCOME:		
Dues Paid in 1989		$12,392.10
Interest Received		5,911.58
Contributions		325.00
Net Sale of Books, Supplies, etc.:		
R.H.S. Yearbooks and Checklists	$ 986.65	
A.H.S. Handbooks	216.95	
Daffodils to Show and Grow	1,909.49	
Handbook for Judges	92.50	
Daffodils for Home, Garden and Show	30.44	
The Narcissus	17.20	
Modern Miniature Daffodils	190.95	
A.D.S. Publications	274.70	
Journal Binders	51.80	
A.D.S. Jewelry	207.08	
Data Bank	(400.76)	
Show Entry Cards	292.66	
Medals	(84.06)	
Miscellaneous Sales	169.80	3,955.40
Net Slide Rentals		377.18
Net Registrations		87.20
Judges' Schools and Refresher Fees, Net		178.18
Advertising in Journal		860.88
1989 Convention Surplus		448.97
Convention Auction and Lottery		4,130.00
Sale of Office Furniture		106.40
TOTAL INCOME		$28,772.89
EXPENSES:		
Daffodil Journal—Printing and Mailing		$15,423.63
Officers		75.00
Regional Vice-Presidents (newsletters)		1,344.54
Committees		1,809.30
Office Expenses:		
Executive Director and Clerical Salaries	$6,400.00	
Social Security Tax	480.64	
Bond	100.00	
Postage	985.20	
Supplies	308.33	
Printing	766.27	
Telephone	104.20	
Computer Lists and Labels	50.26	
Bank Charges	123.35	9,318.25
Dues—National Council State Garden Clubs		15.00
Miscellaneous (Moving Office from Mississippi to Ohio)		414.91
Life Memberships		3,786.20
TOTAL EXPENSES		$32,186.83
1989 LOSS		(3,413.94)

AMERICAN DAFFODIL SOCIETY, INC.
BALANCE SHEET — DECEMBER 31, 1989

ASSETS:		
Cash in The Fifth Third Bank - Checking Account		$ 5,144.87
Cash in The Fifth Third Bank - Petty Cash Account		46.08
CD Central Trust (#1804188) due 6-8-90 - yield 9.3%		12,000.00
CD Central Trust (#1804226) due 6-22-90 - yield 9.0%		33,911.55
Central Trust CD Accrued interest, due in June		2,047.35
CD Central Trust (#1791627) matures weekly - yield 7.3%		10,521.54
CD Cardinal State Bank (#30000495) due 8-2-94 - yield 9.0%		10,000.00
Inventory of Publications, etc.:		
RHS Yearbooks '88-'89 (42) - old copies (124)	$ 509.55	
RHS Checklist (3)	41.86	
AHS Handbooks (388)	38.80	
Binders for Journal (65)	510.25	
Daffodils to Show and Grow (1232)	2,152.30	
Data Bank Printouts (10)	110.00	
Data Bank Binders (10)	16.80	
Data Bank Padded Envelopes (10)	9.40	
Show Entry Cards (39,000)	902.90	
Jewelry - Charms (23), Cuff Links (13), Earrings (13), Lapel Tacs (13), Pins (26)	956.58	
Gold and Silver Medals and Dies	515.30	5,763.74
Office Furniture & Fixtures		2,481.76
Accounts Receivable - Books $34.80, Advertising in Journal $265.00		299.80
TOTAL ASSETS		$82,216.69
LIABILITIES:		
Dues Paid in Advance (in whole or in part)		$16,318.45
Life Memberships		27,500.00
Resource Development Fund:		
Bequests:		
John Larus Memorial	$10,000.00	
Herbert A. Fischer	5,000.00	
Memorials	6,356.55	
Convention Surpluses	10,595.41	31,951.96
Computer Fund		2,052.74
Advance Sale of Books - Judges Handbooks $42.00, RHS $16.00, Used Book $18.00		76.00
Accounts Payable - RHS $214.63		214.63
		78,113.78
Net Worth		4,102.91
TOTAL LIABILITIES		$82,216.69

JANE A. MOORE, *Treasurer*
April 18, 1990

AUDIT STATEMENT

The above statements and balance sheets for the year 1989 were prepared using the cash receipts and disbursement records maintained by the Executive Director. The balances were verfied with the bank statements and account statements of the financial institutions indicated. As of January 1, 1989, all records of the Society are in computer. The inventory of publications is shown at cost except that no value is included for surplus ADS publications. In addition to the assets shown, the Society has a substantial library of books on daffodil culture, many of which are rare and valuable, and several colored slide collections. It also has a number of silver trophies awarded at convention shows. The slides, books and trophies were mostly contributed and no value is included.

Dues received during the current year, covering periods beyond the end of the year, were prorated and amounts covering such future periods are shown as a liability as are life memberships.

Receipts for dues and other income were verified with deposit slips and disbursements were checked with suppliers' invoices and cancelled checks signed by the Executive Secretary and Treasurer where required.

Based on this review, it is my opinion that this report presents an accurate statement of the financial condition of the Society and that the records are being maintained in a sound and orderly manner.

LUCY F. KING, *Auditor*

CORRECTION TO THE HANDBOOK, 1990 EDITION

On page 9 strike out "not" in the last line, so that the sentence reads, "We feel it is important to maintain Narcissus species in captivity as hedge against extinction in the wild and many sources of these species do use propagated stocks."

—NAOMI LIGGETT, *Chairman*

AMERICAN DAFFODIL SOCIETY BOARD OF DIRECTORS 1990-1991

President: J.S. Romine, 2065 Walnut Blvd., Walnut Creek, CA 94596, (415) 939-7744

First Vice President: Richard T. Ezell, 94 Willowbrook Drive, Chambersburg, PA 17201, (717) 264-2269

Second Vice President: Ms. Marilynn Howe, 11831 Juniette, Culver City, CA 90230, (213) 827-3229

Secretary: Mrs. Jaydee Ager, 344 Bear Branch Road, Kathleen, GA 31047, (912) 987-9282

Treasurer: Mrs. P. R. Moore, Jr., 3750 Kercoughton #6, Hampton, VA 23669, (804) 722-1829

Past President: Mrs. Marvin Andersen, 7 Perth Dr., Wilmington, DE 19803, (302) 478-3115

REGIONAL VICE PRESIDENTS

New England: Mrs. William Barker, Lake Road, Dublin, NH 03444, home (603) 563-8631, office (603) 827-3402

Northeast: Mrs. John F. Gehret, 3 Granite Rd., Wilmington, DE 19803, (302) 654-1305

Middle Atlantic: Miss Delia Bankhead, 489 Arnon Meadow Rd., Great Falls, VA 22066, (703) 759-2133

Southeast: Dr. Elise Cheesborough, 109 Carolina Forest, Chapel Hill, NC 27514, (919) 929-6982

Midwest: Mrs. William J. Newill, 10245 Virginia Lee Dr., Dayton, OH 45459, (513) 885-2971

Southern: Mrs. Glenda Ross-Smith, 41104 Maloney St., Knoxville, TN 37920, (615) 579-0793
Central: Ms. Jane Meyer, 3403 Brookmeade Dr., Rolling Meadows, IL 60008, (312) 255-4425
Southeast: Mrs. Thomas E. Bentley, P.O. Box 847, Hughes, AR 72348, (501) 339-2809
Pacific: Robert Jarrell, 162 Crest View Dr., Orinda, CA 94563, (415) 254-2946

DIRECTORS AT LARGE

1991: Mrs. Goethe Link, Box 84, Brooklyn, IN 46111, (317) 831-3283
1991: Mrs. Walter Thompson, 2907 Southwood Rd., Birmingham, AL 35223, (205) 871-0154
1992: Mrs. R. H. Reade, Broughshane, Ballymena, Co. Antrim, Northern Ireland
1992: Mr. William G. Pannill, P.O. Box 5151, Martinsville, VA 24112, (703) 638-8841
1993: William Roese, 903 Amberly Pl., Santa Maria, CA 93454, (805) 937-4419
1993: William Ticknor, Route 1, Box 152, Tyner, NC 27980, (919) 221-8388

REGIONAL DIRECTORS

New England Region
1991: Mrs. John Haskell, 5 Canoe Trail, Darien, CT 06820, (203) 655-2683
1992: Mrs. George S. Mott, III, 38 Perkins Rd., Greenwich, CT 06830, (203) 661-6142
1993: Mrs. Richard Turner, Route 1, Box 241, West Kingston, RI 02892, (401) 783-6934
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1992: Mrs. Richard Ellwood, 12 Auldwood La., Rumson, NJ 07760, (201) 842-7945
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1993: Ms. Joan Cooper, 212 W. County Road C., St. Paul, MN 55113
Southwest Region
1991: Mrs. C. R. Bivin, Rt. 1, Box 298, Overton, TX 75684, (214) 895-4681
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COMING EVENTS

April 18-20, 1991	ADS Convention, Indianapolis, Indiana
April 23-25, 1992	ADS Convention, Columbus, Ohio
Spring 1994	ADS Convention, Portland, Oregon

HERE AND THERE

Something which seems to have gone unreported in these pages is the fact that the Peter Barr Trophy was awarded to Barbara Abel Smith in 1989 for her work with daffodils. Mrs. Abel Smith is well-known to regular convention attendees, and her April Love and Park Springs grace many of our gardens. Congratulations!

The 1990 Australian Daffodil Championships will be hosted by the Kyneton Horticultural Society in Victoria on September 8-9. Anyone interested in attending can contact Fred Silcock, Salisbury Road, Mt. Macedon, Victoria 3441, Australia.

Word has reached us that Lindsay Dettman, of Diamond Creek, Australia, has died. Mr. Dettman was the operator of Ellimatta Daffodils, and was a speaker at the Columbus convention in 1978. As a raiser of daffodils, he frequently named them for friends, and such daffodils as Laura, Bonnie Marie, Sally Ann, Cecile Spitz, and Betty Beery attest to his American connection.

We have also had word that Mrs. Mel Williams (Ruby) has died. Mrs. Williams was particularly interested in early flowering daffodils, as well as horticulture in general, and was a former member of one of the Round Robins.

ADS also lost in November, life member, Mrs. Francis Field (Eleanor) of Asheville, North Carolina.

To the family and friends of these special people we extend our sympathy.

Over the telephone came word that Brian Duncan won the Engleheart Award and Best in Show. Cheers!

GOING AGAINST NATURE'S WAY OR MORE HELP WITH A $50 BULB

MEG YERGER, *Princess Anne, Maryland*

Nature has developed a tried and true way of planting daffodil seeds. They are held in a fully developed ovary between the stem and bloom of a daffodil until it ripens and the seeds fall to the ground. There they lie until germation occurs and starts a new flower. That is Nature's Way. Until 1988 I always planted when pods became ripe. In that year the drought was so dreadful, the heat so unbearable, the ground so hard that planting was postponed until fall. Seeds were sorted into small envelopes marked with an assigned seedling number and kept safe in a desk until the rains should come.

It finally rained in September. Thirty-eight crosses of poeticus daffodils were put into thirty-eight five-inch square plastic pots. First some topsoil and a sprinkle of super-phosphate were put in the bottom then more topsoil, potting soil, fine charcoal, and vermiculite on top of that. Water from the hose wet down this mixture to allow for settling. Then another rain was awaited after which the envelopes of seeds were shaken out from their envelopes, acting almost alive with eagerness to get into the dirt. More potting soil was poured overall to await spring. It was about time to say, "Ah—a job well done!" But no—not yet! Just then a squirrel hurried past with something in his mouth that he tried to bury until he noticed me. Then he tried several other places for his mouthful, glanced at me each time, then finally ran out of sight. My husband had told me that as he practices golf in the yard he sees squirrels with something in the mouth which they seem to exchange for some bulb-like thing already in the ground. I believe this to be true because year after year cultivars bloom in places they were never planted by me. In spring 1988, for example, it was mostly Daphne, which I never knowingly put anywhere except in the white section of the garden, that appeared out of place. They had to be retrieved and returned to their own proper place. Each year when blooms appear in wrong locations they have to be dug and set back with their friends.

The ruse I take now to thwart these mis-plantings is good old chicken-wire. Sections of chicken wire were stored in the shed so I brought out a long strip to lay over the poeticus bed just planted. A few bricks strategically placed can hold it in position. An extra bonus in using this is that it also discourages cats from using my friable earth!

All this completed I went to read my mail and lo—there was the September *Journal* with all the tips on what to do with a $50.00 bulb. Obviously the members Mackinney, Romine, Snazelle, and Wadekamper have no problems with the nut-bulb exchange so the chicken wire bit may be of no interest to them but it might well be added to their preparations for care of a $50.00 bulb.

HAWERA IN RETROSPECT

JANE BIRCHFIELD, *Abington, Virginia*

Recently, when I saw incorrect parentage attributed to Hawera in a dealer's list, I was reminded of how much mystery and conjecture had been associated with this enduring, endearing little daffodil since it was awarded an A.M. by the RHS in 1938.

It was not the first recorded miniature triandrus hybrid with reverse coloring. That honor goes to Little Queen raised by F. Herbert Chapman, from a cross made in 1908, which he listed as Calathinus × Minimum.

As he described Little Queen "it charmed me immensely when it first came into flower as, besides being a sweet little thing in itself, it offered the remarkable and unusual contrast of a pure white cup and a primrose yellow perianth; the only other daffodil I know in which this contrast is exemplified being *N. triandrus pulchellus*."

Apparently Little Queen was not long-lived since I can find no information concerning it, after Chapman wrote about it in 1912. (Another of his miniature seedlings, dating from about the same time was Minicycla—a pretty little thing but it, too, alas seems to have been lost to cultivation.)

On the other hand, Hawera has never looked back since it received an A.M. in 1938, for it continues to remain high on the list of desirable miniature daffodils for garden use, indoor decoration, exhibition, and culture under glass. Further it is readily available and may be truly classified as a low-cost, high-performance miniature.

For a long time the mystery surrounding it was related to its parentage. It was the contention of some writers that one parent was *N. triandrus pulchellus*, a speculation with which Alec Gray did not agree. In 1938 he wrote:

> Another very charming flower, not at present to be found in any bulb catalogues, is the *N. triandrus* and *N. jonquilla* cross shown at the R.H.S. Hall this year and awarded A.M. under name Hawera. It was raised in N. Zealand by Mr. W. M. Thomson and sent by him to Wisley.

Then Gray continues, after suggesting that one parent was probably *N. t. concolor*:

> this remarkable colouring gives a kind of firelight effect to the flowers which is most attractive; add to this the facts that the flowers of this hybrid have a very sweet Jonquil-like perfume, it is hardy, and a good doer, and we have an entirely desirable plant which deserves to be widely known.

His notes on Hawera conclude with the comment that *N. triandrus pulchellus* is mentioned by some authors as sometimes setting seed, but

that Hawera seemed quite sterile.

From the time I first grew Hawera (in the mid-forties) I was struck by the fact that it was so healthy and hardy; and that it seemed to go on increasing, year after year, holding its own in shows and for garden use, when similar types of miniature hybrids were, in many cases, here today and gone tomorrow. As time went on I became increasingly curious about what the parentage was.

For some time I thought it very possibly had resulted from a cross between *N. t. pulchellus* and *N. jonquilla* as some writers had suggested. My reason for thinking this was that Dr. William Malcolm Thomson (he was a medical doctor) was attempting to make crosses, using as many of the small species and forms as he could secure, at about the same time that Sir Algernon Thomas was known to have a "wonderful colony of *N. triandrus pulchellus*" growing in his garden at Auckland. And, although Hawera (the home of Dr. Thomson in South Island) was some distance from Mount Eden, in Auckland, the garden and daffodils of Sir Algernon were famous throughout the Dominion and, in fact, most of the daffodil world.

It just seemed logical to me to think that if Dr. Thomson was tracking down all of the miniature species and forms possible, it was not too improbable to think he may have gotten bulbs of *N. triandrus pulchellus* from Mount Eden. As to when the cross was made, I thought it had to be at least a few years prior to when it received the A.M. in 1938—for by that time it was said to be growing in quantity and flourishing not only at Wisely but also in the Bowles garden at Waltham Cross.

It was put up for consideration by the Director of the gardens at Wisley as "a variety for the alpine-house" and the vote was unanimous to award it the Award of Merit.

Unsolved mysteries fascinate me, but I find it even more fun to solve them. So, I was delighted to finally, at long last, settle some of the questions concerning Hawera—straight from the horse's mouth so to speak.

In a article in the *Journal of the Royal New Zealand Institute of Horticulture* (January 1942) Dr. Thomson wrote about his hybridizing attempts, using pollen of *N. triandrus albus* on flowers of *N. jonquilla*. There were seventy seedlings and of those, only one, showed any evidence of being a true cross between the species. This was the one that later was named Hawera.

As he wrote, "I liked it so much that I tried many times, over a longish period of years to reproduce it; grew jonquils in pots and emasculated all the flowers; capsules formed and sometimes ovules would swell up, but the capsules withered and the ovules became ghosts; a black coat would form but then shrivelled, never a fat shiny seed."

Meanwhile he sent bulbs of the one successful cross to Wisley for trial in 1929. First he was notified that the Daffodil Committee of the RHS had seen it and considered it was equivalent to *N. triandrus pulchellus*. Then,

in 1938 it was considered to be different from the species and it was given the name Hawera (for its birthplace) and awarded the A.M. The rest is history.

As it happened Dr. Thomson never saw a bloom of *N.t. pulchellus*. He tried to import this species but what he received took years to flower and then proved to be a small-flowered from of *N. bulbocodium*.

Until his death in 1942 he continued to make crosses he hoped would duplicate his initial success but nothing comparable resulted and he wasn't even sure of the parentage of many of the crosses he tried. But in this case, one was enough to enshrine him in a Daffodil Hall of Fame if we had one!

As of now it has been more than sixty years since the cross was made that resulted in Hawera—surely by now it has more than proved its worth from every standpoint. While the award would be late in coming, I, for one, think it is high time that this wonderful little daffodil should receive a First Class Certificate. Can anyone think of another daffodil more deserving?

SOME RECENT COLLECTIONS FROM THE WILD

JAMES WELLS, *Red Bank, New Jersey*

My title is somewhat misleading, for you might suppose that I have been responsible for new collections. How I wish that this were so. But even better than my untutored wanderings, were they possible, have been the organized and knowledgeable excursions made by three people to whom I am deeply indebted for sharing their bulbs with me. They are Michael Salmon, John Blanchard, and Henning Christiansen.

Since I began to collect and grow species and miniatures, the bulbocodium group has been of special interest, mainly because they are generally overlooked and forgotten. They are of little value for showing, for, in the main, they are long past when the spring shows begin. However, I like them all, and as a result enjoy a fine and varied display in my

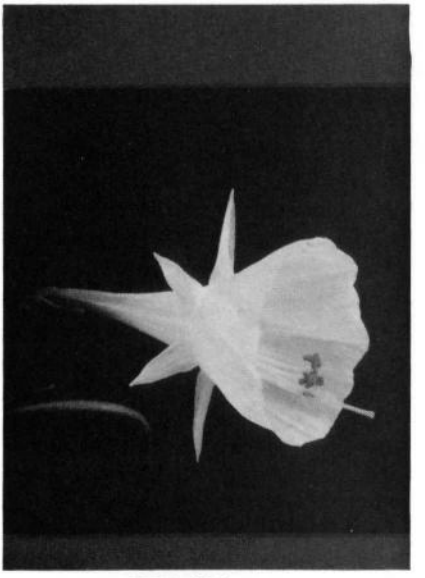
greenhouse from early October through to the following March.

MS 424 is a new collection of *N. bulbocodium cantabricus* from Michael Salmon. This is a fine bulb, vigorous with scapes from six to eight inches tall surmounted by large, wide spread flowers of a startling white. The corona, while being typical bulbocodium, is wide spread and not too deep, so that the flowers when fully open look rather like a group of white full moons. This is one of the later forms of cantabricus to flower, coming into bloom indoors in a pan in mid-February when most of the white flowering bulbs in this group are long gone. I like it for its crisp clean color, its well formed wide open flower, and its time of flowering which materially lengthens the cantabricus season.

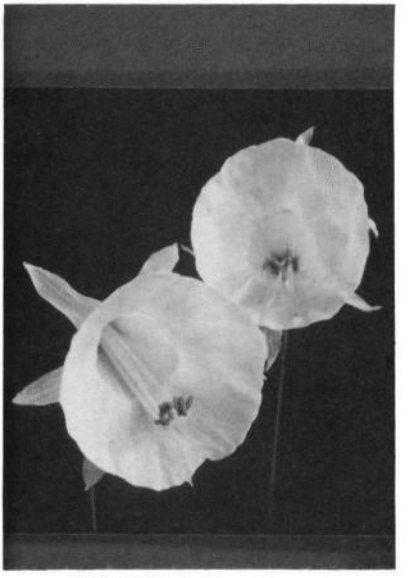
BL 86I4 is another form of *N. b. cantabricus* collected by John Blanchard. It flowers at the same time as MS 424 but the scape is distinctly shorter—not more than three inches—and the flowers are smaller in proportion. Also the flowers are quite unique in that the edge of the corona is deeply notched to a degree that one might almost call it tattered. The edges are so deeply notched that the effect is quite astonishing. This crisp clean white flower is a real natural miniature, a true alpine in fact, and I enjoy its sturdy yet diminutive form.

HC 6202, still in the bulbocodium group is a collection by Henning Christiansen from the Spanish hills. It is a very good from of *N. b. conspicuus*, and as such you may wonder why I have mentioned it. It is the same as the later ones, but starts the flowering season off in mid-January some three to four weeks before the standard forms. This, I suggest, is a worth while trait.

BL 86I5, a Blanchard collection, comes into bloom in mid-February. This is a stronger form of *N. hedraeanthus* which grows more strongly and with slightly larger flowers than the normal form. I have only one bulb,



SF 72 *N. kesticus*



MS 424 *N. bulbocodium*

but it is doing well. The standard *N. hedraeanthus* is long since over at that time.

MS 451, this is a curious bulb from Michael Salmon which appears to be a natural hybrid between *N. b. obesus* and *N. b. conspicuus*, with a dash of *N. pseudonarcissus* in there somewhere. The scape is similar to *N. b. conspicuus*, six to seven inches tall, and sturdy. The bright yellow flower opens in much the same way as *N. b. conspicuus*, yet the corona, while being expanded, is also rather long, certainly longer than other forms of conspicuus. Rather late in blooming, it buds in February, coming into full bloom early in March. It is good bulb, growing strongly, and the flower is an interesting variation on the standard type.

SF 72 is recorded as *N. kesticus* collected by Salmon, but he later informed me that this may not be true. I hope he is right, for this is of little value so far. More recent collections of this species have been made, so I doubt that this is the correct bulb.

Of the *N. triandrus* only one bulb of note has come my way. It is a new collection of *N. triandrus* ssp. *pallidulus* var. *aurantiacus* received from John Blanchard under the number SB 202. I now have three collections of this bulb, and of them all, I like this one the best. The form and texture of the flower is smooth, the small cup is also smooth and without serration, while the petals, small but flat and well formed, are strongly reflexed. As with all these bulbs the color is a deep golden yellow, mostly one flower per scape with an occasional two. This seems to me to be by far the best of this group, and it is the one that I am using for some hybridizing.

Three or four *N. triandrus* bulbs with natural trusses of five or six flowers have been selected from collected material purchased in bulk. Grown individually these bulbs do not multiply by division, but they are being "selfed" each year, and from the seedlings we may hope to produce

BL 8614 *N. cantabricus*

a strain which will have this multiple flower form.

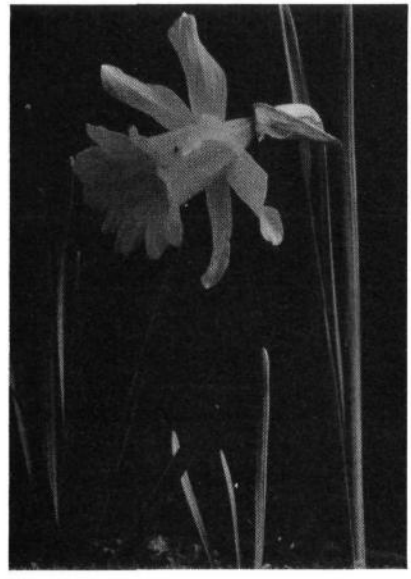
The two bulbs which I received from Frank Waley some years ago of *N. triandrus* ssp. *capax* died, but not before they had flowered and selfed to produce a good pod of seed. Sown three years ago, the pan showed some buds in February 1990. If these prove to be worthy, then again they will be selfed and thus I hope to maintain a steady supply of capax seedlings, for I can see no other way of maintaining this most excellent bulb.

Three new bulbs of *N. pseudonarcissus* have come to hand recently. The first is *N. eugeniae*. Those of you who heard John Blanchard speak at the Columbus meeting may remember that he showed a slide of this growing in the wild. This is a strange bulb. The foliage is typically pseudonarcissus, but short, quite broad, and rather stubby. A flower bud emerges from the center of the tuft of leaves and a quite large yellow trumpet-style flower opens when the scape is hardly three inches tall. The flower itself is quite large, yet it sits low on the very short stem. At this stage it looks rather grotesque but the scape slowly elongates reaching about six inches at the end of a week, at which time the flower appears more in proportion. This bulb may have a value as a potential parent.

Two other bulbs which came from Michael Salmon, are stated to be new collections close to *N. asturiensis*. These were named *N. jacetanus* and *N. jacetanus* var. *vasconicus*. The foliage on these is more broad and somewhat taller, thus being closer to *N. nanus* than *N. asturiensis*.

The flowers are somewhat larger and are produced on stiff short stems of about four inches. The general effect is a more sturdy form of the original species *N. jacetanus* var. *vasconicus*. It is supposed to have the corona restricted towards the end, thus producing a corona with a vase shape. The bulb that has flowered does show this tendency but the effect

N. jacetanus



N. eugeniae

is not marked, and unless it becomes more pronounced as the bulbs settle down, it is hardly worth the separation. However, the form of both bulbs is good, the color a clear bright yellow, and they may well prove to be of value for breeding.

In the jonquilla section one or two excellent bulbs have been received. One that I like very well is *N. jonquilla* var. *cordubensis*. This came from Michael Salmon as a new collection and flowered well on nine to twelve inch scapes in the greenhouse. The flowers are at first sight typical jonquil, but the petals are separated around the corona so that when viewed head-on the flower looks like a small windmill. I planted it outside and it grew very well indeed on much shorter scapes—six to seven inches—at most. This is a good bulb which I think will eventually find its place in the garden as an intermediate.

MS 429 is a new—and much better—collection of *N. jonquilla* ssp. *cuatrecasasii*, for it grows and flowers well, and seemingly has none of the cultural problems which surround the original form. Doing well in pans, it comes into bloom early in March. It should be used to repeat some of the crosses which are on record with the original form, for I am certain that the resultant seedlings will be much better.

BL 9609 is a new collection of *N. gaditanus* made by John Blanchard, but seemingly without some of the drawbacks of the form now generally being grown. Still diminutive and with extremely fine postrate foliage, this bulb flowers with greater regularity. I have had a flower or two on this pan for the past three years, and while one cannot by any stretch of the imagination call it a blaze of color, yet as a bulb to use in hybridizing, its regular flowering has a real value. Many of the bulbs now being grown under number as hybrids with the original *N. gaditanus* do not do very well, seemingly having inherited most of the bad habits of gaditanus, without any compensating virtues. Yet I have a group of seedlings in full bloom in mid February which are a cross made some five years ago between *N. gaditanus* and *N. triandrus* ssp. *pallidulus* which seem to me to be excellent, so much so that I intend to register the best one—when I have decided which division it is—as Bow Bells. With one successful cross, I shall pursue the value of this new collection on other bulbs.

We come finally to a bulb which I think is an excellent, even exciting, aquisition. This is MS 511 from Michael Salmon, a most excellent form of *N. jonquilla* ssp. *requienii*.

In height and habit of growth it is similar to the standard form but the individual flowers are distinctly larger. Each measures 30mm across, while the corona is 15mm wide and 8mm high, all measurements distinctly more than usual for this species. However the flower does at first seem rather lacking in smoothness because the petals are twisted, the sides of the corona ridged and the edge somewhat fluted. As a result, I can imagine that this will not be a popular show flower, yet I feel that well grown in the miniature border it may well be quite outstanding.

DAFFODIL PRIMER

DAFFODILS IN SUMMER

HELEN K. LINK, *Brooklyn, Indiana*

When the last daffodil bloom has faded it is time to decide how to treat those bulbs which produced beautiful spring blooms. We will strive to treat them so that we will have excellent bloom in years to come.

First, go through your plantings looking for and marking those which are crowded and need to be dug and divided. Not all cultivars multiply at the same rate. Some may need to be divided in two or three years and others may not need division for four or more years. It all depends on the cultivar.

Secondly, observe the health of the foliage; if it is sparse and has matured too quickly the bulb may need to be dug to see whether it is healthy. Observe all foliage for virus infection. Many times virus does not show up on the foliage until warm weather arrives. When virus is detected, remove the infected bulbs and destroy; there is no treatment.

Never remove foliage from the bulbs until it has become yellow. The bloom is manufactured within the center of the bulb for the year following; therefore, all the foliage is needed for proper photosynthesis.

Thirdly, it is well to dig bulbs as soon as the foliage is yellow. If allowed to dry out completely, it may be difficult to find all the bulbs and some may be left in the ground where they are not wanted or worse, some may be sliced in half with your shovel. Be careful not to damage the bulbs in digging. Cuts and bruises may cause rot to develop. Clean the bulbs and dip in a Benlate solution (2 tablespoons of Benlate to a gallon of warm water, 80 to 85 degrees F for 15 to 30 minutes). This is a good preventative for basal rot. If any rot is found, the area may be excised into good tissue and dipped with the other bulbs. Beginning basal rot usually appears as a purplish color to the tissue around the basal plate. If fresh roots surround the basal plate do not remove them; let them dry off naturally. Open cuts make for easy entrance of basal rot.

When dug, cleaned, and dipped, the bulbs are ready for storage. Be sure to place them in a well ventilated, cool place. A damp basement with no ventilation is conducive to basal rot. Try to find an airy, cool spot. An electric fan will help dry the bulbs quickly.

Another daffodil season will soon be approaching so summer is the time to study the catalogues and place your orders as early as possible so that you get the cultivars you have on your want list. Planting time is not far away. Enjoy the summer dreaming of the new cultivars you are planting for next spring.

MOTHER NATURE'S TWIN SCALING

or

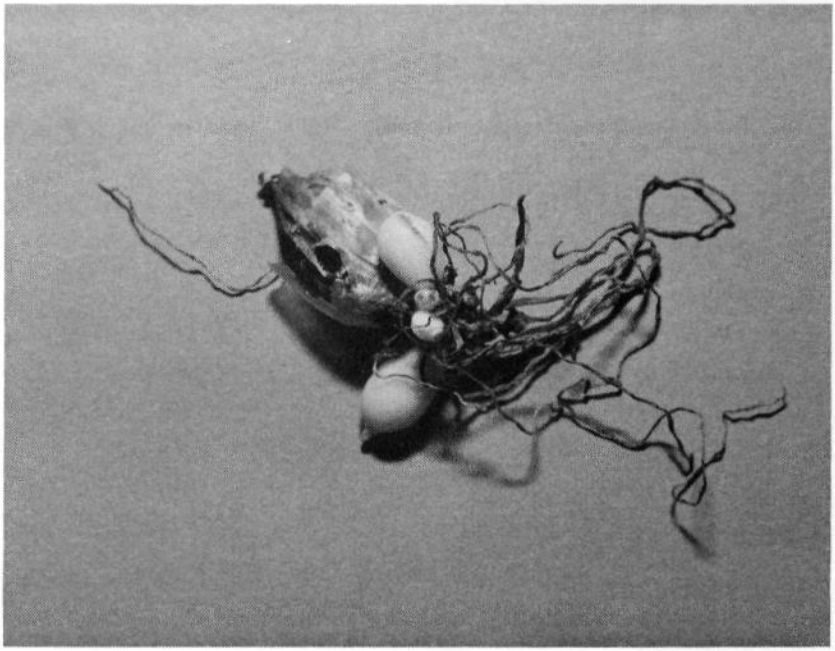
EVERY CLOUD HAS A SILVER LINING

MARY LOU GRIPSHOVER, *Milford, Ohio*

Sometimes, if you look for something good in a bad situation, you might be surprised and find it. Not always, but sometimes. Last spring I was troubled by quite a few daffodil flies buzzing around my pots of daffodils, and try as I might, I couldn't stomp on all of them! The neighbors on their balconies must have been amused to watch me stalking some unknown critter and stomping whatever it was to smithereens! I didn't get them all, so I knew I would have to carefully examine my bulbs at planting time.

It came as no surprise, then, to discover fly larvae in several bulbs. The larvae were dispatched to larvae heaven and the bulbs either cleaned up or discarded, depending on scarcity, price, etc.

But the silver lining came in a seedling bulblet from Rainbow × *triandrus albus*. (You can see in the photo that the larva entered from the side and not the basal plate.) The bulblet itself was soft and worthless, yet at its base you can clearly see four tiny new bulblets. As this cross will surely bring me fame and fortune, I have planted the bulb as pictured and await its first bloom in another five years. I just hope I've killed all the larvae!



JAN deGRAAFF

1903-1989

World-renowned horticulturist, daffodil grower, and lily hybridizer Jan deGraaff died in August, 1989, at his home in New York City at the age of 86.

Born in Holland, Mr. deGraaff came to Oregon in 1928 to take over the family business, which he operated as Oregon Bulb Farms.

He began hybridizing daffodils, expanding the number of varieties to coax his customers away from King Alfred, which deGraaff considered "too common." After World War II, when the bulb embargo was lifted, he began working with lilies, where his efforts led to the introduction of the Bellingham and Asiatic hybrids.

In the early years of the ADS, Mr. deGraaff was a frequent contributor to the Yearbooks, and Chairman of the Commercial Committee.

Our sympathies to his family.

THE ADS ESTABLISHES A RESEARCH AND EDUCATIONAL TRUST FUND

JULIUS WADEKAMPER, *Faribault, Minnesota*

The annual meeting of the Board of Directors of the American Daffodil Society at Callaway Gardens in Pine Mountain, Georgia, on March 31, 1990, was significant for several developments. Among them was the establishment of the Research and Educational Trust Fund.

The basic idea of this fund is to set up a vehicle for the investment of monies, only the interest of which will be used for significant research or educational purposes. The fund will guarantee basic capitol that will generate interest for the given purposes thereby eliminating the necessity of using general revenue funds from the annual budget for research or education.

The move is significant because it may encourage contributions when donors know that their money will be invested so that only the interest will be used for very significant work in daffodils. Some people are hesitant to make donations to the general operating expenditures, money which is given today and gone tomorrow. Many people feel that membership and certain fund raising activities should sustain the general operations of the society, but this makes no allowance for special situations which would be a benefit to all of us.

The rules of the Trust Fund are set up in such a manner that the

principal office of the trust is located at the office of the Executive Secretary. Further, the treasurer of the ADS is also the treasurer of the Trust Fund. The Trust Fund thereby operates under the ADS for tax purposes as well as investment purposes.

The rules of the Trust Fund establish a Board of Trustees consisting of not less than five nor more than ten members who are appointed by the ADS president in consultation with the Chairman of the Board of Trustees and approved by the ADS Board of Directors. These members serve for two years and are eligible for reappointment.

The Chairman of the Board of Trustees is appointed by the ADS President with the approval of the Board of Directors. The chairman presides at all meetings of the Board of Trustees.

The Trustees meet annually at a date and place designated by the chairman and upon written notice of the secretary of the Board given at least one month in advance of the meeting.

This will be a great step forward in establishing a more permanent foundation for our society.

Memorial Contributions

Kay Haines Beach ..... Mr. & Mrs. John Capen
Tom Bloomer ..... Northern California Daffodil Society
Virginia Carrington ..... Mrs. Melvin Winn
Murray Evans ..... Northern California Daffodil Society
Mrs. Melvin Winn
Bernard Hobbs ..... Mr. & Mrs. David Frey
Mrs. Robert Hoen ..... Mr. & Mrs. John Capen
Grant & Amy Mitsch ..... Mrs. Melvin Winn
Grant E. Mitsch ..... Mrs. Ben Robertson
Northern California Daffodil Society

OF DAFFODILS AND . . .

PERSEPHONE

FOOD FOR THOUGHT ABOUT FEEDING DAFFODILS. Junk food, i.e. commercial fertilizers, may be alright as a diet for annual flowers, bedding plants, or single-season vegetables—but I assume that no one is growing daffodils as an annual crop, intentionally!

So-o-o it pays to take the time and trouble to track down good mineral sources of the three main elements and trace elements and mix them with your soil in such a way that they are available when the plant needs them.

N—for nitrogen produces good leaf growth, lengthens period of growth, and *increases seed set*. At the beginning of the growing season your daffodils will utilize nitrogen if it is available and most likely it is present in good soil. Too, it is most easily corrected if insufficient. But to be on the safe side, when preparing a new bed, or mixing soil for adding to areas in borders or naturalized plantings, it is a good idea to add two pounds of alfalfa meal per 100 square feet of soil. This way you'll be sure you have enough but not excess nitrogen, which results in soft, elongated, weak stems, poor foliage and flower color, and poor resistance to disease and insect damage. (Note: if foliage color indicates a need for N—give plantings a light sprinkle of blood meal or dried blood as a side dressing.)

P—for phosphorus must be incorporated in soil being prepared. It does not travel about in the soil and cannot be used effectively as a side dressing. It is essential for a strong root system and good growth. It affects the color and substance of flowers, has a direct relation to seed production (insufficient phosphorus causes sterile seed) and provides resistance to insect damage and disease. I find the best source for P is rock phosphate, mixed in the soil at the rate of 1 pound per 100 square feet of ground. If plants require a more alkaline soil (and some daffodil species and their hybrids do) I substitute lonfosco soft phosphate plus a bit of dolomitic limestone and stir in some crushed oyster shell.

K—for potassium is the other element that must be mixed into the soil to depth of root run. Sufficient potash is essential but enough is a feast! Too much can lead to disaster for when too much soluble potash is in the soil the plant will take up too much and this can prevent the plant utilizing other elements it needs. This cannot happen if one uses a natural mineral source of potash.

I use greensand at rate of two pounds per 100 square feet of ground. This supplies a stable supply of K to insure stem strength, in fact strength of entire plant. It provides firm plant tissues that are resistant to disease and insect damage and can tolerate extremes of heat and cold. Further it decreases water requirements and provides some protection from excess water. And, most important, it is an aid in utilizing nitrogen, balances effect of excess nitrogen and calcium, and generally promotes good

growth.

As for the various trace elements, we still don't know everything they do, but we do know they are essential for plant health, productivity and beauty. Some of these are found in all of the above recommended materials but just to be on the safe side I add kelp and erthrite to the compost pile. Nothing that can be composted ever leaves the place in its original form and to speed along the process and make the end result more effective I add kelp at the rate of two pounds per 100 square feet of material, five pounds of erthrite for the same amount and usually I toss in some extra greensand which is not only an excellent source of potassium and trace elements, it binds sandy soil and loosens heavy soil. Wonderful stuff!

Is it worth the effort to track down these materials and use them as recommended? I would say a definite "yes!" I have followed this method since I first began to grow daffodils and most of the ones I am now growing are the descendants of one or two bulbs purchased and planted thirty, forty, or more years ago. A good thing they are too—for if I had to purchase them today I probably couldn't find most of them, or if I did, they would break the budget, or not be correctly named.

NOW, ABOUT LUMPERS. In response to my notes about "splitters" I received a query, "How do you feel about lumpers?"

Well, I view them with the same lack of enthusiasm I have for the splitters. As it was in the beginning, I knew what I was referring to when I wrote *NN. tt. aurantiacus, albus, concolor, pulchellus, loiseleurii,* et al—and other people seemed to have no trouble understanding what I was writing about!

As it is now I think I could not switch over to three species of triandrus, indentified only as *N. triandrus sbsp. triandrus.* This ol' dog is too old for that trick.

And, as for the new listing of *N. pallidiflorus pallidiflorus, papyraceus papyraceus, bulbocodium bulbocodium* and others, I can only say they all remind me of Browning's thrush

> ". . . that sings each song twice over,
> Lest you should think he never could recapture
> The first fine careless rapture."

Or, come to think of it, Mel Tillis (the country singer who stutters a lot). To my way of thinking one pallidiflorus, papyraceus, or bulbocodium in one name is enough!

ABOUT RECLASSIFICATION I take an equally jaundiced view, particularly in cases like the recent shift of Tete-a-Tete from Division 6 to that new catch-all Division 12.

1. It was originally classified as a cyclamineus hybrid by Alec Gray—I happen to know that he thought it was in the right division and I think it is playing dirty pool to change it when he is no longer here to be consulted about the change.
2. When a clone is so widely distributed for so long a time and is still

being sold, all over the world, in large quantities, I think changing the classification can and will lead to a lot of confusion.

3. Since it came from the same capsule as Quince and Jumblie how can there be justification for changing just the one of these cultivars?
4. When a cultivar, has been given so many awards under original classification, what then?

The above are just a few of the reasons I disapprove of this reclassification. I would only add a question: Did anyone consider what a can of worms would be opened by this change? I can think of two dozen other cultivars, right off, that look less like Division 6 than Tete-a-Tete does. Is someone going to try and change all of these—and if so, won't their originators (who are still living) take a dim view of such high-handed actions?

Right now, as I write, I have a lovely pot of Tete-a-Tete blooming on a sunny window sill, with stems of one, two, and three florets each and *all* have perianth segments that are somewhat reflexed. There is no question in my mind but that they are cyclamineus hybrids. Had I been consulted about this change ("not bloody likely," as Eliza would say) I would have said, "Since it ain't broke, why fix it?"

PANTYHOSE PERDU. If you haven't already become aware of the virtues of recycled pantyhose or nylon stockings, here are a few tips worth following.

1. They can be cut into small squares to protect crosses that have been made, or to protect seeds after open pollination. Fasten a square of the nylon over the bloom (as soon as it has been worked) or over the capsule (as soon as it starts to swell) using a string tag, on which you can write any relevant information. This quick drying cover can stay in place until you cut off ripened seed capsule, and remain in place until you have counted seed and planted—or distributed—and info on the string tag can be transferred to a permanent record.
2. After bulbs are lifted and cleaned they can be stored in nylon stockings, just make a knot between varieties and tie on a string tag to identify. (These are especially good for miniatures and other small bulbs.)
3. When cut in strips these nylons make perfect garden ties that don't bind, but hold stems firmly in place.

FINALLY—on the subject of storing and handling bulbs I'll pass along the most recent solecism I've found. It advised:

> "Check your bulbs for holes then put them in mesh bags and wash them."

I assume the writer meant for you to put the bulbs in the bag but what she said was, in effect, "put the holes in mesh bags and wash them."

Whether you store the holes or the bulbs, you don't have to have mesh bags—recycled nylons do just fine! And, I repeat, for miniature bulbs they are even better.

HISTORICAL PERSPECTIVE: EARLY LITERATURE OF THE DAFFODIL

JOHN D. CHEESBOROUGH, *Chapel Hill, North Carolina*

(from North Carolina Daffodil Society Newsletter, 1988)

Then the beautiful wild plants and the tulip tall,
And Narcissi, the fairest among them all,
Who gaze on their eyes in the stream's recess,
Till they die of their own dear loveliness.

—Shelley

It has been said that more has been written about the daffodil in the publications of the American Horticultural Society than any other flower. This began with a series of Daffodil Yearbooks which were initiated in 1935.

Our love of daffodils, as well as our literary tradition, clearly have their roots in our British heritage. This brief overview of Daffodil literary classics will necessarily focus only on the high points in chronological order.

Gerard's *Herbal* was first published in 1597. John Gerard was a celebrated physician and gardener who maintained the famous Physic Garden in Holborn. Daffodils (single and double), Narcissi and Polyanthus Narcissi (Tazettas) are all depicted.

The next significant volume is the *Paradis in sole Paradisus Terrestris* by John Parkinson, 1629. This was the first large book on gardening as an aesthetic experience rather than medicinal necessity. He listed about 100 varieties with descriptions and quaint remarks.

Flora or a Complete Florilege by John Rea in 1665 presages hybridizing of new varieties which was neither completely understood nor formally practiced for almost two centuries. "If any desire to sow the seeds of Daffodils, in hope to raise some new varieties, those of the Nonpareil, the great Spanish Yellow, the Spanish whites, the great Jonquilla are the aptest to bring good seed and the likeliest to yield diversities; they may be

sowed in September and not removed of three years, and then in June taken up and presently set again in good ground at wider distances, where they may stand until you may see what flowers they will bear and then disposed as they shall deserve."

Dean Herbert's 1837 *Amaryllidoceae* featured a known cross between a trumpet variety and a poeticus. This was important in that it inspired the first two great British hybridizers, William Backhouse of Darlington and Edward Leeds of Manchester.

Also influenced by Herbert were J. G. Baker of the Royal Herbarium at Kew and F. W. Burbidge of Cheswick, Kew and Dublin, who published the classic *The Narcissus: Its History and Culture*. This is certainly the most beautiful volume on Daffodils ever published with the profusion of full page color plates by Burbidge. Yet Baker's scientific review of the entire genus remains a standard reference today. Additionally, his historical and cultural notes remain a delight to read: "Now there can be nothing easier than to make as good a display as can be desired without touching a single root of the Daffodils. To prepare the way, let there be spread over the beds in winter a good coat of rather fat rotten manure which must be broken and made workmanlike by the rake.... On the margins of streams, islands, or lakes Narcissi are peculiarly attractive and generally succeed well in such cool moist situations. In order to preserve them in beauty as long as possible, they should also be planted in sheltered nooks and corners, exposed to the east, but shaded from the hot midday sun and rough winds, both of which are fatal."

N. RUPICOLA AND ITS WILD HYBRIDS

KATHRYN S. ANDERSEN, *Wilmington, Delaware*

In early May of this year, Marilynn Howe, my daughter Sally, and I set out once more to study species daffodils in Spain and to evaluate their promise for survival in various indigenous areas. Sally will report our findings in detail in a future issue. I will deal only with our encounters with *N. rupicola* ssp. *rupicola*, hereafter known as *N. rupicola* and its wild hybrids in various high passes (Puertos) of the Sierra de Guadarrama northwest of Madrid.

Above 1500 m. most of these puertos and their easterly approaches were cloaked with golden yellow *N. rupicola* blooms, their bulbs rooted in humus pockets of every rocky crevice among the low granite outcroppings. Never had we seen much a plethora of *N. rupicolas*! They were observed in varying sizes, habits and forms. Some grew singly, some in small clusters and some in huge clumps of 12 to 15 stems. Heights varied from 11 to 35 cm and bloom diameters from 15 to 36 mm. (Miniature to standard). Some were starry with pointed petals while others were

perfectly round, their petals well overlapped. Some coronas were short and cone-shaped, and others were flat and spreading with margins entire, slightly crenate or 3- or 6-lobed. Most were borne singly, but some had two heads or even three. These were quite crowded since *N. rupicola* grows sessile to the stem even when multiheaded.

Several patches removed from normal traffic areas had clearly been ravaged by bulb collectors. One evening we found the thin soil pock marked with man-made holes, the freshly churned up humus still dark brown. Had it been earlier in the day, we might have stayed around to investigate strange noises in the adjoining underbrush, but we did not care to have encounters with strangers in the approaching darkness. *N. rupicola*, though presently not at all endangered now in the Sierra de Guadarrama, is certainly being exterminated from more than one discrete location by total collection from the site. Think twice before you buy those miserable little imported bulbs sold variously under the name of "rupicola", "juncifolius", or "requienii". Many are *N. rupicola* bulbs which have been ripped from the wild in full flower and when sold as tiny desiccated bulbs will never bloom again.

Lower down the mountains, the upper reaches of *N. triandrus pallidulus* merge with the lower reaches of *N. rupicola*. It was here that we searched for and found hybrids. In his new book, *Narcissus, A Guide to Wild Daffodils*, John Blanchard states that Fernandez Casas had described a hybrid between *N. triandrus cernuus* (= *N. t. pallidulus*) and *N. rupicola* which he found above Rascafria and named *N.* × *rupidulus*. On May 9, above Lozoya, 11.7 km. from highway C 604, we came upon a choice hybrid, 5/9/3, which we assume to be *N. rupicola* × *N. t. pallidulus*.

N. rupicola with *N. triandrus* 5/9/3

It grew among *N. rupicola* and close by *N. t. pallidulus*. A future comparison of our findings with the original literature will reveal if 5/9/3 resembles *N.* × *rupidulus* of Fernandez Casas.

Description of 5/9/3

Bulb	brown, globose, 23 mm
Foliage	grey-green, lightly channeled, linear veins, semi-cylindrical, erect, 2.5 mm wide, 19-24 cm long
Stem	round, 14.5-17 cm, twisted
Pedicel	5 to 23 mm depending on number of blooms
Tube	yellow, 3A, 2 mm diameter, 17 mm long
Flowers	ascending, solitary or in umbels up to 3, individual flowers, 29 mm diameter
Petals	yellow, 3A, slightly reflexing, imbricate, not twisted
Corona	yellow, 3 A, cup-shaped, entire, 9 mm diameter, 8 mm high
Anthers	biseriate, 3 inserted in tube, 3 in the corona
Style	included, just overtopping upper anthers

This hybrid exhibits characteristics of both parents. The soft yellow color, 3A, is midway between the creamy white of *N. t. pallidulus* and bright canary of *N. rupicola*. From *N. rupicola*, it inherits smooth texture, imbrication and shape of the perianth segments, and an ascending or horizontal pose. From *N. triandrus*, it inherits multiplicity of blooms, entirety of cup margin, green foliage color, and pleasant fragrance. Some of the other hybrids inherited weaknesses rather than strengths from the parents and will not be described in any detail here.

I'M A SLOW LEARNER

DR. WILLIAM A. BENDER, *Chambersburg, Pennsylvania*

(from the Tuscarora Trumpet, Vol. 1, Number 1)

The Chinese New Year of 1989 known as the Year of the Serpent came slithering in last week. In celebration of this occasion let us as a Daffodil Group determine to search out this stealthy little serpent, the *Ditylenchus dipsaci* (1.0 to 1.8 mm long and 0.03 to 0.06 mm wide) invisible to the naked eye but under 450x magnification looking much like a serpent.

Reviewing my past records I can say with confidence that I've been living with *Ditylenchus dipsaci* for the past 10 years! While lifting seedling bulbs in bed #19 in July, 1979, I lifted a 3 cm. bulb with no neck. I cut it sagitally through the basal plate and found 18-20 small narcissus bulb fly larvae. Rees, in his book *The Growth of Bulbs* says that the small narcissus fly frequently totally destroys bulbs previously attacked by eelworm. The next year I lifted a number of bulbs from bed #33 with soft necks (no record of the cultivar). There were necrotic ring scales in the transverse cut across the neck which extended well down into the bulb but did not reach the basal plate. I cut up several bulbs, making slides (dated 1980), and sent a bulb to Western Washington Bulb Research and Extension Center in Puyallup, Washington. Report from the nematologist: No nematodes seen. Only pathogen found was *fusarium oxysporin sp. narcissi.* I was relieved, and decided I had a super-virulent strain of *fusarium.*

By 1985 I was struggling with my super-virulent strain of *fusarium.* I had delayed planting until the soil had cooled. My October 17, 1985, planting notes reveal: "Had only light frost. Temperature still 65-70° daytime." "Started bed #2 with Phillips bulbs; other N.Z. bulbs to east of Phillips. Quaint badly deteriorated from *fusarium.* Ten small bulbs planted in soil mixed with heavy sprinkling of $CuSO_4$ crystals—too much! West in bed #2 Springdale, 2 W-W, dusted with $CuSO_4$ on top of *fusarium* damaged bulb (black rings tops)."

In 1986, when I lifted my named varieties on the 6th Street terraces, I found extensive basal rot in the south one fifth of beds #31 and #32, but no more than usual otherwise. I discarded numerous older varieties to the

trash cans, but other local growers complained of greater than usual losses from basal rot, so I assumed it must have been due to climatic conditions.

In April, 1988, I was looking for virus infections to rogue out of my planting, when I found spickels on the foliage of a named variety in bed #13. This was the first time I had ever seen spickels in any daffodil, but I knew that was the sign of the serpent, *Ditylenchus dipsaci.*

I called the area A.P.H.I.S. (Animal and Plant Health Inspection Service) to get the correct address of the nematologist to examine the specimen and immediately packed off the plant with spickels with the bulb and a cup of surround soil. There had been no report before the Washington A.D.S. Convention, so I sent another specimen to the Western Washington Bulb Research and Extension Center in Puyallup, Washington for a "second opinion". In May, both nematologists reported *Ditylenchus dipsaci* present.

Well, I tell you—that was a real blow to my ego—worth at least 1,000 points on the Holmes Scale. After searching my notes for the past 10 years, I still don't know how, or from whom, it came. Perhaps that's just as well. There are 20 different strains of *Ditylenchus dipsaci* throughout the world—maybe I've developed a new race: *Ditylenchus dipsaci sp. Bender race 1.*

After consultation with Dr. Heglund from W.W.B.R.C. and several down-under growers, I have developed a three-point plan of eradication:

1. Four hour hot water treatment for all bulbs to be planted back. Badly infested stocks and throw-away seedlings have been taken to the landfill.
2. Methyl bromide sterilization of each bed after lifting.
3. Plant back with a proven effective nematocide "salted" in row over bulbs. Because of the intolerably hot summer, I got only ½ my beds lifted and treated in 1988. The balance of the clean-up should be completed in 1989.

To all of you daffodil friends, I'm terribly sorry about the serpent and I NEED YOUR HELP. I doubt that those who have bought bulbs in the past were furnished infected bulbs, but those who got free throw-away seedlings may have gotten some with eelworms carried in the bulb. So, to avoid further dissemination of this DANGEROUS pest, I ask you to PLEASE examine your daffodils closely for the NEXT SEVERAL YEARS. Look for distorted or dying flowers and foliage; don't wait until you see spickels! (small pimples on the back side of the leaf.) Remember that eelworm is in the *soil* and in the bulb, so that if you dig up a bulb with deformed foliage to check it out, be sure to line a bucket with a plastic bag to receive the soil to avoid spreading it all over your garden. If you have lost several bulbs in a group, with unhealthy surrounding bulbs, CALL ME. You may need to sterilize your soil with VAPAM with the bulbs in place sacrificing nearby plants. Or, if you find black rings after cutting across the neck of the bulb, you need to hot water treat all bulbs and sterilize the soil with Vapam or methyl bromide.

The ultimate alternative, of course, is to move five miles upstream to virgin soil and by all new bulbs.

The Daffodil Journal
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