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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

Jan. 27, 1945

1849-3rd St
Concord, Calif.

B.Y. Morrison
Amer. Hort. Soc.
Wash., D.C.

Dear Mr Morrison,

Your note of the 22nd has received considerable thought. Particularly your comments about an Amaryllis section, and the possibility of editing same. Like any new activity there are a number of problems to be considered, as well as outstanding factors which are of importance---- Some are personal, others deal with the relations between the Horticultural society and the public. If you do not mind my taking your time I'll unburden myself:

Personally I am quite interested in the Amaryllids, and excluding several score hybrid Daffodils, I probably have 100 or so Amaryllid species and hybrids here in my small cool house, or outside. I know their culture and nomenclature fairly accurately, and pending some chromosome counts will probably clear up the cytogenetics sufficiently that it would be quite a story in itself. Likewise I have a fair reference library which includes both Bakers and Herberts books on the Amaryllidaceae, plus a number of other lesser known items. You can list these as assets....

The liabilities are numerous. Time is the primary item as I recently bought 10 acres of hillside where I hope to build when labor comes to its senses, and materials are available. Meanwhile I'm cramming in plants that can establish themselves there without water until I can move.

Then I have my regular work which is in the Agricultural Dept of the Shell Chemical Co. For some time to come I will be in and out while developing and building their DD applicators for soil fumigation (Nematodes), plus a score of other gegets.

The editing of material is something that I do not know too much of. My command of the Kings English takes queer twists at times, and having seen some of the MS that came into my hands for forwarding--- Well I have visions--- Some of it surely had its face lifted plenty..... I know that I wouldn't have the time or background for turning out quality text. However if your regular secretary works over the items for organization, continuity, and english I can certainly find time to proof read them for nomenclature or accuracy. However if I limit my myself to such a small part of the work I feel that I should not be rated as editor.

Now for another problem, external this time. Cecil Houdyshel has a mailing list of 30,000 catalogues. Presumably that number of people are interested at one time or another in bulbs. Some 60-75 a year wrote in via Houdyshel for Herbertia. Presumably 400 people are distinctly interested in Amaryllids and Daylilies and are permanent members of the AAS--- The others are floaters. Actually the Daylilies carry the Amaryllis... So it is not a

large group. Excluding the commercials you will find only 40 or 50 people that have any appreciable specie collections, and of these only a dozen rabbid collectors. However this latter group is growing, and with some continual interest may develop into something.

Regarding the commercial growers; most of them are too busy raising bulbs and operating their business to contribute manuscripts. They depend entirely upon catalogue or local wholesale trade to move their stocks, and since business is prosperous they are not especially interested in the asthetics. It is entirely the amateurs, or collector, which can contribute MS. There are no professional breeders now, and ~~they~~ if they did exist, they would not have any outstanding discoveries or hybrids to present.

(You mentioned the difficulties with the Lily people. Most of them are too busy making 15,000-25,000 dollars per acre on Croft hybrids up at Brookings, Oregon. I was there when we treated their plots for Sword Fern Nematode. (However what actually sold the DD was the fact it chased all the gophers and Moles out of the bulb beds.). Actually they don't want publicity, as it means more competition and lower prices for the bulbs--- Quite a set up!)

I seem to have wandered a bit, but on coming back to the special publication idea. I can't see enough interest to support an Amaryllidaceae unless the Daffs are included. Unless an effort is made to issue a booklet covering the more popular Amaryllids, giving their cultural requirements, species available, hybrids (especially named hybrids), diseases, and other miscellaneous items. I often have received requests for such, something like Bowles Narcissus, but the task of working up MS would be a problem that few people would willingly contribute to. I doubt that anyone in the country could give much regarding the parentages of present hybrid Amaryllis (*Hippeastrum*) strains scattered about---- Not even Traub himself!!! Neither are there any collectors in England now who know a great deal about the hybrids since Worsley passed on. Major Pam knows the species, but being a banker he is plenty sore about the financial setup now, and wouldn't be caught aiding us.

Afraid I havn't presented a very optomistic picture for you. I am naturally a bit conservative, and the mess I got into with the AAS has had its effect on my enthusiasm. However after you can think the situation over let me know what your reactions are.

In the meanwhile I can give several interesting leads --- Harry Stinson of Seattle is considering a monograph on the *Alstroemeria*. He is tops on this family. Arno Bowers is working on a Daff parentage list to top all lists--- He is rabbid on breeding Daffs. Dr Edgar Anderson has solved the genetics of breeding Daffs, and the practical aspects may be of interest.

All in all its my own opinion, and I am not trying to but into AHS policies, but I still think that *Lilium*, Daffs, Iris, and Amaryllids could all go together under one cover, thus creating a volume with more general interest and wider demand.

Sincerely yours,

W. H. Mansibal

January 22, 1946.

Mr. L. S. Hannibal,
1649 - 3rd Street,
Concord, California.

Dear Mr. Hannibal:

Thank you for your letter of January 12. I shall not betray your confidence. Certainly I am grateful for the news it contains, as it had not come to my ears.

The Department of Agriculture does not know about it and probably won't do anything about it. They never had brought any matter to an issue, save one, when Traub wanted to be senior author on a paper he had had nothing to do with: The real author made an issue of it and Traub was moved out of Florida. There are those who feel he should have been fired long ago, but that is too much to hope.

Certainly there can be no possible excuse for any one man changing the name of an organization without the proper action of the Society itself. But I am not surprised at all. It fits the Traub pattern in so far as I know it.

Our Society is making some considerable growth this year as a result of months of work by a small group of local members who did the "chores" of mailing out approximately 30,000 letters. I believe we shall get a full thousand new names for there are 968 as of January 19th. We are opening a campaign now for another thousand.

There is also a likelihood that the newly formed Camellia Society will undertake a regular section in the Magazine and use it for all matters save the Check List and such other things as properly concern their membership only. This parallels the work of our Lily Committee which was formed in lieu of creating a separate society. The real trouble there has been the lack of a driving power to bring the lily people together.

We have a fair number of members who have named Amaryllids as their hobby. I am writing personally to all of them to see if we can't get a better knowledge of their interest and if we get enough data, what about starting a regular Amaryllid Section? Would you consider being editor? All I could help with would be the chores here.

(Perhaps here is a good place to say that I am no Doctor - just an executive as far as U. S. Department of Agriculture is concerned and a

Mr. Hannibal

Jan. 22, 1946

mad gardener on my own - with narcissus and azaleas as my vices!)).

There would be a precedent for an Ameryllid Section since W. Mr. W. Taylor Marshall has agreed to run a Cactus and Succulent Section, which will appear in January. I rather think it would be fun to give old Treub a run for his money?

Sincerely yours,

B. V. Morrison.

BYM:skc

1849-3rd St
Concord, Calif

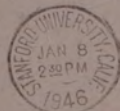
Jan 12, 1946

Dear Dr Morrison;

Your recent letter at hand, and I do not blame you for letting your hair down. I know a bit too much about the methods used by Traub. It was a sad day when I stuck my neck out so graciously to help him. Being green I got into the ding bustedest frying pan and then into the fire. Never again.

However, there is one thing that has occurred that will probably make you chew nails; namely Traub has changed the name of the ~~ASG~~ to the Amer. Plant Life Society. How

E. FREDERICK SMITH, ASST. SECY.
AMERICAN PLANT LIFE SOCIETY
P. O. BOX 2398
STANFORD UNIVERSITY, CALIF.



without consulting the members, or
ors, as far as I can find, is
has done it, and his intentions
petition in all fields.
getting out of the organization I
se my name as Exec. Secy. in conjunction
f he does will produce fire works here
and did not favor same. I also think it
well that someone in the DA knows of the high handed extent
that Traub will go to, to put his activities over. Also that
you know of this change of incorporation so that you can
modify your policies if necessary.

Would appreciate in discussing this above information
that you do not use my name. I am enclosing an envelop which
should be of sufficient evidence if same is needed.

Am plenty mad at myself for ever being associated
with such a screw-ball set up.....

Am glad to know that you are interested in Amaryllid
articles. I feel myself that Hutchinsons segregation of the
umbellate flowering Lilaceae into the Amaryllidaceae has some
common reasons, but it is not a matter of serious importance.
I probably have about the largest species collection of Amaryllids
in the country, and have made considerable progress in working
out the cytogenetics of breeding with many members of this group.
From the geneticists viewpoint Hutchinson is well vindicated, as
all of the umbellates follow a common pattern, which in itself
is very intricate, and entirely distinct from Lilium, or Hemero-
callis. All in all a classification is only a guide for ease
of identification. The most natural arrangement would be to
parallel evolutionary development, and I think Hutchinson
used this as his thesis. However he was by no means perfect.

Hope I havn't spoiled your day for you. Will try to
send something your way shortly for publication, but it may
be several days before I get Traub out of my system.

Sincerely,

L.S. Hannibal

1849-3rd St
Concord, Calif

Jan 12, 1946

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However, there is one thing that has occurred that will probably make you chew nails; namely Traub has changed the name of the AAS to the Amer. Plant Life Society. How an editor can do this without consulting the members, or even the board of directors, as far as I can find, is blamed unorthodox, but he has done it, and his intentions are to give you stiff competition in all fields.

In spite of my getting out of the organization I suspect that Traub will use my name as Exec. Secy. in conjunction with this change, which, if he does will produce fire works here as I had no part in it and did not favor same. I also think it well that someone in the DA knows of the high handed extent that Traub will go to, to put his activities over. Also that you know of this change of incorporation so that you can modify your policies if necessary.

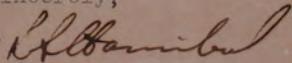
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Hope I havn't spoiled your day for you. Will try to send something your way shortly for publication, but it may be several days before I get Traub out of my system.

Sincerely,



L.S. Hannibal

1 January 1946

Mr. L.S.Hannibal
1649 3rd Street
Concord, Calif.

My dear Mr. Hannibal:

I am answering your letter to Dr. Stoutemyer(Dec.19) since much of it falls in my sphere of activity. First of all thank you for the seeds.

The office has taken note of the change of President.

The real difficulty in the matter of *Herbertia* and it ever widening interest is of several parts. In the first place, by no means all the botanists have accepted the Hutchinson idea of what should be included in *Amaryllidaceae*. The definite stand that that group took, the *Amaryllis* Society, is their own decision of course, but I personally suspect that science alone was not the determining matter. Again, the excessive use of personalities in *Herbertia* is a matter that is decidedly distasteful to many people and exactly what a lot of other people want. In addition, Dr. Traub was apparently allowed to work on *Herbertia* and all related matters which had nothing whatever to do with his official work in government time, and that is something that is denied the rest of us!

Again, since I am letting down my hair, and laying myself open for a general castigation, if Dr. Traub had ever show any real interest in working for the American Horticultural Society a matter in which he professed great interest, there need never have been any *Herbertia*. The present difficulties in publication and in financing, are the result of inexperience and inexperience comes very dearly.

Both articles that you mention would be more than welcome, whenever you have them in whether they are preliminary to be followed by later final reporting or not. Don't forget that we give reprints and I believe that we can give you as good reproduction for your plates as any one.

Don't get the idea that I'm sore; I'm not, just weary of people like Traub who say one thing and do another and he is by no means alone in this so weary world!

With repeated thanks, and every good wish for the New Year, &

Sincerely,

B.M.s

B.Y.Morrison, Editor.

1849-3rd St
Concord, Calif
Dec. 19, 1945

V.T. Stoutmeyer
c/o Amer Hort Society.
Wash D.C.

Dear Dr Stoutmeyer,

I happened to note in the last issue of the Journal that you had me down as Secy for the Amer Amaryllis Society still. Probably it is an oversight on my part to advise you, but I resigned this post completely some time back. E.F. Smith, 526 Central Ave, Palo Alto, Calif is acting as secy at present, but I am not certain if he intends to be permanent or not. It might be advisable to give Dr Traub a ring over at Beltsville and check with him since he dictates all decisions regarding society policy.

Noted
12/31/45
Shc

I note your comments regarding the Lily book, and possibly a Daffodil journal. I have often wondered why Lilium, Narcissus, Iris, Amaryllids and other bulbs could all be included under the same cover. Most bulb fans do not restrict their activities to a single group of plants exclusively, but generally include all bulbs--- And the more versatile a publication the greater the demand. This has been particularly true with Herbertia. The progressive addition of Daylilies, Narcissus, Allium, and the like, always produced an sudden upswing in sales and membership.

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Enclosed find some seed of Lapevrouisia cruenta. I promised some to B.Y.M. some time back, but failed to be as prompt about it as desired. The seed germinates well at 65-60 F in a light sand loam. I have just germinated a variety of L.c. alba from England this last fall, and when it flowers I'll send in a note on both plants. The Alba really sounds interesting.

Could you eventually use two articles on the Brunsvigias: one on the species and sub genera, and the second on the Hybrids with Amaryllis belladonna. The cytogenetics of the latter have been cracked and has cleared up much of the confusion that has existed from Herberts work in 1837 down to the present. Incidentally this same work has a direct correlation to the breeding behavior of Narcissus and Hybrid Amaryllis. As far as I know I have never seen anything ~~that~~ in print that ever attempted to explain the difficulties, but with the assistance of Dr Edgar Anderson we have a fairly accurate picture of the unique behavior of all the inter-specific Amaryllid Hybrids.

No need for an immediate reply as I still have a number of small details to run down, and it will be several years before all my different hybrid Brunsvigias will flower. However from preliminary results we will have some pleasant surprises.

Very truly yours,

L.S. Hannibal

L.S. Hannibal

If he means
reprints of his article - they (100)
were shipped the last of
March according to
Monumental + the
bill is paid

1849-3rd St
Concord, Calif
Apr 15, 1947

Dear B.Y.M.

Expect that you have been busy, but not having heard from you or the Brunsvigia data, I've been wondering if something was amiss.

Several items have come up. First I note that Dr Fernandes has added to the fall Narcissus, and in turn I have flowered Hannonia hesperidum and have come to definite conclusion that it too is a fall flowering Narcissus, although the complete absence of the corona would make it a distinct member like the Tapeinanthus.

Therefore unless the article on the fall narcissus is in the hands of the printer I think it well that it be returned for additions.

Secondly I'm on the quest of more reprints from the USDA, and if the USDA credit coupons which I sent you are not being used then I'd appreciate their return.

Narcissus season was short and snappy. We had W.O. Backhouse visit from the Argentine. Discussions centered about his mother's pink daffodils, and the work that he is doing with the red cups. He jokingly said that the purpose of his coming up here was to find a red trumpet, or a 7n red cup Daff. Obviously a red cup trumpet is non-existent due to the distinct linkage factors involved, but hexaploids exist and higher forms may be possible. I expect that he visited with Arno Bowers, Tom Craige, Frank Reinalt, Mitchell & myself, Mitch, Jan de Graaff, and one or two others in his elusive quest. We hope that he found at least one clone of interest, although I have not heard of such to date.

The general consensus of opinion along the West coast is turning to the view that too much stress has been laid on Parentages, when the genetics involved in the Daff hybrids are the determining factors of success or failure. We know a bit about color dominants and recessives, but we need some way to determine, or to recognize a plant that has latent breeding possibilities due to the the old specie linkages being broken down. Just why the Narcissus should not follow Mendel's law is an involved and moot question, but it is a typical characteristic through the whole family of Amaryllidaceae.

Perhaps some day I'll stick my neck out and tell why and how the Amaryllidaceae behave as they do for the breeder, and advise the amateur to tackle something less stubborn.

Anyway I've taken enough of your time with my gab. I would appreciate the fall narcissus item, USDA coupons, and eventually the Brunsvigia data if possible--- Provided that you are not too busy.

Sincerely,

L.S. Hannibal

1849-3rd St
Concord, Calif

Dear B.Y.,

Am writing to learn if anything was ever done with the reference material to run down on the Brunsvigias that I sent last year.

Had a bad fall recently and banged up my leg. If the photostats had been available it would have been very welcome, as time has hung heavily on my hands.

However I presume that you have not had the time to follow the matter up as I know that you are busy, so I would appreciate the return of the Bibliofilm Coupons. There were about \$6.00 worth as I recall--- Could look it up when my leg gets better. Have an urgent use for them.

Have made arrangements through one of the members of the RHS council to have the librarian there trace several of the articles. The rest I may be able to locate in the U.C. Botanical Libe.

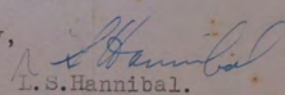
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Noted the *Leucojum aestivum* plate. Too bad the article was so brief. I have several forms here including the large Cravetys giants. Also some species. Autumnale is in flower now. *L. rosea* and one or two others will flower in early spring. The *Trychophyllum* (Spelling ?) is distinct from most *Amaryllids* in that the offsets form at the top of the bulb. This *Leucojum* is a swamp plant. It multiplies like rabbits, and is as thick as grass in its pot.

Has been a fine year for *Brunsdonna Multiflora*, the Australian *Amaryllis* x *Brunsvigia* hybrid. A number of the white forms flowered including some of my own white hybrids. Certainly a beautiful plant and surely puts the old *Amaryllis belladonna* into a back seat. Another year or two and I'll have a hundred or so flower each fall. Most will be alba throwbacks to the *Brunsvigia* ancestor, but an alba *Belladonna* is in the offering which should be more tollerant of cold weather. If so its a real achievement.

Well let me know about the reference data. Drop a card at least, as I wish to get active.

Sincerely,


L.S. Hannibal.

oct 7, 1897

—SERIES 1944—
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U. S. GOVERNMENT PRINTING OFFICE

9/11 need this
back

September 1946

My dear Mr. Hannibal:

How do your friends call you when they write or should I wait to be established? I like your writing me as BYM but my friend reduce it to BY or Ben. They're yours for the choosing!

Essentially this is just to acknowledge the receipt of yours of the 19th with the inclosed \$6.00's worth of coupons and also the later letter with the narcissus story which I haven't even looked at yet. I'll do my best for you on the Library work when I get back and hope I can manage it without spending the coupons! If I can I will, but our library now is so 'modernized' that we old-timers haven't the in-and-out privileges that we once enjoyed when the librarians knew the books and were not merely smart young females who think a library is a place run like a service station speeding the customer on his way as swiftly as possible in order to have the greatest number of customers per day, whether the customer gets what he wants or not!

I look forward to the trip, not as a trip, but as an escape. My friend whom I am to visit is a bachelor like myself and we have known each other so many years that we talk or don't talk without any fear that the other will wonder why. There is no telephone and no sound of street cars or even automobiles to amount to anything and the distant whistle of the evening train is almost a high spot in the day!

I expect to sleep and sleep and sleep and never think a thought.

Even if children do tie one down, they are pretty nice. We who have no ties into the future know that, you know even if we have no family. My own Christmas season is quite darkened this year, by a friend, now quite elderly and a spinster, who has come to the end of her money. Frankly I don't know what she will do for a time, until she can get into a Home. It is all so far from her own life, which has had its ups and downs but which she has not always met wisely. The problem is real and she has no kin who seem willing to do anything, even the little they might. So don't think that I don't know the advantages of what I don't have! I do! This is all very personal and far off from the Amarylids, but you do know that I am not just the ever-greedy name that wants more and more copy for the Magazine, that fate dropped into his ignorant hands twenty years ago, with the suggestion that something had to be done!

The Season's Best and through the New Years,

Sincerely,

Photoprints on Brunsvigias

Photoprints on text and plates covering the following Brunsvigias are desired. Reference data is given as complete as known.

Brunsvigia Slateriana, Benth.	Gen. Plant.iii, P.727 ()
B. undulata, Leighton	(1934)
B. Kirkii x Baker	
B. insizwae, A.Zahlbr	()
B. Rautananii, Baker	(1903)
B. Bosmaniae, Leighton	(1932)
B. appendiculata, Leighton	(1932)
B. natalensis Baker	(1896-7)
B. sphaerocarpa Baker	(1896-7)
B. cooperi, Baker.	Saunders Ref. Bot. v.t. T330 (1872)

Amaryllis orientalis, rubicaulis, striata, & radula. ~~axaxixixix~~
Jacquin in Hort. Schoen, Vol 1, Page 35-40, Tab 68-76. (?)

Would also appreciate information on the Amaryllis orientalis Linn references as given in Species Plantarum Vol 1, P.293 (1753)

One reference reads Buttn. cunon. 215.

The other Roy. lugdb. 37. I believe that this is A. Royeno in Prodr. Flor. Leidensis P.37. From information I have reason to wonder if the plant of Royeno's is Boophone (Buphane) ciliata, since Heister reports " id quod in ceteris fecit omnibus, unica illa adhuc excepta fub N.8, p.37, chi folia ciliata tribuit, et forte quoque eam florentem non vidit, ut addere potuiffet, aequalem an inaequalem habeat florem.

In other words what I wish to establish is if Linnaeus's Amaryllis orientalis is the same as Heisters Brunsvigia (1753), or not. So Buttn. cunon. 215 is of interest, too.

Coupons to the extent of \$6.00 are enclosed to cover these reprints

L. H. Hannibal
Concord
Calif

also possible

1849-3rd St
Concord, Calif

Dec. 6, 1946

Dear Mr. Morrison,

Your letter of Dec. 1st brings up several points that I had best answer while we have the matters in mind.

The assistance on the *Brunsvigia* data will be welcome as it has been something that I've been itching to tackle for a long time. The USDA library assistance was the stumbling block. I think I can make up a nice survey of the genus as I am probably more familiar with it than anyone else..... So I'll begin to list my reference data, and will send a list in shortly of data needed. It will not be particularly lengthy.

No need to envy the *Cal. Hort. Journal* as I contemplate whipping up another *Tazetta* article in a couple of years. I have more specie material now, and so will include some breeding results, etc. So save the *Grand Primo* cut and we'll use it again..... As for selling the bulbs. I keep a small stock of each on hand and the rest are used for horse trading and diplomatic uses. I'll earmark some for you.

Note on Fall Flowering *Narcissus* has been kicking around here for some time. Find same enclosed. (I don't know if the text is quite orthodox, so blue pencil it or shbot it back for revision if necessary.)

Incidentally if I'm to work up more data on *Brunsvigia* blue pencil the other half of the *Boophone*--*Brunsvigia* note. The *Brunsvigia* half I mean.

Since your hands are full no need to reply to this note. Its no easy job to edit a journal in your spare time--- And I think that you are doing a nice job.

Picked up a chuckle for you. The prolonged delays in publication of *Herbertia* (2 yrs behind time) has resulted in the *Daylily* group pulling up stakes and getting out a publication of their own. As a result one party by the name of *Traub* is a bit badly irritated.

Sincerely,

L.S. Hannibal
L.S. Hannibal

*Think I best hold up on the fall
Narcissus - the article looks crummy.*

1849-3rd st
Concord, Calif

Nov.19,1946

Dear B.Y.M.

No need of holding up the second half of the BOOPHON-
Brunsvigia article if its in the printers hand. I had
thought that if I could take up your offer of tracking down
the references on Brunsvigias that the second half could
be expanded out considerably. However it can tend to break
the ice for the future article, which will take some time
for me to evaluate. Likewise I hope to get more photos
of the types, if they ever flower for me.

Anyway the desired references are enclosed with \$6.00
of cupons, which may or may not be enough.

Wish I could see some of the plants in the native state.
It isnt easy to determine the interrelationships and subspecies
from the megar descriptions given with several writers.

I sent in the item several days ago on the Fall Flowering
Narcissus. If you feel it needs a bit of editing don't hesitate
to blue pencil it. I usually like to let an article set
until it gets cold, then rehash it if I don't tear it up
completely.

In returning to this Brunsvigia data, it might be well
to inquire in an indirect or roundabout manner if Uphorn has
been browsing along the same lines. I don't believe so, but
such things could happen.

Well if the Hemerocallis gang have gone so far as starting
two organizations somebody must think that the worlds down on
him for sure. In a way I regret ever having been involved
with the Amaryllis society, but I have established a number
of interesting contacts, and these have meant much to me.
In fact it is my eventual intention to write an article
on every genera of the Amaryllis that Ive dealt with, drawing
many of my comments from these letters and my own experience.
The most immediate after Brunsvigia are Australian hybrid Clivia,
the Mediterranean leucojum, Hanonia hesperidum, Tazettas,
Haemanthus, Hybrid Brunsdonnas & Multifloras, and possibly
the Hippeastrum, also Agapanthus..... Looks a bit diversified
I think ?

I hope that you have a pleasant trip. I sometimes wish that
I could get my nose away from the grindstone at times, but
it isnt too easy when your hands are full and the children are
small.

Sincerely yours

L.S. Hannibal
L.S.Hannibal

Dear Ben

3-10-47

Was down with mild case
of flu and run off this squib
on the *Haemanthus*.

Neither the article or photo
are too good so if you feel it
needs working over shoot it back.

Sincerely

Les Hammel

1849-3rd St
Concord, Calif

1849-3rd St
Concord, Calif
Mar. 2, 1947

Dear Ben,

Not having heard from you in some time I hope that you got off to the long contemplated vacation, away from the pests like myself.

Several things have developed. First I received a plant list with fall flowering Narcissus listed from Jean Gattefosse. I anticipate shooting him an order in conjunction with Jan de Graaff. Have just reread his article in the Jan 42 issue of Nat Hort.

Second, The Viridiflorus and elegans seed ripened Jan 15th. I planted it at once and the former sprouted in 10 days. This was a complete surprise. I now wonder if these hard to germinate hybrid daffs would do better if sprouted at once. It would save a year but would involve an air conditioning system or refrigerator to approach the proper temperatures. Daylight may have to be adjusted a bit too.

If you contemplate publishing the fall Narcissus article the above may make an interesting foot note. In turn if requests come in for bulbs there is no present source of ~~bulbs~~ unless we we import same from Morocco.

Finally have you had much luck with the sweet young things at the USDA Lib. on the Brunsvick data. I've run down a new species variant and hardly know what to do with it.

Daffs are just flowering. Pollen will go on within a day or two depending on what appears first. Am too busy this year to do much more than mix the better pollens together and shoot the works. Some red cup seedlings flowered---Awful.....

Sincerely

Les H
Les Hannibal.



Florida School for the Deaf and the Blind
ST. AUGUSTINE, FLORIDA

Photos

Dr. H. Harold Himm
Provost for Agriculture
University of Fla
Gainesville, Fla



Digitized by Hunt Institute for Botanical Documentation

*Haemanthus
multiflorus*

Flowers not too good



Narcissus elegans & *N. viridiflorus*

Digitized by Hunt Institute for Botanical Documentation

Dear B.Y.M.

May be a bit messy, but I havn't
the time to put in on it for some weeks,
so look it over and pass judgement

L.S.Hannibal

HAEMANTHUS for Greenhouse and Garden

L.S.Hannibal

The wide expanses, rough terrain, and diversified rainfall that one finds throught the great veldt of South Africa and South-Central Africa has created many isolated plant zones where a host of endemic flora types have evolved due to long geographical separation from similar areas. One of the most typical examples of this influence of geographical isolation occurs with the genus Haemanthus, an Amaryllid most often called the "Blood Lily". More than sixty odd species have been described and it is rather obvious that there are a host of variants that need reevaluation and classification as more species are found.

In general the genus can be readily divided into two sections, a) those species with 6-10 long petioled leaves that spring from a pseudo-stem, such as Haemanthus multiflorus, and b) those species with a few wide fleshy tongue shaped leaves without petioles that tend to lay prone upon the ground, such as H. coccineus. The two groups cannot be segregated on the basis of flower morphology as both have numerous characteristics in common. Thus segregation, which may be genetic, is based entirely on leaf form, bulb shape, and growing habits.

The first group with the petioled leaves are apparently all summer growing plants that require considerable warmth, moisture and shade. Practically all come from the rain forests that border the East coast of Africa. Haemanthus multiflorus (see plate) is undoubtedly the best known representative of this group. Under some conditions it may go entirely winter dormant, then again the new leaf stalk and flower scape may split the old stem. The exceptionally large umbels of brilliant orange-scarlet blossoms/ ^{that} appear during May or

particularly or June are/exceptionally attractive and represent the finest bloom to any of the genus. Cultural requirements call for an acid sandy-loam soil with ample peat. In general practice this plant is best adapted to orchid houses, or outdoor culture in Southern Florida, as it cannot stand any frost.

Haemanthus Katherine, the Tongaat Lily from Natal, is much like Multiflora, but it requires a complete rest when dormant during the winter. It flowers with the new leaf growth during June, and is sufficiently hardy to be grown under Oak trees at Santa Barbara, Calif. Some variability exists in this species, but the plant can usually be recognized by the length of its leaves which may extend some 3 feet from petiole to tip.

Haemanthus Natalensis is much like H. Katherine. In some respects it is hardier, but not as free flowering. It rarely produces offsets and the bulbs do not go into decline as easily as H. multiflora. The foliage is exceptionally attractive.

One occasionally sees a dwarf form of the petioled Haemanthus in circulation in this country. It has traveled under the name of H. McKenii, Punicus, and Undulatus. However the absence of the pseudo leaf stalk has been overlooked in its identity and it probably is an undescribed species closely allied to H. cinnabarinus. The short scape with its orange-yellow blossoms is not particularly attractive. The writer has seen hybrids between it and H. multiflorus but the initial crosses do not hold much promise. Until the identity of the plant can be established the writer suggests the provisional name Haemanthus Orpetii be used since Mr Orpet has encouraged the collectors to try it as a novelty for a number of years.

In contrast to the preceding species the broad, recumbent-leaved Haemanthus are winter growing plants. One of the largest and most hardy is the better known H. coccineus. The large, broad green leaves are quite distinct. Perhaps the blossoms are not as spectacular as the Multi-florus as the ~~mixxxxxxxx~~ bloom can best be described as not unlike a red dish mop, but it is a novelty. The plant can be grown out of doors in part shade, in frost free areas, and if heavily fertilized as once occurred here, can assume gigantic proportions. If climatic conditions call for indoor growth the bulb can remain in an 8" pot for years.

Occasionally one hears of a Haemanthus albaflorus in the trade. Actually three forms have been observed. One, a large, late flowering type not unlike Coccineus in form, although more evergreen, was brought to this country about 1910 by an old German professor. A few samples are scattered about Southern California. It is probably the true Albaflorus. Then there is a small form with an elliptical leaf some 4 or 5 inches long with fine hair along the margins. This is variety Brachyphyllus, and finally there is a dwarf form with a ^{small tongue-like} ~~near-spherical~~ leaf covered with a fine white down. This is the H. albaflorus var Burchellii. ^{The latter} It is particularly free flowering but requires complete shade else the leaves wilt very quickly.

This plant has been crossed with Coccinea on several occasions by the writer. The hybrid plants are near evergreen and will probably be as large as Coccineus when mature. ^{In contrast} / ~~Seedling~~ plants of the H. a. var Burchellii are exceptionally slow to grow and take years to reach flowering size, and those of coccineus break no speed record. The hybrid vigor is somewhat amazing.

There may be one or two other Haemanthus species in circulation such as H. carneus which has a circular leaf some 5" across, However the plants are so few that the writer has never found a source. It appears that if more of the species are to be obtained it must be through contacts in South Africa. This should be encouraged as a number of the plants have good hybridizing possibilities.

Like Clivia, the seed of the Haemanthus develops as a red berry that may take three or four months to ripen, and may not sprout until the following spring. We are inclined to believe that white flowered forms are dominant over the colored, as the hybrid plants show no pigmentation, but until more is known about these plants we can only await results and assume that the breeding characteristics are much like ^{the} Clivia which is an allied genus.

THE FALL FLOWERING NARCISSUS

L. S. Hannibal

The fall flowering Narcissus have been known many years, but their star of popularity has been of infinitesimal magnitude as only a few collectors have seen the plants--- Yet the cultural problems ^{are} is still if grown in large pots or well drained frost-free beds containing a sand-clay-loam mix .

The writer became interested in the group some years back when it was suggested that they could possibly hybridize with Daffodils to produce a fall flowering type, but so far little has been accomplished beyond procuring these hard to locate bulbs. The proposed fall Daffodils are more remote than ever as genetic studies have indicated that the problem is far more complex than the layman would anticipate. Never-the-less a lack of results should not deter a discussion concerning the habits of these obscure plants.

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In 1858 Gay established the section Autumnales to the genus Narcissus Linnaeus in order to accommodate the fall flowering species that he knew: Narcissus elegans Spach, N. serotinus Linnaeus, and N. viridiflorus Schousboe. This arrangement is entirely satisfactory from a geographical or cultural standpoint, but there have been some minor variations in morphology that have caused the experts to disagree in a number of ways as to the validity of such an arrangement. The decision was finally settled in 1943 through chromosome studies by Dr. Fernandes in Portugal. These will be touched upon later, but for the present we find Gay's outline convenient.

Narcissus elegans Spach (1846) grows along the shores of the Mediterranean from Morocco to Tunis, and in some scattered areas about Sicily and Southern Italy. Rarely is it found more than

half score miles inland, and in most cases the bulbs are located on limestone or clay hillsides where the soil is thin and well drained.

Growth begins in October with the first light rains. One or two leaves appear a few days after the moisture reaches the bulb, which is four or five inches down. The scape shows shortly after and often within a fortnight the bulbs will be in flower. N. elegans is considered a Tazetta, and to see the small cluster of blossoms one can readily recognize the relationship. The flowers appear as such with long slender milk-white segments, and a very small cup varying from yellow-green to citron depending upon the age. Even the odor of the blossoms is characteristic of the "Paper White" Narcissus. Usually the blossoms last several weeks and during this time the petals slowly reflex to take on a twisted appearance, making the flower appear as a child's small paper pinwheel. Then too the scape, which may be only three or four inches high when the bud opens, continues ~~to grow~~ until long after the flowers ~~fade~~, and eventually ^{at that} reaches a length of 18 inches or so.

This habit of ^{scape} elongation is not limited to Elegans, as it also occurs with the other two species, which are actually leafless. However it represents an interesting economy of foliage with a consolidation of functions, with the scape either assisting the leaves, or replacing their function entirely, depending upon the species.

Dr. Fernandes (1) has pointed out that N. elegans has two subspecies: Variety intermedius Gay having a larger diameter scape and being most closely related to N. tazetta, whereas var. fallax F.Q. is of more recent origin. The chromosome number (20) is identical, but the pattern varies slightly.

Narcissus serotinus Linnaeus (1753) is a dwarf autumn species somewhat reminiscent of N. elegans. Its native range covers most of the shores of the Mediterranean from Gibraltar to Egypt and Lebanon. Apparently it grows under a variety of soil conditions and rainfall. Tom Craig (2) recently commented upon its erratic ^{growth} habitats and random flowering habits in French Morocco, where the minute blossoms had the practice of appearing most everywhere, even in the middle of the Army drill field.

A single flower generally appears upon a leaf like scape. Leaves themselves rarely appear as the scape functions as such. The wee flower is well shaped with nicely rounded petals about a proportionally large cup, but the parts are all so small that if the flower were placed face down on a 1¢ piece the perianth segments would not cover "In God We Trust."

Narcissus viridiflorus Schousboe (1800) is also leafless, unless one considers the scape a leaf. The interesting features however are the extreme economical reductions of all parts, including the flower, to the ultimate minimum, and the introduction of the green pigment, chlorophyll, into the remnant petals such that they too function as leaves. Thus the small slender green-rayed flower with its very small six segmented corona has little that is ornamental to offer, but it is delightfully fragrant and will perfume a whole garden. It too has an odor like the Tazettas.

The natural range of this plant is very restricted, being found only about Gibraltar and Tangiers, and usually in clay soils. The segmentation of the corona into six small lobes has long puzzled the Linnaean botanists. Several not knowing the Jonquillae, N. rupicola, was similarly lobed considered this a unique primitive factor and went to some trouble to orientate N. viridiflorus's relationship to the other Autumnales. Fernandes has settled

this question too. The chromosome patterns of N. viridiflorus and N. jonquilla L. are identical, but Viridiflorus has double the number of chromosomes (28) as ^{are} contained by N. jonquilla L. (14). This establishes ^a close relationship and indicates that Viridiflorus with its higher count is not essentially primitive.

It also appears that the cleft corona is not so rare either. A N. schizocoronatus strain of Bicolor Daffodils (3) have been isolated and bred with this cleft corona. The characteristic does not appear as recessive, or particularly a primitive condition.

To some, chromosome studies may be incomprehensible, but to one familiar with their use they can be a very useful tool. The established relationship of N. viridiflorus to the Jonquillae group gives a clue as to the most practical line of inter-specie breeding to be taken. Namely that if viable seedlings are desired with Viridiflorus this would be the most promising line of material to work with.

In turn N. elegans with its 20 chromosomes, that resemble the Tazetta patterns (with 20, 21, or 22 chromosomes), should cross with the "Paper White" or one of the other few viable forms in the trade. It would be a waste of effort to attempt a cross of Elegans on a Trumpet Daffodil, or Incomparabilis, as the Tazettas rarely take with these forms. It may, however, produce sterile hybrids with the Triandrus species, or Poeticus.

Narcissus serotinus has a chromosome count of 30 and its analysis is quite distinct from any other known Narcissus form. Probably it represents the orphan of Gay's Autumnales. Sterile hybrids, both natural and manmade have been reported (4) between it and Viridiflorus, so it is possible that it may breed with others of the Jonquillae group, and it may work with other polyploid hybrids.

Thus, if the Fall flowering Narcissus have any potentialities for breeding purposes we seem limited to the Jonquilla X Viridiflorus and Tazetta X Elegans combinations. Neither crosses present any major difficulties, excluding the initial problem of either retarding the flowering dates of the Fall Narcissus or advancing the dates of the Vernal types. Pollen of either can be stored and used within six or eight weeks, so exact flowering dates need not be necessary. But the project would require some close work in temperature controls and we wonder if the expense would be worth the possible results.

The culture of the fall flowering narcissus (the species) is not difficult if conditions simulating their Mediterranean ~~ixxxxxxxxx~~ homeland are maintained, but we hazard to guess what the seedlings would require. Possibly like the autumnales a gritty-clay soil with good drainage, (in deep pots or a raised bed) would meet conditions. Undoubtedly none of the bulbs could tolerate more than a light frost as none of the autumnales are frost resistant. Fertilizers would be discouraged as they likely would cause the bulbs to blast, and finally where would the hybrids find use other than in the Pacific ^{coast?} south-west? Presumably the answer can be had if we can ~~xxxxxxx~~ get nature to disregard the seasons just once.

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- 2) Tom Craig: My introduction to N.serotinus. Calif. Hort. Journal. Vol.7#2. P.387 (Apr1946)
- 3) F.Meyer: Dutch Schizocoronati Daffodils. New Flora and Silva. Vol.8 #4. Pp.273-75 (July 1936)
- 4) E.A.Bowles: Handbook of Narcissus. Pp.189-208 (1934)

Reclassification of Narcissus sections Jonquillae,
Autumnales, and Hermione, (Syn. Tazetta)

Due to the fact that Dr. Abilio Fernandes work on the species of Narcissus has been mentioned in the preceding article, we present here his recent reclassification as published in the Boletim da Sociedade Broteriana, Vol.17, 2a series, P.33 (1943)

Jonquillae DC. ap. Red.

N. scaberulus Henriq.

N. calcicola Mend.

N. rupicola Durf.

N. Watieri Marie

N. juncifolius Lag.

N. gaditanus Boiss. et Reut.

N. jonquilloides Willk.

N. viridiflorus Schousboe

Serotini Parl

N.

N. serotinus Linn.

Hermione (Salsb.) Sprenger

a) Autumnal Baker

N. elegans Spach.

b) Vernal Baker

N. Tazetta L.

4008 Villa Ct
Fair Oaks
Calif
5 July 81

Dear B.Y.M.

It was a surprise indeed to hear from you, and several bulbs are on their way. I'm a bit lazy nowadays and not all of the clumps are tagged, so there could be a slipup on the Lutes. But I included two separate clones just for comparison along with Grand Monarque (which is the same as Burbidge & Bakers plate of Compressa).

I've rather dropped out of the Daffodil field. The Sacramento valley heat, bulb fly, glacial slime soil and several other factors just about cleaned me out. Only a few hardy items have survived.

In my experience the best soil for Daffodils was San Francisco bay mud..... Just plain black stiff Adobe which would break a pick axe in summer and pull your boots off in the winter. Generally you can only cultivate it 15 minutes out of the year, but it really could raise the bulbs. The foliage to most clones was 3 feet high. Up here if I get 18-20 inches I'm doing good.

So I appreciate your offer of bulbs, but think I had best back off. As indicated in the MS I'm fooling around with triandrus (all raised in flats) and have a number of hybrids. Last March I had a pleasant surprise as a bulb similar to Silver Chimes turned up with a flatter lemon yellow cup. It was rather obvious that Compressa was involved from the stiff scape and flat perianth. The flower may not be perfect from the show point, but the stiff scape and arrangement of the tepals would make this a good cut-flower blossom. It certainly is a cross worth repeating in mass using my Grand Monarque and all of the Triandrus. If you know of any ambitious breeder let me know.

I've rather gone in for Nerine hybrids and Cape Amaryllis belladonna hybrids (Traub insists on Brunsvigia rosea!) and have had good breaks in colors in each. Recently Dr van der Walt in Pretoria and I started fooling around with colchicine on Amaryllids. We have had a lot of failures, but have finally got the hang of doubling chromosomes in seedling plants---And with more experience can probably treat mature bulbs. It would be quite a day when you could produce seedlings from Silver Chimes or the like...What say.? However I think it can be done although its quite a jump from Crinum to Daffs. The big difficulty with the treated tissue is that every slug and sow bug in the country will go a mile to sample the tetraploid tissue. Its the durndest thing I've seen yet.

However tetraploid A. belladonna and N. coruscans want to grow in the summer, and several summer growing Nerines insist on going summer dormant, and all of the treated plants want to blast like some seedling Daffodils. Then to top it all Zephyranthes seemingly refuse to respond. So a grand time is being had.

Speaking of Daff articles. How would a brief one on the annoying habits of Narcissus fly in the Amaryllids go over. ? Several of us have made a survey on the pest, and have come up with the observation that they do not bother clean bulbs or freshly planted ones, but place one under adverse conditions or let a clump go for years where crowding and decay come along and Mr Bulb Fly can raise more Old Ned in the garden than a half dozen grand children. My personal opinion is that the bulb fly follows his nose and attacks where there is decaying tissue.

You should be in a good Daylily and Crinum country there in Miss., or have you been exposed to those critters. I once swore that I wanted no part in Daylilies, but was given some recent hybrids. My daughters proceeded to raise a mess of seed and several turned up better than the parental stock. Since then I've raised some unusual shades that can take the dry heat better than the better midwest stock, but I also get a batch that burn like the mischief.

As for Crinum, I picked up a red flowered Cape species from the Orange River and have been having a field day crossing this one with Luther Burbanks fertile hybrid. Its the first large flowered red hybrid with a spreading umbel. A good portion are show plants, but there are some not worth speaking about. They are enough to give Mendal heart failure in some instances.

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Sincerely

L. H. H. H.

4008 Villact
Fair Oaks
18 Sept '61

Dear B.Y.M.

My sincerest regrets for not writing---I've been so dad-blamed busy getting two girls off to college (Univ of Calif at Berkeley), the other one moved with the grand children, giving living quarters to my brother in law and family who were about burned out in the spree of forest fires here 4 weeks ago, buying a bit of ground on a lake far from these noisy freeways and about ten other things that most of my correspondence has bogged down, badly.

First, by color slides we have found a new Crinum with yellow Sternbergia like blossoms growing in the desert country of South Australia. It should be ideally suited to the drier parts of Calif. The bulb, which is about 3 inches in size goes down 30 inches and ~~the bulb~~ reportedly has a 12 foot diameter root system. By good fortune I obtained both seed and bulbs. The chaps down there thought it an off colored C, flaccidum. I think from the photos that it belongs to an entirely different subgenus. So as soon as it flowers I'd like to shoot in a description giving proper recognition to my friends down under, but not having Dr T's name dangling on the tail end.

Anyway I'm plenty steamed up. It should ^{even to} give hardy hybrids, and the color is quite unusual and showy. I'm even treating one seed with colchicine to obtain a tetraploid..... and that brings up project No. two. I've licked the preatment problem on Amaryllids and have fair luck producing polyploids with various mutagens. I have a number of Polyploid Crinums, Nerines, Amaryllis belladonna and other bulbs on the way. The Crinum are the most promising. The bulbs are very vigorous.

Third, I've crossed a hybrid Crinum with red flowers onto Am. belladonna, so should have a new type Crinodonna (Amarcrinum), and I have enough seed to permit treating some to make polyploids. So more fun.

And finally my hybrid A. belladonna season is over and I've broken-through to flower a couple of scarlet hybrids---A far cry from the old Pink Naked Lady. So I've been crossing like mad---In fact a friend told me that I was something like an auger in a hardwood plank. We were both going around in circles alike. Whether we get anywhere remains to be seen.

Charley Jenson was up the other day to see my Am belladonna hybrids. He seems considerably better now that the summer heat is over. I loaded him up with hardy pink Crinum and Am belladonna hybrids, So I expect that he has them planted now.

Your Daff bulb arrived in good shape. I let it dry out in the garage for a few days, then planted it. So now its a matter of time.

Learned recently that the Rothchild Estate (Exbury gardens) is selling Hybrid Nerines. So I traded bulbs and have some interesting names on flashy tags out in the greenhouse----Durned interesting names,-----They range from Persian dieties to world war generals and water fowles such as "Solient Swan". Actually that name really flipped me, so I promptly dug a bulb and hung the name "Peters Peppermint" on it and sent it back. I'll be durned if the blokes didn't want to know the significance of the unusual name.....

Finally, to keep out of mischief I've started tracking down all of the Hybrid Crinum in the USA----What a mess. Have fifty listed to date and still more to go. The worst mess is the Milk and Wine group. I wish that I could obtain color slides of the original descriptions of about 10 species.... I say species with my tongue in my cheek as half wont set seed---They are sterile hybrids. And again I wonder who would like to publish the data. I'm about washed up with Dr T, butchering a carefully prepared MS.

So thats about the story BYM. There hasn't been many dull moments here and my overseas Air mail bill has about topped the food bill, so its about time to get back to earth.

I hope that your pardner is feeling better too.

Any comments as to an outlet for several articles would be appreciated.

Sincerely yours,

Les Hamill

Chino downer Trunks
down Alma
Moldenke
+ seed 7

Colostemma sp

Buen Baa
7 SW

Route 1 Box 24,
Pass Christian, Miss., 39571
20 November 1963

Dear Hannibal:

This started off as a decent day, but I had barely begun outside work when the drizzle began, not enough to help the earth, but quite enough to make a mess if one insisted on working. So, I took myself in hand; came inside, sorted out all the mail that has been piled about, addressed envelopes, and stuck the letters in each, then sorted them in degrees of urgency. I find I have to do this every so often, as when I am in a period of pressured work outside, due again to my procrastinations, I forget what is inside.....

I have four letters of yours before me, the last one, yours of Nov. 16th that came in this morning. Now let us go back and recover my past sins, if possible.

Yours of June 28, 1962 is in the heap. The important thing in this one as far as *Narcissus Tazetta* goes is your discussion of Jordan & Ferreau in *Icones Florae Europaeae* (1867) with its 18 plates. Possibly you have finished your action on this and I'll find it in the later letters. If not, and you think well of the idea after all my delaying, let me know what steps to take to get the 18 plates reproduced and suggest the way to do it. (I'll still have to wrestle with the Ed. Comm., but am not concerned about that.)

As far as I know we got into print before the R.H.S. on your *Gynandrium* and all is well, from our point of view. In this letter you say you inclosed a couple of cards; either you forgot or I lost them.

At the moment, I feel certain that your compressa and that that was bought from Baffodil Mart, are happy here and I will have enough thank you sir.

In this letter you use the word *Rhodophiala*. Just as part of the gossip, let me tell you, that it is my understanding that Dr. Moore of Bailey Hortorium who is the man on *Amaryllidaceae* there is not accepting this or some of the other splits off *Amaryllis* as by Traub all this fide Lawrence, before he left.

Yours of Aug. 27 1963. This I believe I acknowledged, for as the result of it, I told Meyer to write you about the *Amaryllis-Brunsvigia* mess.

Yours of Oct. 10, 1963 This is the letter with the MSS, and that same MSS is coming back to you in this letter! If you want to send it to A.H.M., address the letter to Creech, the Chairman and he will see that Meyer gets it, or I suppose it would be Meyer.

Yours of Nov. 16, 1963 This came this morning and found me in my penitential chores. I gather that Meyer told you he was following Traub? I know he said he used *Brunsvigia*, but now that he has my copy of Traub's "The Genera of *Amaryllidaceae*" and has heard of the attitude of the R.H.S. and the Bailey Hortorium, he may be in a different state of mind? He is much like Traub in being very positive, and he rarely is able to admit and change, but he had to recently and I saw the cc's involved, all behind his back, as I still have many friends among the members.

I hope all goes well with the trip to New Zealand. All best.

4008 Villa Ct
Fair Oaks, Calif

Oct 10, 1963

Dear B.Y.M,

As you know I'm slowly trying to untangle a description of Garden Crinum in the USA for the American Hort Journal. Every so often I hit a dilly of a snag. I was tempted to fire the enclosed down to Traub, but thought you might pass it on to the editor with a sly dig asking the Plant Life members if after 30 years why they hadn't done something about it

Don't know if I mentioned a breakthrough on crinum breeding or not, but I've found that most hybrids will backcross onto their parents when all other crosses fail.....And if you don't know the parent, strike the hybrid pollens on every species in the garden. Nine chances out of ten you will uncover the parents. I did so on six hybrids this summer including two of Burbanks. Furthermore the backcross hybrids are full of hybrid vigor and are good breeders. True they look about 87½ % like the parent, but crossing backcrosses should give a higher level of viability than F-1 semi-sterile hybrids.

What gets my goat is that I can find nothing on crossing backcrosses in the literature, but its advantages must be known. If not then I have about 1200 hybrid seed to convince the unconvinced. My usual summer crop has been 50 or 75. So I'm really on a Crinum binge.

Sincerely

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Les H.
Les Hannibal

Fair Oaks
Calif
16 Nov 63

Dear B.Y.M.

Dont worry about the MS on Florida Crinum. I finally unscrambled some more information and found out what they call *C. amabile* is actually the other one. Found the dope in a Kew 'Bulb Book' by John Withers, 1911, -----So you would have thought Dr T. would have discovered that by now.

Actually he is under considerable fire. He described a new genus as *Rauhia* when it is *Phaedranassa megistophylla* Kranzel. Then *Amaryllis x mostertii* of Grahams town as something new when it's the old *Hippeastrum africanus* of the Congo, Mocambique and ten thousand other gardens. Then I've picked his *C. virginicum* apart as a hybrid, and not the species at all. Even know of another butch or two. If he wasn't so durned anxious to publish data with his John Henry after it it wouldn't be so messed up.

Yes, I had a note from Meyer. So answered it stating that the English and RHS would have no part of Traubs nomenclature, and that I doubted that Traubs nomenclature would have much of a sponsor after he passed on. As I see it the English by shere numbers in the RHS rather influence ~~the~~ nomenclature field, and the Dutch rather back them up. Doc traub told me at one time that he (Plant Life) was the official organ for naming *Amaryllids*, but its not so reported in the last bulletin on the naming of cultivated plants....So I'll pass up anything on *Crinodonnas* for the moment. I have some 45-50 *Crinum* listed and described now. Thats enough for one issue.

Has been quite a summer and fall. Ig Grace, my wife, can ever get her birth certificate straightened out (She was born in Tenn.) we are taking off to New Zealand after Jan 1. So there has been a jillion things to do---And then a grinding halt as no passport. Think I'll ship her back to Jacksonville to get the mess unsnarled and be born proper.....

Anyhow, It will be interesting to see what a summer is like down under, and to see an area where they really appreciate gardens and flowers. Theres too many Oakies out in Calif to appreciate good gardens. And I won't miss the winter fog a durned bit.....

Saw Charley Jensen the other day. He lost some name tags a couple of years back and is having a dickens of a time trying to identify some pot busting shrubs. Some of the stock is probably from your nursery.

Sincerely

Les Humbol

Dear B.Y.M.

4008 Villa Ct
Fair Oaks, Calif
28 June '62

Your letter at hand.... I've been so blessed busy that I must answer it now or it will be smothered with a deluge.

First I started digging Tazetta data and found that Jordan & Ferreau in Icones Florae Europaeae 1867 had some 18 plates including Grand Primo and Grand Monarque so I sent an order off to the Dept Agri library for photostats. It was returned with notation not in library. So I sent same to the RHS and they came back that the book was too rare to take out of the Library and that the photostats would cost \$3.00 per page. So I contacted Univ of Calif at Berkeley and the State Library. Finally found the call number in the Library of Congress, So will order a photocopy.

Anyway if this book is so blessed rare why not have all of the key plates republished. This should clear up the Tazetta confusion..... Just a hint.

Second, I've run down a number of photostats of the the Crinum "Milk and Wine". All that I can say is that there is a complete transposition of names. My index of hardy crinum species and hybrids is fairly well along, but I have very little time to work upon it at present (I got mixed up in a Fair Oaks Incorporation--Unincorporation row; I'm for the latter). However I think the list will run 20 pages or so, but that three photocopies should be included of the original C.kirkii, Scabrum and Zeylanicum.

Now, I have an annoying confession to make. For some reason I had the impression that the Flaccidum article was due to appear about July. So about three weeks ago I fired a short squib on 'same' discussing the the subgenus mixup to the RHS, & suggesting that it would be of interest to our friends down under in November when the Crinum flowered in the Australian hinterland. Syngue upped the date to August. So it may be better to hold my article until later---However, the data which I submitted to you is in much more detail than the squib and the plates are far more complete. There is no duplication of text, or plates. Should have hung onto the squib longer.

Now, for a general ramble in the garden..... I'm having the time of my life soilwise. I've been the wheelhorse at the Highway Laboratory in obtaining an X-ray spectograph to study clays---Particularly the California forms which swell, or slide our roads down into the canyons. Cement tests, paint tests and alloy steel were also considered as secondary. Then I obtained one of the soil professors from Davis (Who obtained his thesis on the X raying of soils and has been at Beltsville for several years) to teach us how to do clay analysis. Dr. Whittig is undoubtedly one of the most interesting chaps that I've ever run into. He knows his agriculture, and clays, and the soils men in the lab are just about eating up every word he utters--- I haven't had time to be on the entire group of sessions, but what I've attended has been an eye opener. Just now I'm considering running up back of Mt Lassen and obtaining some black volcanic soil which is about as rich in mineral as found. Then, secondly to obtain some good black adobe and mix it with old sawdust. These soils contain the highest available mineral.

Crinum are in flower and I'm crossing like mad. Am also making several bulb shipments of Crinum and Amaryllid belladonna to South Africa----Coal to Newcastle..... And in turn received about 20 new bulbs from down under...A couple were monsters for size.

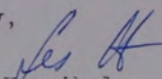
Yes, watering can be a task. The dry heat here dries the garden out so fast that you can hear the steam whistle on the way out. We keep three or four sprinklers going steadily now, and do not expect rain until Nov..... I envy you. Summer rain... It would be a blessing here once in a while if it didn't get too muggy.

I should write Mrs Anthes and Watrous, but will have to delay for the moment. Charley Jensen was up this way the other day. He has had a wonderful display of Rhodendron, but his losses have been heavy from the heat and difficulty in not overwatering in order to hold moisture. Dr Coe was up from Ross and I gave him a load of Crinum. He has given me a contact with a Md in Santiago de Chile who collects Amaryllids. So am sending some bulbs south shortly. Received some pale pink and yellow Habranthus ananuca (Rhodophelia).

'Swarms' is a correct botanical term now. It represents a field collection of a species of variable pattern which tends to build up localized geographical or ecological strain. This has occurred with the Daffodil and Tazetta due to their long establishment in the Mediterranean area without much means for the seed or pollen to scatter or migrate. Water distribution of bulbs or seed is about the only means of scattering, and that's always down hill.

Am enclosing a couple of cards for comment. Have thought of working some up for Daffodils, but will pass the suggestion on to some of the women. I haven't the time. Do you need more Compressa.???

Sincerely,


Les Hennibal

Fair Oaks, Calif
Aug 27

Dear BYM,

Remember me? I'm the chap who gets all wound up on a problem, writes a mess of letters, then crawls in a hole and pulls it in after himself.... Well, its been a busy summer, and I have literally been in a hole---Testing fans in motorvehicle tunnels about the bay area and up in the north end of the state..... I've been so busy that all letters are untean months behind.

Lets see, we were discussing Tazetta Grand Monarque..... Well you reported that mine flowered and escaped the freeze. Also that Mrs Anthes bulb was quite like mine....But that neither compared to the eastern clones. Well I flowered two bulbs received from Australia. These check out with Mrs Anthes and myself, not with the eastern.

Now, there happens to be quite a story about Mrs Zenors Grand Primo...There is a fading and non fading Grand Primo on the market. I presume that one is a bud sport of the other or something, but Dear Herbert lists the Fading Form as *H. citrina* ^{sp. n.} (~~Grand Primo~~) back in 1835. The fading and non fading flower here within ten days of each other, and as I recall, precede my Grand ~~Primo~~ Monarque.

As for Compressa being the taxonomically preferred name, you are probably right---It doesnt hold water. Technically it should be *Florabunda*, Salisbury & Bowles, but until the we can obtain more detail its a bit rough deciding what is what.... Probably *N. taz. florabunda* cv. 'Grand Monarque'.

Frankly I still think Grand Primo is a natural or Roman hybrid as it doesnt produce seed worth a whit, meaning none, Whereas my Grand Monarque produces seed to some extent here and considerably in San Diego. Grand Primo produces scads of offsets, Grand Monarque very few, about 1 every five years or so here in rather poor soil. So if the Dutch had any quantity of either it would be easy to grow Grand Primo by offset, but Grand Monarque would have to be imported from the wild to satisfy the market..... So thats why I consider Grand Monarque a 'Swarm', and 'Compressa' a variant of the Swarm.

I have been making headway on Crinum hybrids this summer and what applies in the breeding of Crinum goes back to Narcissus. It is no problem to obtain F-1 hybrids, but in 99% of the cases they appear sterile and will not produce F-2 seed or seedlings. Well theres a trick: If one backcrosses using P₁ & P₂ as the seed producers most hybrids are fertile....Then the 75%-25% back cross hybrids are fairly fertile, and at times produce seed. In many instances they show all kinds of hybrid vigor... Well this summer I produced seed with 4 or 5 Crinum hybrid which were considered sterile, just by taking the pollen and working on the parents....In several instances I had to guess at the parents as they were not known, and in two instances parental species were uncovered which were quite unexpected.

Anyhow, knowing this we can probably use pollen from Grand Primo on several Tazettas, and just by chance find the parents. I wish now that I had a Bazelman Tazetta from

Turkey or thereabouts. It may be a parent to Grand Primo....
My sudden thinking with such a probability is that the
Bazelman Tazetta has some cup features which are repeated in
Grand Primo. -----This is more learned from Crinum....That
Edgar Anderson's theory of a hybrid being a geometric mean
between two parents is quite sound....Given a hybrid with
certain features. Double these individual features and look
for a parental source. Well, the flutes in the base of the
Grand Primo cup, and the shallowness of the cup project to
the Turkish species.Anyhow it gives us something to
wrestle with. *C. orientale*

Anyway, I have quite a rework on Crinum hybrids to do now:—
Burbank's hybrid *C. burbankii* is *Yemense* x *Macowanii*.
"White Queen" is *Yemense* x *moorei*
Louis Bosanquet is *Macowanii* x *bulbispermum*
George Harwood is *Scabrum* x *moorei*
Burgundy is the same
Ellen Bosanquet is *Scabrum* x *Yemense*
Our American *C. Kirkii* is *Kirkii* x *Bulbispermum*
Miss Elsie is *Americanum* x *bulbispermum*
Twelve apostles is *Macowanii* x _____ ???????????

To tell the truth twelve apostles has me going in circles
as Edgar Anderson's nice theory takes an awful shift to the left,
or something.

We hope that you are well

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Sincerely, *Les Hannibal*
Les Hannibal

MS. Durned near forgot one of the key reasons for writing....
As you know the RHS and Syhge have turned down Traubs
Brunsvigia rosea and are still using *Amaryllis belladonna* for
the Cape bulb. Where do we stand (Hort Soc., I mean) ????
I am thinking of bringing in the *Crinodonna* (*Amarcrinum*)
and if I use *Bruns. Rosea* I have to revamp the chart and
dump Van Tubergen's *Brunsdonna tubergeni*....I would appreciate
a clarification before I get into the revamping of the MS.