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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.

June 2 1960

Dear Hannah,

Enclosed is an ad. showing the cheap projector that I mentioned to you. I know nothing about it except what is in the ad., but somewhere else I have seen that it magnifies up to 10x. However, for small enlargements of 2x or 3x it would probably be necessary to modify the instrument, either by moving the lens further from the mirror, which could be done by means of a cardboard tube, or by reducing the focal length of the lens, which could be accomplished by using a "slip-on" auxiliary lens similar to the "Plus-1, Plus-2, Plus-3" lenses sold by Kodak and others. I am sure you can find someone at Dartmouth who could help you with this.

On the same ad. there is a Mirror Type Beam Splitter for \$2.00, that could be used for enlarging or reducing drawings by the camera lucida method. The mirror would have to be mounted at an angle of 45° on an adjustable support so that its height above the table could be varied. The drawing to be copied would be mounted behind the mirror and strongly illuminated, and the drawing paper placed horizontally on the ~~table~~ table below the mirror, with a shade around it. By looking at the mirror you would see the drawing paper and pencil, and the illustration to be copied at the same time, and by varying the distances you could get either magnification or reduction.

Uhlenstedt has typed in the paper by Woodhead & Threlk. "Freshwater Fauna of Sierra Leone. I. New and Unusual Algae from the Sula Hills". Hydrobiologia III, No. 2-3, 30/12/1958, 181-225. They describe many new desmids and diatoms, but the drawings are so wretched that many are unidentifiable, and others are certainly wrongly identified. Rolf had written to Dr. Lund in England, asking him to tell the authors how poor their illustrations are, and to suggest that they find someone else to make their drawings.

Rolf also attached a clipping from a Swedish newspaper to the effect that the Univ. of Lund had purchased Telling's library of phycological literature and his iconothek for Kr. 6000, which I suppose is about \$1200. Presumably he will have the use of them during his lifetime. The price seems remarkably low by our standards, and undoubtedly he could have realized much more if he had been willing to sell it to the USA, but he told me some years ago that he wanted his entire library to remain in Sweden.

I sent Telling blueprints of the Arthrodesmus plates from the Indonesian paper, and photostats of the corresponding part of the text. Also I told him that if he wanted any of my original drawings of Arthrodesmus or Staurostrum I would gladly send them either to him or to you for copying.

It was a real pleasure for Edith and I to see you and Jerry again, and we hope that you found your Mother much improved on your return to Hanover. The trip was rather exhausting for both of us, and we were quite tired when we got home, but Edith has perked up wonderfully the last few days. Even her dizziness has improved, perhaps because of the "popping" of her ears caused by the varying air pressure in the planes.

Sincerely,

Dear Scott,

It was such fun seeing you and Edith in Philadelphia! I hope we do it again - or better, that I can some winter get to New Orleans, but that prospect is dim because of Mother's health. (He was all right while I & I was in Philadelphia but has had a bad flare-up since). After our morning session on desmids the afternoon ~~evening~~ session on indexing seemed awfully dull.

I'm glad you got some encouragement from Bill Steere at the Bot. Gard. Isn't he nice! We were graduate students together under the same prof - but he was younger, and way ahead of me.

Thanks for sending me the letters. They are of great interest to me since I am now so deeply involved. I took the liberty of "duplicating" them, since our department has recently bought a machine that does that. I have used it successfully making copies of plates from journals borrowed on inter-library loan. I could very easily do that for you (no expense to me at all). Accordingly, I am sending you a duplicated copy of Teeling's bibliog. in Stamodesmus paper, to show you what it looks like. If you check the papers you want & send it back, I'll get

Copies of the plates to you during the next few months. Now do that!

Thanks also for the flyer on optical devices. I'm tempted by the projector. I have the split prism thing, essentially. It will reduce as well as magnify so I told Jerry to let me have those super-large drawings for reduction.

I hope Teeling does use a lot of your figures. It is so easy for me, and they are so good.

I'm glad Edith is feeling better. Give her my love.

Sincerely

Harvard

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DARTMOUTH COLLEGE
: Department of Zoology :
HANOVER · NEW HAMPSHIRE

July 5 / 62

Dear Scott,

Thanks for the letter. I am glad that your paper is off your hands, in a paper as good as *Hydrobiologia*, but of course I am sorry that you cannot get some of your money back on it, and that it is not published in this country. I am surprised that *Hydrobiologia* can publish it so promptly: W.R. Taylor told me once that they were years behind.

Prescott sent me the figures to reduce, but gave me no idea how much to cut them down, so, with other things pressing, I have done nothing. I really should write to him. It seems to me that with all the figure copying we are bound to do before the completion of this book he ought to use some of the grant to buy an adequate projector. I think, too, it would be smarter just to make a 5 x plate; making the lines correspondingly heavy is no problem to me. I have a good set of pens. On one of my little papers my plate reduction ran from 2 x to 4 x.

I wish you would avail yourself of my photocopy offer now: the college library (just across the street from my lab,) is open all summer and willing to borrow anything - no expense to me, and the photocopier is standing idle. And I work at the lab every day - back at Alaskan desmids again.

I've been writing to Rolf once a week, but haven't heard a thing. I hope that is not bad news.

Give my love to Edith

Hannal

March 10 1963

Dear Hannah,

On Tuesday March 12 I am going in the hospital for an operation ~~xxx~~ to enlarge the neck of the bladder by excision of part of the prostate gladd. This is not considered a very serious operation, but in my case there is an added risk because of my age and poor physical condition. As you may imagine there are many things I have to do, especially as Edith has now knowledge whatever of financial matters. She is making good progress from her second broken hip, and may be able to start learning to walk again in another month, which is six weeks earlier than I had been led to expect, though I doubt whether she will ever be able to walk alone again.

Consequently I have not been able to devote as much time as I would have liked to the questions that you raised, but I will answer them as best I can.

1. It was a surprise to me, too, that Rolf used so few of my Uganda drawings. I must have sent him 100 or more, and I have no copies. Some of them were duplicates showing the same plant, and others doubtless were unusable ~~xxxxx~~ because I could not see all the details of ornamentation, etc. I cannot see any objection to your drawing some additional plates if you think them necessary, and call attention to them.

2. On Rolf's drawings he frequently wrote (sometimes from memory) the names of several species or vars. for comparison and checking. After checking he would write ~~not~~ or "Naj" or "not" after most of them, and if he underlined one of them either in black or red pencil that may be taken as his final determination. I think you should give his comparisons such as "Cf. E. truncatiforme". If you don't agree that such a comparison is specially apt, you could add in parentheses at the end of the description your opinion.

3. Soon after Rolf's death I received a letter from Prof. Pontus Palmgren saying that the money that had been allotted for the payment of Rolf's retirement stipend would be made available for the posthumous publication of his papers. I can't find this letter now, but I am pretty sure he mentioned the "Commentationes". You had better check this with Prof. Hans Luther.

4. In his "Sudan II" paper, in which I took no part, he mentioned in several plates "This determination was suggested by Mr. A. M. Scott", evidently from drawings that he had sent me for an opinion. I think, therefore, that it would be proper to mention that A. M. Scott had seen and drawn the plant.

5. I also dislike mere lists of taxa without comment, except where the plant is cosmopolitan and very well known. I do not think you are writing too leniently. As to the use of the word forma, when I was working with Rolf on my drawings from southeastern USA, we would sometimes come across a drawing representing a desmid of which only one or two specimens had been seen, and which could not be exactly identified with any known form after considerable search, yet there was not sufficient evidence to create a new species or var. In several such cases, rather to my surprise Rolf would cut the Gordian knot by saying "Well, let's call it a forma of so-and-so"; the taxon that it most nearly resembled. So his formae do not always imply a genetic relationship.

I do not have the time to do any research on the various species that you have questioned, and in any case your own iconograph would give comparative opinions of various authors much more quickly. However, I will give off-hand opinions on some of them.

- E. evolutum. The plate figures 20, 21 & 22 seem to me to represent the same plant with only a small difference in size. Whether to call it evolutum or oculatum is apparently a matter of personal opinion.
- E. sphyroides fa. Sphyroides is distinguished from several other species of similar form by the shape of the apical lobe in top view, exactly circular, with one apical and one subapical ring of small spicules. I think the determination is correct, and that the term forma must refer to the fact that the sinus is slightly open instead of linear. There is little resemblance to E. ceylanicum which has a polar lobe rectangular in vertical view. See my drawings of ceylanicum from Indonesia, which show two different shapes of lateral lobes, with a combination specimen, having one lobe of each kind. I think that E. hypochondroides W & W (Madagascar) might better have been made a var. of sphyroides. Schmidle's var. lata may or may not belong to sphyroides, depend on the vertical view; I think he must have shown too many granules.
- E. substellatum fa. This is another case of faute de mieux. Several years ago Prof. J. Heimanns wrote Rolf that he was thinking of revising the nomenclature of all the desmids on Krieger's Plates 90 and 91, grouping all of them into one(?) or only a few species, with varietal names corresponding to the specific ones now in use. Rolf referred him to me as having more experience with tropical desmids. I wrote Heimanns that though I had seen some specimens that apparently were intergrading forms between two species, I thought that far too little was known of the group as a whole to warrant an attempt at simplification, and apparently he dropped the matter.
- Pl. wallichianum. I agree that this should be Pl. subcoronulatum ad fa. detum. Like Fritsch & Rich I saw several specimens in the Uganda material with varying amounts of subapical constriction.
- Pl. trabecula var. maximum, you are probably right that this should be var. elongatum. My drawing of E. indicum (?) from Uganda 3 is a poor sketch of a poorly seen specimen. Rolf's specimens and mine are nearly the same size, about 15% longer and 10% wider than the max. reported by Krieger for elongatum, but they do not taper enough for maximum.

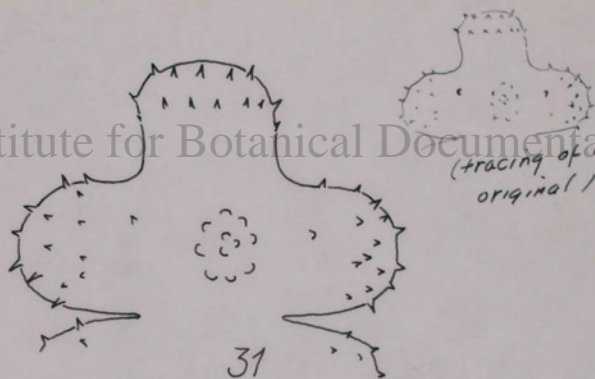
There is one other paper that you should consult, Bourrelly's "Algues d'eau douce du Republique de Côte d'Ivoire", 1961, though you may have copied it into your iconograph already. When you get into the other genera you will no doubt encounter other problems, and I shall be glad to help with them if I am able to do so. The urologist says my stay in the hospital will be from 10 to 14 days, but probably I shall be confined to bed for some time after that, and unable to reach my typewriter or literature which are downstairs. I sold my big microscope for \$750.00 to Russell Kullberg, who is studying blue-greens under Prescott at East Lansing. I still have an old Leitz monocular that I can use if I ever get back to health again. Jerry wrote me from Argentina, and Edith had a barely decipherable one from Tess. They are due to return to the U.S. about this time, and then I believe he intends to go to London and work at the British Museum, on what I don't know.

We also had an unusual winter, with seven separate freezes in Dec. Jan. and Feb. In one of them the temp. went down to 20° and stayed below freezing for three days. The last few days have been our first taste of Spring, with temps. in the 70's.

Best regards from Edith and myself.

E. sphyroides fa (RG)

I think this is more like Burrelly's form than Schmidle's var. lata, or *E. hypochondrioides*. To what extent am I entitled to express my opinions? Of course I have never seen tropical algae before, but my iconograph is loaded with them.



E. sphyroides fa.
(RG.)
(traced from plate)

Euastrum sphyroides Nordst

II: 16 forma



48-49 x 40-43 μ

differs in having slight undulation on upper margin of lateral lobe. - gives cell outline recalling E. hypochondrum.

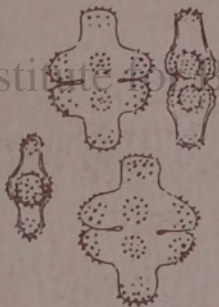
Bourrelly 1957 p 1063

Fauch Sudan

(37)

Euastrum hypochondroides nov. sp.

VI: 8 West & West 1895, p. 49 Madagascar



49-52 x 37-41 μ

lat. lob. pol. 12.5-13.5

list. 9.5-10.5

as shown

nearest *E. sphyroides* Nordst. (New Zealand..)

... differs from *E. hypochondrum*.....

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Euastrum sphyroides fa. late Schmidle

III: 3 Schmidle, 1900, p. 13

E. Africa



48 x 44 μ

semicells + polar lobe broader, semicells more granulate, apex obtuse, rounded-truncate.

Central Afr.
New Zealand.

Dear Scott,

The photocopies of the plates for the Uganda paper arrived just when I had finished my Labrador paper, so I started right in on it. So far I have worried my way through Closterium, Pleurotaenium and Euastrum, and if you feel able to cope with a few questions I would be very grateful for help and advise at this stage, since there are questions concerning policy, as well as interpretation and identification. If you are too busy to be bothered with this just throw the enclosures away - I have copies of them all. But if you are able to help me to get started at least, I am sure this will be a better paper.

Questions of policy:

1. I am disturbed with how few of your drawings Rolf included in the plates. In the above three genera there are nine that I think should be shown. These are of taxa not otherwise illustrated, and are mostly formae, and it seems to me formae should always be illustrated since there is something unusual about them. Do you think it would be all right if I made up a few supplementary plates? I could make them match the others, but they would have to tag along at the end, because of the numbering. I could ink them myself or let Miss T. do it, whichever she or Hans Luther preferred.

2. On RG's manuscript drawings he often said: "cf. E. truncatiforme" etc. Do you think I should always include such notes, even if I do not think the comparison is specially apt? In my Labrador paper, to which he contributed, I took the senior authorship and overrode or qualified such suggestions if I didn't agree with them. But I don't want to take too much on myself in this paper which is essentially written by the time I got it. But neither do I want to let you down as co-author by putting in everything blindly, just because RG said it. They may have been notes written to himself, not for publication, or when he felt too sick to think clearly.

3. Do you know what journal this paper is to be published in? At the moment I am modelling it on Acta Soc. Bot. Fennica (the one Gronblad, Prowse and Scott was published in).

4. Should I make any distinction in the write-up about whether you or RG saw and drew the plant?

5. Do you think I am writing this up too lengthily? For myself, I hate just lists of taxa without comment, particularly when so many of them are forma as is the case in this paper.

Please answer freely and frankly at this stage, so that you will be really satisfied with the result, and it will be a credit to all of us!

DARTMOUTH COLLEGE
DEPARTMENT OF ZOOLOGY
HANOVER · NEW HAMPSHIRE

23 October 1962

Dear Scott,

J. Cramer writes that he is sending "the 50 separata ordered by the late Dr. Rolf Grönblad to your address and I hope you will distribute them to your correspondents which should be nearly the same as of Dr. G." Fifty is much less than I send out so I will have to pick and choose, and probably miss some vital ones. Do you happen to have a mailing list for his papers?

J. Cramer also said he was writing to ask you for an manuscript for a proposed "necrologue" of Rolf. Should I offer my Labrador paper that we were writing together? Cramer didn't ask me.

Cramer also said, in response to my query as to further desmids in the Rabenhorst series that he was in contact with Dr. Brook for Stauros-trum - "but he is very much engaged being the secretary of the Botanical Congress, so that this will not be ready before three years". If he is that busy I don't see how he could do a good job with it in three years. And anyway, do you remember one of his last papers - the big one in which he revised S. anatinum, forsaking Linnaeus' binomial system? and limiting himself apparently to plankton forms for I have never had a plant that matched one of his many illustrations. I think he merely produced chaos. I hate to think of that sort of thing getting into Rabenhorst. I think that Kuno Thomasson would be the man for it. What do you think?

Do you by chance have an authority and reference for Arthrodesmus incus var. parvus? It is mentioned by Rolf by a pencilled note on one of my drawings.

How are you now? And how is Edith progressing?

My very best wishes to you both.

Hannah

Oct 30 1962

Dear Hannah,

I feel sure that Grönblad would have ordered more than 50 reprints of any and all of his papers, so perhaps the 50 separates that Cramer has sent you are the 50 free copies allotted to each author. In the last issue of Nova Hedwigia that I have, Band II, Heft 4, 1960, it is stated:

"The authors will receive a fee of DM 25 per sheet [signature] of 16 pages as well as 50 offprints of their work. Additional offprints can be supplied at cost".

So I think you should write Cramer and ask if he can furnish additional reprints and at what cost, mentioning that he will not have to pay the author's fee.

Enclosed are Grönblad's list of correspondents as of July 1957; my own of September 1958; and a smaller list of July 1961 of those to whom I sent the Indonesian paper because it was so expensive. With a few exceptions the names on my 1961 list are more or less actively working on desmids. Please return these lists after you have used them; there is no hurry.

Some months ago Dr. P. C. Silva asked me to write a complete obituary of Grönblad for the international journal PHYCOLOGIA, but I replied that I did not feel competent to do it, for I know practically nothing of his life before 1946, when I first made his acquaintance through the exchange of reprints which led to correspondence. Silva mentioned that Dr. Carl Gedercreutz and his wife had visited him in California earlier this year and had discussed Grönblad, so I suggested that Gedercreutz might be the one to write the obituary. He is about the same age as Rolf, and must have known him much longer than I did. Also being on the ground, so to speak, he would be in a much better position to obtain any missing ^{information} by making phone calls, whereas I would have to do it by correspondence, and I do not even know where to write!

So I replied to Cramer's invitation ^{at} to write a necrology in much the same vein, and gave him the name and address of Einer Teiling, though I suppose that Teiling will have written an obituary for one of the Swedish journals.

I hope that Cramer has not made a definite arrangement with Brook to do Staurastrum for the Rabenhorst series. So far as I recall Brook's experience has been principally (or entirely?) with British species. This would include most of the European continental species of course, but I think he has not had experience with those from other parts of the world. I wonder what's the matter with Gerloff, who helped edit the Cosmarium section. In the International Directory of Specialists in Plant Taxonomy he lists himself as a specialist on "Cosmarium and Staurastrum", and since I first saw that listing I have wondered how anyone can be a specialist on only two genera of desmids, and those the most difficult ones. He also lists Volvocales; Algae from Central Europe; Micromorphology of diatom frustules in relation to taxonomy.

Two or three years ago Rolf wrote me that he considered Kuno Thomasson "a promising young man", and that's about the way I regard him. He has studied desmids from several parts of the world, but in my opinion he needs far more experience before he could be considered an expert. His draftsmanship is gradually improving, but I have been told that his wife can draw much better than he can. I think his last paper is a mess, in several ways. He arranged the desmid genera alphabetically, instead of following the accepted sequence that has been used by all the best authors since the Wests or before. The illustrations of different species of one genus are scattered at random on several plates, each of which contains 4, or 5, or 6 other genera. There is no attempt at a uniform magnification, nor of collecting together the figures

of morphologically similar species. Without enough experience he rejects Krieger's name of Mic. torreyi var. doveri (Biswas) Krieg., and reverts to the original name of M. Doveri Biswas, though I doubt that he has ever seen any of the other varieties or the specific form. I have seen all of the varieties illustrated in Krieger's monograph, from the U.S.A., Brazil and Indonesia and I think his arrangement is correct, as did Grönblad also. Even Thomasson ought to have noticed that var. doveri has just five lateral lobules on each side of the semicell, the same as the specific form, and that no other Micrasterias has this number. In fact var. doveri looks to me like Bailey's type of the species that has been compressed laterally and consequently lengthened vertically.

There are very few desmidiologists in the world whom I consider capable of finishing Krieger's work. It would be a full-time job for several years, no matter whom undertakes it, and that would probably rule out those who have salaried positions, for I think it doubtful that Cramer, as the publisher of Nova Hedwigia, could afford to pay a good salary for that length of time. On this side of the Atlantic the only ones whom I consider capable are Prescott and you, and you, I believe, would be prevented by the pecuniary consideration that I have mentioned. Jerry might be able to undertake the task after his retirement which he mentioned in a letter early this year, but since he is thinking of moving to Florida he would probably be separated from his iconograph and phycological library. He did not say when his retirement would occur, but he is 63 years old and it is possible that the University's compulsory retirement age is 65.

In the rest of the world there are Teiling, Kossinskaya, Ruzicka, and Bourrelly in Europe, and Minoru Hirano in Japan, and that's about all. Teiling will be 75 next March and I think it would be unwise for him to start such a big job, even if he were willing, to say nothing of his peculiar ideas which will not meet with general acceptance. I like Kossinskaya's work, but judging from the infrequency of her citations of extra-European literature she does not seem to know much about what is being done elsewhere. Ruzicka's experience, I believe, has been solely with European desmids, but he has a fine discrimination, and ought to be capable provided he has access to the necessary world literature. Minoru Hirano has done some excellent work with the Japanese desmids, though I don't exactly like his illustrations, many of which seem to have been done with drafting instruments. Have you noticed that in all his desmids that have a closed sinus, the sinus is drawn perfectly straight? That is far from true in many species. So that leaves Bourrelly, and I think he is the best fitted for the job. He maintains an inotheque, and I should think that the Natural History Museum in Paris ought to have a very large collection of phycological literature. His drawings are correct, though not infrequently he makes them from slightly tilted specimens, resulting in a skewed drawing.

With all of these authors there is the language difficulty. Teiling used to write and speak German, though I don't know if it is always quite correct grammatically. I know nothing about Kossinskaya. Ruzicka can read English, French and German, and was compelled to learn Russian, but I think he would have to write in Czech. Bourrelly knows some German which he learned while a prisoner of war in Germany, but I have been told (by Teiling I believe) that he refuses to speak or write it. Hirano writes in English but with many small mistakes as you have doubtless noticed.

Sorry that I cannot help you with A. incus var. nervus: I can find no record of it. I think your reference facilities are much better than mine, and if you are unable to find the author I believe you should ask Prescott, and if he does not have it I would assume that it is a new variety. There is a bare possibility that it might be among the dozens of my drawings from SE U.S.A. which are either in your possession or Prescott's. Grönblad had a very hard time in separating my drawings of various forms of A. incus into more or less arbitrary groups, and though we intended to publish all the novelties from this region, it may be possible that this one was accidentally left out.

Now here's a question for you. I have Raciborski's 1895 paper

"Die Desmideenflora des Tapakoomasees", in which he lists and illustrates Hoplozyga armata L&f. in Nordstedt. The spelling should be Hoplozyga, and I cannot find any paper by L&f. in Nordstedt in any bibliography. In his Index Nordstedt lists it as ~~Hoplozyga~~ Gymnozyga (Hoplozyga) armata Nordst., and refers to his 1889 paper "De Algis et Characeis III", which I do not have. Could you copy this paper for me on your copying machine? It seems to be a very short one.

I found the 6-rotate form of G. armata from Brazil in 1953; this has 6 almost straight spines equidistant. Raciborski also shows a form with decidedly curved spines arranged in pairs, making it 3-rotate, and the shape of the spines shows a distinct similarity with Desmidium curvatum, which was described by Nordstedt in the same 1889 paper. Now my friend Kurt Förster has found in Brazilian material forms with 5, 6, 7 and 8 straight spines equidistant from each other, and another form with 8 slightly curved spines arranged in 4 pairs, making it 4-rotate and analogous with Raciborski's 6-spined 3-rotate plant.

The vegetative reproduction is the same as in Gymnozyga, Desmidium and Streptonema with infolding of the end walls of the new semicell. Förster has drawn a zygospore of vaguely octagonal shape, formed between two 3-rotate cells.

I do not think this plant belongs to Gymnozyga (now Bambusina), but rather to Desmidium by analogy with D. curvatum, or even to a new genus, which by priority would have to be Hoplozyga. On the other hand I am very hesitant about changing the determination of such an eminent authority as Nordstedt, especially when he described both of these plants in the same paper that apparently has no other desmids. That's why I would like to have his 1889 paper, to see if he gave any reasons for the assignment to different genera. I hope it is not written in Latin like the title, though I could possibly understand the gist of it.

In a previous letter you wondered from whom Douglas Williard had obtained the new material, but it was collected by Jerry C. Nash, Director of Parks, who is unknown to me. Williard wrote again on Sept 6 1962, offering me some rich samples collected by a friend of his, no name given, in the northern part of the island of Hokkaido, Japan. I wrote him that I was unable to undertake the study of this material, and that the desmid-flora of Japan was quite well-known from the work of several investigators; also that a Desmid-flora of Japan had been published by Minoru Hirano, whose address I gave him. Further I gave him the addresses of Kuno Thomasson and P. Bourrelly, as European desmidologists who might like to get the material. Some 15 years ago Hirano sent me a number of Japanese samples, and I was surprised and rather disappointed to find that most of the desmids were cosmopolitan species.

Edith's broken femur has healed satisfactorily, and she is now able to hobble around the house with the aid of a "walker", and also in a wheel-chair, but I am afraid it will still be a long time before she will be able to walk unaided. My health is pretty much the same, but last summer my doctor experimented on me with several tranquilizer drugs, in an effort to arouse me from my state of apathy and depression. None of them did much good, and at least three had some unexpected and very disagreeable side effects, such as profuse perspiration, light-headedness, trembling of the hands and fingers so that I could hardly sign my name, muscular twitching when lying in bed trying to get to sleep, and weird dreams when I finally slept. During the months of July to September I was hardly in my right mind; had difficulty in comprehending what others said to me and in carrying on a connected conversation. It was not until October that these effects finally wore off.

Edith and I send you our best wishes, and hope that you and your Mother are doing all right.

Sincerely,

Scott's figures that should be added to Uganda paper: *so far!*

Closterium diana fa.

Cl. diana fa.

Euastrum elegans fa.

E. elegans fa.

E. Luetkemulleri fa

E. sphyroides fa.

E. substellatum fa.

I am enclosing the first draught of the manuscript to date, just to give you an idea, and to invite criticism. Nothing need be returned ~~except~~ except with your critical notes.

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I do hope that you and Edith are doing well. This seems to have been a severe winter, from the climate point of view, *as/46* for you as well as for us - and harder on you because you all are less prepared for it. We had 20 below zero yesterday morning. It warmed up to 0 this morning, but another cold wave is on the way. Snow in our yard as 2-3 feet deep, and higher about the house where it has slid - or been shovelled off the roof. No sign of spring yet except for the lengthening days.

Love to Edith!

Hannah

Hannah Crossdale

Glosterium abruptum W. West var. africanum Fritsch & Rich
 fa. angustum fa. nov. - Fig. 2

(latin)

If it is really a new species. I have been nearly fooled by two so far marked "new ~~sp~~ var", which turned out to have been published already: one in ~~1956~~ Grönblad, Prowse and Scott, and one in Grönblad & Scott 1958. Do you know of any other publications beside these two that I should check for this circumstance? (I'm checking everything of his since 195h)

Long. 72 μ , lat. 5.5 μ (13 x); wall smooth, 3 pyrenoids per semicell. Much smaller than the variety and relatively more slender, but resembles it particularly in the straight middle section and abruptly incurved ends. Compare also Cl. cornu which it resembles more closely in size, although not in shape - Sta. 4

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Cl. acutum Breb. - Sta. 4.

Cl. acutum var. latius Grönbl. fa. - Fig. 1

Long. 70 μ , lat. 5.5 μ (12.7 x). A smaller form with apices more blunt. - Sta. 4

Cl. cornu Ehrbg. - Sta. 2,4.

Cl. dianae Ehrbg. - Sta. 2,4,5

Cl. dianae fa.

AMS
 Long. 291 μ , lat. max. 20 μ (14.5 x), lat. apic. 5 μ , 110° arc, about 9 or 10 pyrenoids per semicell; wall smooth, colorless. A slender form, approaching var. pseudodianae (Roy) Krieg. - Sta. 5.

Cl. diana fa.

AMS
Long. 309 μ , max. lat. 23 μ (13.4 x), lat. apic. c. 6 μ ,
53° arc. Wall smooth, apex typical of Cl. diana, but cell is
more slender and much less curved than type. - Sta. 5.

Cl. gracile Bréb. - Sta. 4

Cl. gracile var. elongatum West & West - Sta. 2

Cl. Kuetzingii Bréb.

AMS
Long. 552 μ , max. lat. 15 μ (37 x), lat. apic. 4 μ ;
wall striate, about 12 striae visible at center of cell;
8 pyrenoids per semicell. - Sta. 5

Cl. parvulum Nag. var. angustum West & West - Fig. 3

Long. 74 μ , lat. 4 μ (18 x), 115° arc. A smaller and
less-curved form. - Sta. 2.

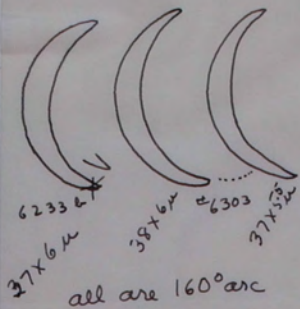
Cl. setaceum ~~(Kütz.) Bréb.~~ Ehrbg.

AMS
Long. 435 μ , max. lat. 12 μ (36 x), lat. apic. 3 μ ;
striae not visible; 3 pyrenoids per semicell. - Sta. 5.

Cl. subulatum (Kütz.) Bréb. - Sta. 4Cl. turgidum Ehrbh. var. Borgei (Borge) Deflandre - Fig. 4.

Long. 1094 μ ; wall finely striate. - Sta. 4

RG calls these *C. incurvum*
I think they should be venus



Cl. venus Kütz. - Sta. 4

Pl. eugeneum (Turn.) West & West var. undulatum (Borge)

Krieg.

Cl. venus fa.

Long. 1954 μ , lat. bas. 49 μ (21.5 x), lat. apic. 40 μ
 wall 1.5 μ , lat. 37-38 μ , lat. 5-6 μ (6.3-6.7 x), 160° arc. RG
 left figures of three plants which he called Cl. incurvum Breb.

(Cl. venus var. incurvum(Bréb.) Krieg.) They are relatively short as in Cl. incurvum, but differ in lesser curvature (Cl. venus = 150-160°, Cl. incurvum = c. 180°), and in the general shape: our plants have the uniform curvature of Cl. venus, whereas Cl. incurvum tapers abruptly to very sharp ends from a broad thickened middle portion. - Sta. 2, 4.

fragmented into many small units, each with one pyrrenoid.

Pleurotaenium baculoides (Roy & Biss.) Playf. - Fig. 7

Long. 426 μ , max. lat. bas. 23 μ (18.5 x). - Sta. 2.

Long. 150 μ , lat. bas. 12 μ (12.5 x), lat. apic. 10 μ .

Only one seen. - Sta. 5.

Pl. cylindricum (Turn.) West & West var. Stuhlmannii (Hieron.)

Krieg. - Fig. 16.

Long. 1368 μ , lat. bas. 61 μ (22.4 x); wall densely and finely porose; 13 visible polar nodules. - Sta. 5

Pl. Ehrenbergii (Breb.) DeBary fa.

"Fa. majus!" - Sta. 4

Pl. eugeneum (Turn.) West & West var. undulatum (Borge)

Krieg.

Long. 1054 μ , lat. bas. 49 μ (21.5 x), lat. apic. 40 μ ;
wall smooth; semicells cylindrical, with very little taper;
about 12 small polar nodules visible. - Sta. 5.

Pl. gloriosum (Turn.) West & West. - Fig. 10,11.

AMS
Long. 1040 μ , lat. bas. 48 μ , lat. apic. 42 μ , ist.
44 μ ; three very faint undulations above basal inflation;
no girdle; 14 visible polar nodules; chloroplast bands
fragmented into many small units, each with one pyrenoid.
Sta. 5.

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Pl. minutum (Ralfs) Delp.

AMS
Long. 150 μ , lat. bas. 12 μ (12.5 x), lat. apic. 10 μ .
Only one seen. - Sta. 5.

Euastrum evolutum (Nordst.) Wals.
var. reductum var. nov. my later

Pl 31, f 93



58-60 x 39-40 x 28 x 9-10

lateral lobules much
reduced and shallow
incisures of lat. margin
rather than incisions

spinescence of polar lobules
also reduced
lat. view as shown

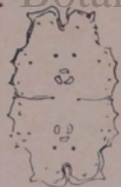
Scott & Prescott 1952, p 362

Florida

Euastrum bidentatum Vig

Pl 30 f. 570

fa. minor



38-39 x 23-24 μ

apex 15 μ

as shown

sp. = acutoph.
cosmosp.

Bourrelly & Mangin 1952 p 226

Guadeloupe

E. evolutum (Nordst.) West & West fa. - Fig. 20

Long. 42 μ , lat. 28 μ .

(Note to Scott: On RG's drawing he had E. evolutum fa. underlined in red, which he seems to have done for his final decisions. Underneath this he had "E. oculatum fa. cf. Scott's figure". On the plate one of these is Fig. 20 and the other is 21, and I think they are the same. But I also think that in both the polar lobe is not long enough for E. oculatum, or ~~with~~ with enough protuberances for E. evolutum - except perhaps var. reductum. I am enclosing a copy of fig. 20 and 21²² on Plate II, and also copies of two of my icon sheets that seem to come closest.

E. Luetkemuller Duc. fa. -

Long. 37 μ , lat. 23 μ (1.6 x), crass. 18 μ , ist. 8 μ .

A large form with sides concave, not expanding at apex,
ocellus high as in var. carniolicum (Lützk.) Krieg. - Sta. 2.

E. praemorsum (Nordst.) Schmidle var. simplicius var. nov.

Gronbl. & Scott in Gronblad, Prowse & Scott 1958, p.

15, Fig. 69, 73. - Fig. 19

Long. 69 μ , lat. 37 μ (1.6 x), ^{max.} ist. 10 μ .

This is the type for the variety.

E. pseudoboldtii Grönbl. fa. - Fig. 23, 24.

Long. 15 μ , lat. 10 μ (1.5 x), ^{max.} crass. 7 μ , ist. 5 μ .

This form has a deeper apical notch, lacks the paired granules above the isthmus, is much smaller, and has the surface and marginal granules more pronounced than in the original.

E. sphyroides Nordst. fa. - Fig. 31.

Long. 54 μ , lat. 41 μ (1.3 x), ^{ist. 14 μ} RG said "Cf. var. lata

Schmidle (1899, p. 43, III: 3) and E. hypochondrioides West & West. It seems, however, closest to a form from the French Sudan illustrated by Bourrelly (1957, p. 1063, II: 16). - Sta. 2.

E. sphyroides Nordst. fa.

AMS
Long. 47 μ , lat. 42 μ c.sp., crass. 22 μ , isth. 12 μ .

This form resembles var. intermedium Lütke. in its proportions (1.1 x), and var. Hieronymusii (Schm.) Krieg. in its marginal ornamentation consisting of short spines rather than teeth, but also approaches E. ceylanicum (West & West) Krieg. in its size and vertical view, with a suggestion of lateral verrucae on the lateral lobes. It differs from all of them in having the interior series of inframarginal teeth bicuspid, and in having an open sinus. - Sta. 2

E. spinulosum Delp. var. Lindae Gronbl. & Scott 1958, p.

17, Fig. 84-88. - Fig. 32a, 32b.

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Fig. 32a shows a plant long. 108 μ , lat. 103 μ , isth.

21 μ . - Sta. 4

Fig. 32b shows in side view a plant long. 99 μ , crass.

49 μ . - Sta. 4.

E. substellatum Nordst. fa. - Sta. 5

AMS
Long. 62 μ , lat. 58 μ c.sp., crass. 24 μ , isth. 13 μ .

Differs from type in larger size and in shape of basal lobes which are horizontal for more than $\frac{1}{2}$ half their length from the isthmus, resulting in a closed sinus, and then are abruptly upwardly directed. This more closely resembles E. spicatum Turn., which Krieger (1937, p. 29) includes in E. substellatum. - Sta. 5

E. subcrassum Fritsch in Fritsch & Rich 1937, p. 176,
Fig. 8 D,F. - Fig. 29,30.

Long. 57 μ , lat. 32 μ (1.82x), ist. 9 μ . A form approaching var. elaboratum Grönblad & Scott (1958, p. 17, VI: 77a, 80-82). It has a large central ocellus and the two within the polar lobe, but lacks all other facial ornamentation except for the basal nodules. Cf. E. sympa-
geum West & West, E. truncatiforme G.S. West and E. trunc-
atum var. trifolium (Cohn) Krieg. - Sta. 4.

E. truncatiforme G. S. West - Fig. 28

Long. 46 μ , lat. 36 μ (1.3 x), ist. 10 μ . Our plant differs in distribution of inframarginal granules. In West's plant there is one within each lateral lobule and none within the polar lobe, in ours there is one within each corner of the polar lobe and only one for each lateral lobe. - Sta. 4.

6236

long 988 μ
lat of lumen
42

trabec. v.
Plumit (trabec.)
f.

120/



5-9

6601

apex truncate
thickened

[long 988 μ]

[trabec. v.]

Pl maximum
1
(see also
P. indicum)

not umbilicate

not umbilicate

120/

Uganda 4

U

RG called these Pl. trabecula
var. maximum. I think they
are closer to var. elongatum
(which you reported in Uganda)

These two of RG's are

988 x 12 u (23 x)

? x 38 u

I do not believe that they
are Pl. indicum as he suggests
because they are not undulate
in lower half of cell



R.G. called this
Pl. Wallichianum

but ↑ is supposed to
 taper to apex, which is
 half the width of the base
 I think this is Pl
subcoronulatum f.
 ad var. detum, because
 of the flaring apex
 with ± constriction
 below. Futsch & Rich
 (1924 (Natal) p 329 "found
 all transitions between
 type and var. detum"

← size = 760 × 53 μ base
 51 μ apex

too big for v. africanum
 which you report
 from Uganda (264 × 27.)

L semicell 483 - 966

W base 39

W pole 27

Pl. indicum (Grun.) Lund ?

5x44

Not sure whether granules or not.

Old semicell in poor condition, and coated with mucus + debris.

Uganda 3

Jan 11/59

I would like to call this Pl. trabecula var. elongatum, because it shows only 2 undulations above basal swelling - not undulate half way up. Nor is yours punctate.

(24.7x)
39) 966
78
186
300

Pl. minutum var. elongatum (West & West) Cedergr. - Fig. 5,6
 Long. 221 μ , lat. bas. 9 μ (24.6 x), lat. apic. 5.3 μ -
 Sta. 5.

Pl. subcoronulatum (Turn.) West & West fa. ad var. detum
 West & West acced. - Fig. 17,18.

Long. 760 μ , lat. bas. 53 μ (14.3 x), lat. apic. 51 μ ;
 16 visible polar nodules; a large form. RG called this
Pl. Wallichianum (Turn.) Kreig., but we believe it more
 closely resembles Pl. subcoronulatum because of the ex-
 panded apex, whereas the irregular indentations below approach
 var. detum. Fritsch & Rich (1924, p. 329) found, in Natal,
 "all transitions between type and var. detum". - Sta. 5.

Pl. subcoronulatum var. africanum Schmidle - Fig. 12,15.

Two forms were seen, both longer than type:

a) (Fig. 12,13) Long. 564 μ , lat. bas. 27 μ (21 x), lat.
 apic. 23 μ , isth. 24 μ ; margins very faintly and irregu-
 larly undulate; no girdle; 10 visible polar nodules. - Sta. 5.

b) (Fig. 14,15). Long 638 μ , lat. bas. 30 μ (21.3 x);
 12 visible polar nodules. - Sta. 5.

Pl. trabecula (Ehrbg.) Näg. var. elongatum Cedergr.

Long. 610 μ , lat. bas. 32 μ (19 x), lat. apic. 24 μ ;
wall smooth; apex truncate with rounded angles; 3 basal
crenations; Chloroplast bands broken up into small units,
each with one pyrenoid. - Sta. 5.

Pl. trabecula var. elongatum fa. - Fig. 8,9

Long. 910-988 μ , lat. bas. 38-42 μ (23-25 x), lat.
apic. 27-30 μ ; wall smooth; apex truncate with rounded
angles; prominent basal inflation, with two smaller in-
flations above it. Somewhat longer than the maximum
length for the variety, but too slender to be var. maximum
(Reinsch) Roll. - Sta. 3,4,5.

Pl. trabecula var. rectum (Delp.) West & West.

Long. 247 μ , max. lat. bas. 18.4 μ (13.4 x), lat.
apic. 14 μ . - Sta. 2, 4.

Pl. verrucosum (Bail.) Lund. - Sta. 5.

Pl. sp. - Sta. 5.

Euastrum divaricatum Lund. fa. - Fig. 27

Long. 39 μ , lat. c. sp. 39 μ ; a relatively short form, approaching var. subdivaricatum (West & West) Krieger in its ornamentation. - Sta. 4

AMS - E. elegans (Bréb.) Kütz. fa.

Long. 27 μ , lat. 18 μ (1.5 x), isth. 4.5 μ . A small form approaching var. madagascarensis West & West (1895, p. 52, VI: 18) in its open apical and ornamentation reduced to three central granules. - Sta. 5

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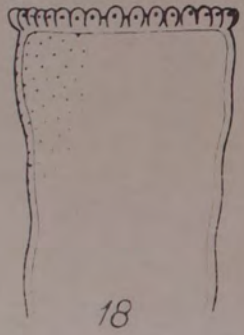
AMS - E. elegans fa.

Long. 32 μ , lat. 22 μ (1.5 x); A rounded form with open apical notch and reduced ornamentation, approaching var. compactum (Wolle) Krieg. - Sta. 3

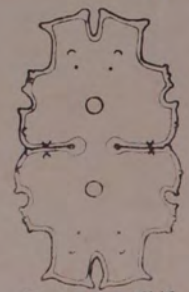
E. elegans var. compactum (Wolle) Krieg. - Fig. 25, 26.

Long. 27-29 μ , lat. 19-20 μ , crass. 13 μ c. gr., isth. 4-6 μ ; ornamentation reduced. - Sta. 3.

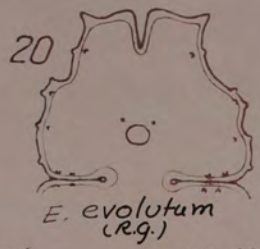
E. oculatum (A.M.S.)



18

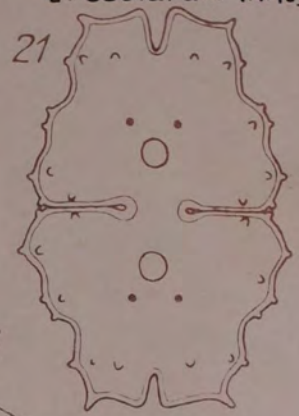


E. praemorsum
19 v. *simplicius*

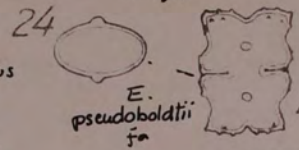


20

E. evolutum
(R.G.)

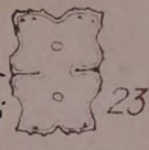


21

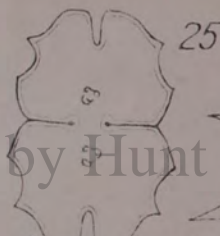


24

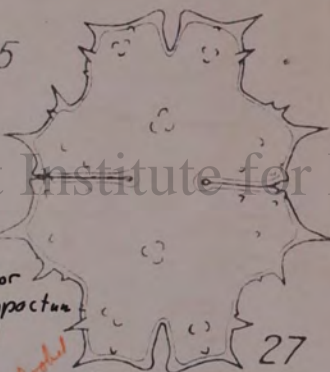
E. pseudoboldtii
fa



23



25



27

E. divaricatum fa
(R.G.)



28

E. truncatiforme
R.G.



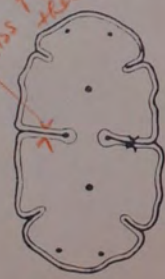
22

↑
E. elegans fa? or
var. *compactum*
R.G.
↓

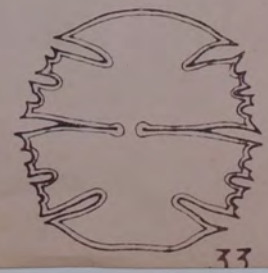
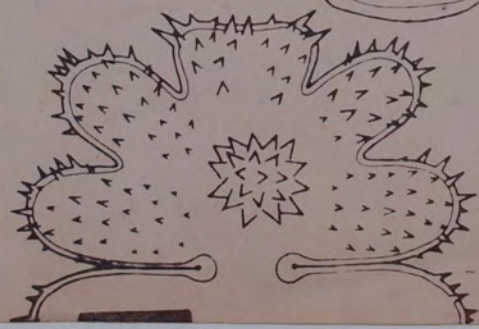


26

Miss T. *occidentalis*
alaska



29



33

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Feb 5 1962

Dear Hannah,

At Christmas our friend Rolf startled me out of my lethargy by sending me a large and beautiful bouquet of flowers, delivered by a local florist of course. I am afraid he spent more money on it than he should have done, but at any rate it had the desired result of making me write to him, for the first time in 9 or 10 months. His reply has just come, and I am glad to know that he is in good health. Perhaps he has written you that he has applied for a Government position as "Natural History Investigator" and has some hope of getting the appointment, even though it would mean giving up his dentistry and a considerable reduction in his income. He doesn't say whether he could continue living at Centralgatan 86, or what other changes would occur.

From the Akademiska Bokhandeln in Helsingfors I received a small book with Rolf's card enclosed, entitled "Moominland; Midwinter", apparently one of a series. It seemed to me a book for children, so in my letter I asked Rolf if the bookseller had perhaps sent me the wrong book. He replied that it was intended for you, and asked me to forward it, which I have done. He says that over there adults read the book and enjoy it; maybe you can get more out of it than I could.

As Edith wrote you, I have recovered physically, more or less, from the serious illness of last summer, and even gained some weight from better appetite through having to stop smoking cigarettes. But there is no improvement in my mental condition; I have no energy nor ambition to do anything. For two years I have done nothing of desmids, except the work involved in the publication of the Indonesian paper, and it seems unlikely that I shall ever do any more with them.

In one of your letters which unfortunately has been mislaid, you wrote that with your new microscope you were unable to make a camera lucida drawing enlarged more than 1000x, using a 15x ocular. I have never seen this 'scope, and know no more about it than the meagre information in the circular that I sent you. For desmids larger than say 75µ the 1000x drawing is satisfactory, but for smaller ones I would certainly prefer the 1600x as in most of my drawings, and for the minute species I have gone up to 2400x. Here are three suggestions for increasing the size of your drawings:

- 1). Use a 20x ocular. This will probably give poor definition with achromatic objectives, but sufficient for drawing the outline and locating the principal features of ornament; then revert to the 15x for observing details and fill them in freehand on the sketch. Some companies offer a 20x semi-compensating ocular for use with high-dry and immersion achromatic objectives. This gives better definition than the 20x Huyghenian or Ramsden oculars.
- 2). Attach a negative lens to the end of the camera lucida tube that points down to the paper. This should be a negative meniscus lens of the same diameter or slightly larger than the tube, and you can stick it on temporarily with masking tape. The focal length will be a matter of trial and error; as a starter I would suggest a focal length of about minus 150 mm. Perhaps you could borrow such a lens from your Physics Dept to see how it works. The Edmund Scientific Co. of Barrington, N.J., offers war surplus lenses of this type in a wide variety of sizes and focal lengths for 50¢ to \$1.00 each.
- 3). Raise the whole microscope 2" or 3" or 4" off the table. This would involve trouble with your chair or stool, but might be worth it

Best regards to you from Edith and myself.

Sincerely,

(% Mrs J. P. Croasdale Jr /
Berwyn, Pa
Thursday leaf
Chick

Dear Scott,

Thanks for sending me a copy of your letter to Prescott. I'm awfully awfully sorry that you and Edith are feeling so miserable in one way or another, maybe you will both pull out of it soon. My mother has been terribly sick the fall, and a prescription from another doctor, and another operation have put her back on her feet.

As far as my not coming to New Orleans, that does not matter. It was mostly a pipe dream anyway. It would have been too expensive a trip for me since I am on only a $\frac{1}{2}$ pay sabbatical, and also I had not been able to find out from Prescott how to work there efficiently. But I did want to see you both, and see your microscope camera-lucida set-up. Perhaps in the spring I might get the NSF grant to finance me, Prescott might be organized and, most important you and Edith might be feeling better. The first two, at least, are pretty big ifs, so I'll make no plans.

Mother and I drove down to Pennsylvania for the holidays. My sister-in-law, two years

a widow, has rather suddenly become very unhappy about living alone. So I am glad we are here. Mother will stay here until her through January, while I go off to Wood Hole for a while, to use the library there: catching up on my iconograph tracings - specially Russian, checking bibliography in my last paper, and, I hope, doing some useful work for the N. Am. Desmid Flora. Jerry is to let me know what - I hope he does.

I read with great interest the rest of your letter to Prescott - about how Hydrobiologia hashed up your Indonesian paper. What a wretched shame. I think it would be a good plan to send the copy of that letter to W. R. Taylor. He seems receptive to criticism - he asked me if the Woodhead and Tweed paper was really as bad as someone had said. (I told him "YES"). I think he ought to be told just what you told Prescott.

I got a nice letter from your Kurt Förster, thanking me for my reprints. Apparently he is publishing now.

Thanks for answering so helpfully the person I ~~reft~~ referred to you about camera-lucida drawings.

I hope Kossenskaya sends me that paper. I asked for it. Also I hope I get the new Cosmarium.

But I hope most of all that you & Edith get better soon!

Love to Edith. Hannah

ARTHUR M. SCOTT

2824 DANTE STREET
NEW ORLEANS 18, LA.

Dec 17 1960

Dear Jerry,

The reason I suggested sending you all my drawings of USA desmids without listing or tabulating them is that I simply do not know when, or if, I can summon up enough energy to undertake it, and it is useless to leave you under the impression that I can do it. I have fallen into such a state of lassitude that I have no ambition to do any work at all, even on my beloved desmids. The doctor has given me "pep" pills that were supposed to improve this condition, but they seem to have no effect at all.

Hannah told me some months ago that she hoped to come to New Orleans soon after the New Year, but I'm afraid this will not be possible, for Edith will probably have to undergo an operation for cystocele. We have not quite decided on it, but there seems nothing else to do. She would go into the hospital about Jan. 10th, stay there for a week after the operation, and then would convalesce at home for about another two weeks.

As you suggest, it will be better under the circumstances for Hannah to go to East Lansing, where she will have better working conditions, and access to your own drawings, your iconograph and card index, and your much larger supply of literature. I am sending her a copy of this letter so she will be acquainted with the facts.

I did not know about Irénée-Marie's death until your letter, though I knew that he had been in poor health for some years, and as a matter of fact I wondered why he had not acknowledged the last reprint that I sent him; he was always meticulous about that. Brunel is the only phycologist who knew him personally, I believe; at least I never met anyone else who knew him. Perhaps Brunel might be able to arrange for you to borrow I.-M.'s original drawings. It would be worth looking into.

As I told you on the phone, I was disgusted and infuriated by the careless way in which *Hydrobiologia* handled our Indonesian paper. It is not van Oye's fault, but rather that of the publisher's editor, or copy-reader, or whatever his title may be. To keep the number of pages to a minimum and thus reduce the cost, he has compressed the text to such an extent that it makes a very poor typographic appearance; in fact I don't consider it typography at all, just mere printing with no style whatever. To save time, which was a primary consideration with me, he omitted the galley-proof and sent it to me in page form, when it is too late to change it much. The Linotype operator must have been an apprentice just learning his trade, judging from the large number of wrong letters, omitted accents and umlauts even in such frequently repeated names as Bréb., Næg., Börges., Grünbl. Whole words have been omitted, and in several instances type has been set twice for entire lines, or sentences, and even for half a page of the text. One page of my Ms. has been lost and not set in type. They have disregarded my wavy underlines indicating bold-face for the new epithets, and have set the entire name in italics. I have just learned from the manager of the Tulane Printing Shop that on a Linotype or similar machine, bold-face cannot be set in the same line with italics, except by expensive hand work, but there was nothing to prevent them from setting the new epithets in some different style, say small caps or italic caps. The "leads" or line-spaces between items indicated in my Ms. were omitted. Admitting that this may have been necessary to save space, the copy-reader should have had sense enough to indent the first line of the next item, which was not done. I made a special request that the "Explanation of the Plates" should be printed with a separate line for each item, and I even offered to ~~pay~~ pay them up to \$250 if they would print

the plates of illustrations on the right-hand page with the corresponding explanation on the verso of the preceding page, and pencilled instructions to this effect were written on the first sheet of the "Explanation of Plates" in my Ms., but had been crossed out in ink, and disregarded. Instead, they have set the Explanations in 6-pt type in solid paragraphs, one paragraph to each plate, which was precisely what I had asked them not to do.

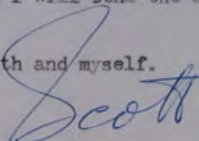
Well, I wrote a 4-page letter to Van Oye, with a carbon copy to be sent to the publisher, protesting against all these unauthorized departures from the style indicated in my Ms. Also I made suggestions for improvements that can still be made because it will be necessary to re-page about two-thirds of the proof on account of their own errors. I asked them to insert 8-pt leads between items, and to compensate for this by a slight increase in the height of the type page, which would enable them to print 45 lines per page instead of 44. There has not yet been time for their reply, and I am curious to know what they will do. I have ordered 75 reprints for myself plus 10 extra copies of the plates, and 75 reprints for you, and I will pay for all of them. If you get some research money at some later date you may perhaps be able to reimburse me for some of them.

Perhaps the nomenclature/systematics/synonymy of *Allorgeia* has been clarified by Kuno Thomasson's recent paper "Notes on the Plankton of Lake Bangweulu, Part 2", in which he has published *Allorgeia incredibilis* (Grönbl., Prowse & Scott) Thomass., comb. nov., in *MEMO Nova Acta Reg. Soc. Sci. Upsal.*, Ser. IV, (17)12, 1960, but note that he cited the original authors erroneously as (Grönbl. & Scott) instead of (G., P. & S.). Also he failed to finish the job, by omitting to publish the new name for *Mme. Gauthier-Lièvre's* plant, which will have to be known as *A. incredibilis* (Grönbl., Prowse & Scott) Thomass. var. *valiae* Gauth.-Lièvre, when somebody gets around to publishing it. As I have mentioned before, her plant is not identical with the one from Lake Ambadi in the Sudan (though she seems to think so), but differs enough to make it a new variety but not a new species. You did not say what Papenfuss objects to in your listing, so I cannot comment on it, but as far as I can see it is correct.

A couple of months ago Grönblad told me that he had received a new book on desmids from Kossinskaja, so immediately I wrote to her asking her to send me a copy, and it arrived a few days ago. It is a large book, about 7" x 10" with more than 700 pp, cloth-bound, published by the Botanical Institute V. L. Komarov of the Akademii Nauk USSR in Leningrad. The price is 40 rubles 70 kopeks up to Dec 31 1960, and after that 4 rubles 07 kopeks in the recently revalued rubles, or a little more than \$10.00 plus about \$1.50 postage. I have not received an invoice, and I take it to be a complimentary copy, as she has inscribed my name. It covers the genera *Penium* through *Micrassterias*, plus a lengthy introduction dealing with morphology, cytology, cell-division, zygotes, crystals, etc. A large part of the text figures, and many of the plate illustrations are copied from West & West's and Krieger's monographs, to whom she is careful to give credit. But since she was not limited by cost considerations she has been able to give many additional illustrations of her own, and others copied from Russian authors. It is surprising that her bibliography lists so few papers by American authors, and I wonder if all those that I have sent her during the last 10 or 12 years have reached her. You are represented by two listings; Prescott & Magnotta 1935, and Prescott & Scott 1945 (*Euastrum* I). Two of Hannah's papers are listed. I forgot to mention the title of the book. In Latin it is "Flora plantarum cryptogamarum SSSR. Vol. 5. Desmidiiales, Facs. I".

No doubt you and Tess are going away for the holidays as usual, so I will not send the drawings until you return. Please write me a few lines by return mail and tell me when you will be back in East Lansing, and I will send the drawings to arrive at that time.

Best wishes to you and Tess from Edith and myself.



Dear Hannah: Sorry if I have upset your plans, but you can see how things are with Edith and me.

Dear Scott,

Aug 28/60
Hanover

Thanks for the fine long letter. I'm answering right away because I am really concerned about the N. Am. Des Flora and want to find out as much as I can about where we stand on it, since I may have a sabbatical coming up. The conference in Philadelphia was fun, but I didn't come away with any clear idea of our current progress, or future plans. My principal worry is that Jerry has so many other projects going too, and wants to drag in so much ecological stuff.

I don't see how we'll ever get it done with our present team - and if it will have much value when we do if these first figures I've seen (which I sent you) are a sample of our procedure.

I don't know just what I meant when I suggested that you and I take over the drawings except that I feel that we have a goldmine in your manuscript drawings - published and unpublished - and I feel that the choice of which illustration to use should come from you not from Jerry, or from students partially directed by him.

If we could take one genus, for example, to see how it is going to work out - take

an easy one to begin with, then get from Jerry a complete list of the N. Am. species in it, then let you and me see if we can figure ~~how~~ ~~out~~ ~~how~~ complete it is - I won't be much help there, but I think you will. Then let you select, from your figures as much as possible, the proper, typical illustration for each taxa, and fill in with figures from other american authors - or the original whenever possible, then let me take over - reduce or magnify to a reasonable scale, and ink them. That is why I thought I might profitably come south if I could get away. Then we wouldn't be taking your figures out of circulation and interfering with your work. I could maybe work from your files and make tracings without interrupting you too much. Your suggestion of living with Mrs Perine's mother sounds fine, but it is all very tenuous at the present present.

What scares me is the taxonomic job - the laborious decisions of what to call what. You are the best qualified of the 3 of us, but it is too much for one man. I am afraid Jerry will take it over, and scamp it. It is too big for me: I ~~too~~ could worry for a week just on one species - particularly one like S. anatinum after Brook is through messing with it. We can't just ignore all new ideas in Staurastrum, because we have nothing reliable to fall back on. - West V is so confused. I worry more about this than about our not covering all of the U.S.

What are your other ~~one~~ worries about the Flora?

Love to Edith - Hamel

Nov 13/60

Dear Scott,

Sorry to be so slow in answering your good letter of Oct 19. About that time my mother got very sick again. Yesterday I got her home from the hospital after another major operation (the third since she was 73 or so!). This time the doctors think that they found the trouble and she should get entirely well, but this last month has been exceptionally anxious and busy for me.

I got a flock of reprints off to your friend Förster (what sounds most interesting!) and I wrote to Kossinskaja for that recent paper (I've written before, asking for other papers, with no luck).

My knowledge of Rolf G. parallels yours. The last letter was dated Oct. 28 and says "From the next week I think my doctor will allow me to begin with a little dentistry work. I hope it will go happily".

I too have written to Prescott asking questions needing an answer, and got no reply. I think I'll try again.

Concerning X. glouosum = pulcherrimum I have only the notes in Nordst.'s Index Suppl., and no figure. I've never seen a figure or a reference to one.

Thanks for the Indonesian paper IV. I got my sabbatical, & am also applying for a grant - can't make any plans yet.

My best to you both

Hannah



I'd like this back sometime

H

Box 1070
Fairbanks, Alaska

Dear Hannah

Glad to have your letter of Aug. 2. I most certainly agree with you about our selection of drawings, but am surprised that there are so many from Krieger. I must confess that I did not check carefully through the drawings that had been taken off to see just which ones were sent you. Actually, I have used all of Scotts drawings--as many as were available and our intention was to use all of his, yours and mine in so far as possible. I shall check into this. I recall that several (perhaps many) times we used a drawing from another source (from the iconograph) because it was a proper and feasible scale--whereas some of Scotts drawings, if put through my drawing apparatus would have come out completely unwieldy and gigantic. I think we can redraw any from Krieger if we have them ourselves. I am disturbed that there are so many from Krieger that you had come to the conclusion that we were copying Krieger. I am sure that Scott will agree--and I most certainly do. We want this to be an 'American' work and not a re-do of Krieger. I think that where Krieger or someone else in the iconograph has a better figure than any we have we could or should use it.

The Sabbatical sounds good. Perish the thought that you should spend it on the desmid flora. You should get away for a complete change of scenery and occupation--at least for most of the time. But if you are going to spend any time at all on the flora--it will be with the drawings that you could be of the most help--that or on some of the literature. I am planning now on having a short leave for a concentrated go at the library of the British Museum (or perhaps N. Y. Botanical)--taking all our desmid bibliography along and sitting down for a complete check. This will be necessary, not only for the N. A. survey but also for a publication of some form of a 'Nordstedt Index' which we have had in mind.

Collecting is good here--many queer and interesting critters showing--but nothing of special interest in the way of desmids. Whereas there are desmid habitats and collections 'rich' in numbers, the species are very scant, and as I have noted before the combination runs strongly to a Cosmarium-Closterium sort of an association--now and then a Euastrum and a decrepit Pleurotaenium; rarely a half a Micrasterias cell.

Best regards till later. Please write again soon. Cordially-

DARTMOUTH COLLEGE
DEPARTMENT OF ZOOLOGY
HANOVER · NEW HAMPSHIRE

3 April 1961

Dear Scott,

It is a month since you wrote me your nice letter. I am sorry that I let so much time go by before answering it. It is wonderful news that Edith is almost completely recovered, I hope that she continues to improve and that you can have some time now free from worry and sickness. - with spring coming and all. Spring must be well along with you. We got more snow yesterday, on top of one hopeful crocus in bloom.

I have not heard from Jerry for a long while, but he told me that you were sending him all your desmid drawings and he did not quite know how to proceed, and he would be glad if I came to Michigan. Well, I have just heard that I got my grant, which would pay expenses for the trip, but I don't want to go yet - not until he is organized and I know that my time would be spent efficiently. You know how hectic he is, and how crowded his office. Right now he is in the midst of preparing an Index for the Trans. Amer. Micr. Soc. and I don't think any useful work can be done on the Desmid Flora until the Index is out of the way. I asked him to send me one genus - all drawings to date, and let me work it through my files and see how complete it seemed, and how much of a job to organize the drawings of assorted sizes and sources into one plate (I didn't spell it out to him like this - I just said send me one genus and let me see where we stand) but I have not heard from him. Probably the Index will keep him busy for the rest of the school year and then he will go off to teach summer school, crowding in a field trip or two. I wish to heaven he would just take a summer off and sit down and organize!

Now that I have grant-money to spend I am going to try to get as good a microscope-camera-lucida set up as good as yours. I have treasured the letter you sent me about it long ago (April 1952) and have as close an imitation to it as I could achieve with no special funds or permanent equipment, but now I can "go to town". So I have a few questions:

You say your scope is a Spencer Research Model 5 LXE with apochromatic objectives and compensating eyepieces.. but you "could improve on it in a dozen ways". Could you tell me what these ways are: something that I could show a representative from American Optical Co., for example.

You describe your lamp as a Leitz Monla, 6 volt, run from a transformer controlled by a rheostat, which you have fitted with an iris diaphragm. I shall ask for just this un-

less you have anything further to add.

My camera lucida has never been satisfactory - I think the prism is cock-eyed, but a repair man could not fix it, so I think I should buy a new one. Have you any suggestions?

Also I very much want, especially for the Desmid Flora and Teiling's proposed *Staurodesmus* monograph for which I am supposed to be making the drawings, a good enlarger for drawings - one that will reduce them also. The department has an old one which I have always used but it distorts on the edges and has only a limited range with good focus.

If I ever get all this good apparatus it will seem too good to be true, but I am going to aim for it. The kind of grant I have is one that goes through the College, and they told me to plan to buy a lot of apparatus, which of course then belongs to the College, not me, but which I may have sole use of while I have my grant - and probably always since no one else here does this kind of work and anyway there is an unwritten code here that what one gets on his grant money is his as long as he needs it.

All these questions I have asked will be a nuisance to you to answer, I am afraid, but there is no hurry; since I do not get my hands on the money until July, I would probably not be buying anything until June. Microscope men usually come around in late May. And if you don't feel like answering the questions at all just skip it - I will work from your letter of 1952.

Thanks for telling me about Tarnogradsky. I have sent him my papers and asked for his.

Madame Kossinskaja did send me her book

In my Alaskan material, especially from the west coast I keep finding things known so far only from Russia and Japan so I need to get my hands on all the papers I can. The Russian ~~of~~ journals particularly are so hard to come by.

**

Mother and I are pretty well, considering. I am somewhat crippled with arthritis, accentuated in my hips from flat arches from these blame concrete floors, and Mother's digestive system has never quite straightened out, but still we can keep up with our "age-groups" Mother fell half way down the cellar stairs last week, landing on her head on the concrete, but she only got a bump on her head and a black eye - nothing broken, which we consider very lucky. She will be eighty this month.

I do hope that you are both well,

My love to Edith,

Harvard

April 12 1961

Dear Hannah,

I'm glad to hear that you have obtained your grant, and would like to know what its purpose is, if you don't mind telling me. I don't quite see why you should spend part of it on a trip to Michigan; it seems that this expense ought to come out of Jerry's grant for the North American Desmid-Flora, which must be a pretty large one. The last I heard from him was a short note dated Feb 7, acknowledging receipt of my five boxes of drawings, containing (I guess) some 5000 or 6000 sheets. As usual he was up to his ears in work, but he has been that way during all the 20 years that I have known him. In the Bull. A.I.B.S. there was a note that he is going to teach a summer class in Idaho, as usual, or maybe it is Montana.

The only camera lucida that I have seen is the Spencer that I have been using since about 1939. There is not much that can go wrong with it, except the semi-transparent silversing on the diagonal of the cubic prism, which deteriorates with age. You could send the instrument (less mirror and mirror bar) to the makers and have them fit a new prism, and this would not be very expensive. I have frequently removed my prism to clean all the surfaces, but it is rather a tricky job unless you have some skill with tools. My prism is held in place by two sharply pointed setscrews bearing directly on the glass, an excellent device for breaking the glass, and I managed to do this on one occasion, and had to buy a new prism. It was a long time ago, and I have forgotten what it cost, about \$6 or \$8 I believe.

I have sent you a batch of microscope catalogues that I have collected since World War II. You may keep all of them, for I shall never buy another scope. Some are out of date, but there is a lot of useful information in them. Particularly I would call attention to the accessories in R. & J. Beck's catalogue, many of which are not sold in this country as far as I know.

The Leitz Monla lamp is extinct, but you might pick up one second-hand somewhere. It has been very satisfactory, my only objection is that it uses a 6-volt 5-amp bulb with a special screw base that is not easy to find, and I had to buy them from Leitz in New York at a high price. General Electric makes them, but they will not sell less than a dozen of them, and I could not find any dealer in New Orleans who would sell them singly. I believe the bulbs could be obtained from a firm that specializes in microscope supplies, like Palo-Myers in New York. Probably there are better lamps on the market now, but whichever you buy I would strongly recommend one that uses a low voltage bulb, with a variable transformer. There must be a centering device for the bulb; a focussing device; and an iris diaphragm on the lamp. When the lamp and sub-stage condenser are focussed so that the grain of the ground glass in the lamp appears in the field of the microscope, then by closing the iris diaphragm on the lamp you can control the size of the illuminated circle in the scope field, and thus limit the illumination to one desmid only, the remainder of the field remaining dark.

When we were in Philadelphia last year, Jerry's son-in-law, Mr. Burgh, told me that the American Optical Co. had discontinued their Spencer #3 and #5 research scopes, but he did not tell me and I do not know what they are offering instead. So the "improvements" are now past history. My principal objections were the insufficient rigidity of the large rotating stage, which would deflect under a slight pressure so that the object under observation was depressed out of focus, sometimes entirely out of vision when using a high power; also the extremely short shaft on which the sub-stage mirror fork rotates, so that the mirror would not stay put, but required continual adjustment to keep the beam of light from the condenser centered in the field, which is especially important with an achromatic condenser and apochromatic objectives.

After using apochromats for the last 13 or 14 years I have come to the conclusion that for work on desmids and other algae their advantages are not sufficient to outweigh their disadvantages. I list them as follows:

Advantages.

Apochromats give sharper definition, so that higher power eyepieces can be used. I have regularly used 20x eyepieces, and perhaps 25x could be used occasionally. Jerry bought a 30x eyepiece, but found that the definition was so poor that the eyepiece was useless.

Apochromats will resolve finer detail because of their higher numerical aperture (N.A.), but all conditions of centering and illumination must be exactly right, and there are few users who will go to the trouble of studying the theory and practical adjustment of their scopes to attain this.

Disadvantages.

Apochromats are much more expensive.

Their working distance (air space between the nose of the objective and the cover glass) is only a small fraction of a millimeter in the high powers, 44x and 60x, (dry). Thus with a deep cell such as is necessary for the manipulation of large desmids the objective will not focus to the bottom of the cell. Or if a grain of sand is included in the material it frequently tilts the cover glass so that the nose of the objective comes in contact with the cover glass, disturbing the object under observation, and failing to focus properly.

They are very sensitive to the thickness of the mount and thickness of cover glass. To compensate for varying thicknesses the apochromats (44x and 60x dry) are provided with correction collars which must be rotated until the best definition is obtained. This is a nuisance, and it is frequently difficult to determine when the point of best definition is attained.

Therefore I conclude that apochromats are more suited for medical work with blood smears, bacteria, and thin microtome sections than for our work:

If I were going to buy a new microscope I would carefully study the Leitz and Zeiss catalogs and examine some of their instruments if any were available. I believe that their designs are more advanced than our American ones, though there is probably no difference in the optical qualities. Zeiss makes, or used to make, a 90x achromatic water immersion objective of about 1.30 N.A. I have never seen one but I think it would be very useful, and quite convenient to merely place a drop of distilled water on the cover glass and another drop between the condenser and the under surface of the slide. Some people don't know that the immersion liquid must be used between the condenser and the slide; if this is not done the N.A. of the objective is limited to 1.00, which is the refractive index of air, and therefore the objective is not working to its full power. It would not be practicable to use this Zeiss lens on a scope of a different make, for almost certainly it would not be parfocal with the other objectives, though perhaps a skilled repair man could make it parfocal. For my old Leitz scope I bought a second-hand Leitz 65x dry apochromat that proved to be not quite parfocal with the others. Fortunately the mount was a trifle too short rather than too long, and I was able to adjust it to parfocality with a special washer that I cut from brass shim stock .005" thick. Even this was too thick, and I had to thin it down by working on it with very fine carborundum cloth. If the mount had been too long it would have been necessary to put it in a lathe and turn off about .003" or .004" from the shoulder below the threads, and I would have been scared to try it for my lathe is not sufficiently accurate.

About 1956 the American Optical Co. brought out a new line of scopes that they call "Microstar", and I have sent you their catalog. This line apparently replaces their former medical or laboratory instruments, not the research type. The Microstars have some good features, and some that are not so good, as follows:

- 1). The ocular tubes are convergent, unsuitable for the camera lucida. Perhaps they will furnish parallel tubes if requested, as they did with the research models.
- 2). Ocular tubes are inclined at 45° instead of the usual 60° with the horizontal. This would cause an apparent rotation of the camera lucida drawing of 45° instead of 30°, probably not too bad after you get used to it. Further, the height of the eyepoint above the table would be decreased, and I think the whole scope would

have to be raised 1" or 2" above the table on blocks, or else the operator's seat would need to be lowered the same amount.

- 3). When using my scope I rest my chin on the upper part of the curved arm, a great assistance in keeping the head steady and the eyes in the correct position. This could not be done with the Microstar, and I believe this would impose a severe strain on the muscles of the back and neck and eyes. The black enamel on my scope was non-resistant to perspiration, and literally disintegrated after some months use, exposing the brass casting underneath. I then cut and fitted a sheet aluminum shield where my chin rested, and the aluminum shows only a slight discoloration after at least 12 years use.
- 4). The various eyepieces project by varying amounts from the end of the ocular tubes, particularly the wide-field eyepieces. This would involve trouble with the clamp of the camera lucida, that might be insuperable. I have had trouble from this, because I am using some B & L eyepieces as well as Spencer. One pair of 12x B & L eyepieces require the camera lucida prism to be set almost in contact with the eyepiece, while the 15x Spencer eyepieces require the prism to be raised by more than 1/4", otherwise the field of view is greatly reduced.
- 5). They do not offer a 60x dry objective, which I regard as necessary; in fact this was one of the principal reasons why I selected the Spencer #5 research scope.
- 6). With the high dry objectives it is better to use K semi-compensating eyepieces, which give somewhat better definition. These are known by various trade-names such as "Perinlan", etc., and I did not see them listed.
- 7). They do not offer a rotating stage; not absolutely necessary, but a great convenience, for with it you can quickly and easily turn a desmid to the most favorable position for drawing, and for aligning the desmid with the edges of the drawing paper.
- 8). The low position of the fine adjustment is good, and I would not buy any scope that does not have this.
- 9). Both knobs controlling the mechanical stage are on the same shaft, or rather on concentric shafts. This would be strange to me, but I suppose you can get used to it. Spencer used to offer a mechanical stage with control knobs on both the right and left sides of the scope, which is frequently a convenience. You should enquire about this. The knobs themselves are too small, about 3/4" diameter, 1" would be much better, and this is especially noticeable when you are trying to line up one edge of an object with a graduation of the eyepiece micrometer, requiring a movement of only one or two microns, and on a cold day when the stage moves stiffly. I made larger knobs for my scope, but it was a tricky job, because they fit on to tapered shafts, and I had to buy a special taper reamer for the holes in the knobs.
- 10). The self-contained illumination system in the base of one of the Microstar models looks attractive. It uses a low-voltage prefocussed bulb with a variable transformer, just what I recommend. But I would want to satisfy myself that the bulbs are accurately centered as well as prefocussed. To do this I would set up the scope for Kohler illumination, then close the lamp diaphragm to give a small circle of centered light in the field of view. Then without disturbing the set-up I would remove the bulb and try several others to see whether the circle of light remains centered with all of them. Apparently no centering device for the bulb is provided.
- 11). The first-surface mirror is probably aluminized by the vacuum evaporation process. The aluminum coating should also be protected with an evaporated film of silicon monoxide or dioxide. Alternatively you might get a rhodium coated mirror like mine, which does not tarnish, and you can simply wipe off the dust without scratching.
- 12). They seem to offer only a 2-lens Abbe condenser, the cheapest one made. I would want something better than this; not less than a 3-lens Abbe, and preferably an achromatic condenser of 1.30 N.A.

I think you will have trouble in finding an opaque projector that will reduce as well as enlarge, and particularly if you have in mind one that will reduce the very large drawings that you sent me some months ago. I don't think such a machine is made; if it is it would be very expensive. I am sending you a catalog of the Edmund Scientific Co., Barrington, N.J. On p. 105 there is an enlarger selling for \$42.00 postpaid, that will handle copy up to 6" x 6". It seems to be a commercial version of the make-it-yourself enlarger of which a small drawing is shown on p. 57 in the lower left corner. It uses the same surplus lenses, so I assume the commercial

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4.

projector will enlarge from a minimum of 2x to a maximum of 15x. For the comparatively small enlargements that you would need, it would not be necessary to use two 200-watt bulbs; probably two 75-watt would be enough. By mounting the lenses in a longer barrel you could probably get the minimum enlargement down to about 1-3/4x or 1 1/2x. This machine could be converted into a reducer by making a new lens system, using two plano-concave or meniscus-concave surplus lenses, mounted in ~~xxx~~ another barrel of the same diameter, but it still would not handle copy larger than 6" x 8"

I think your best bet for reducing is a pantograph, and I am enclosing a page from a catalog of the Lafayette Radio Co., 110 Federal St., Boston 10, Mass. Their mail-order address is 165-08 Liberty Ave., Jamaica 33, N.Y. They show a wooden pantograph at \$3.75 plus postage and insurance on 2 lbs. I have one quite similar to this, and it will enlarge or reduce in any ratio from 1-1/8X to 8X. I have frequently used it to reduce one of my drawings that was slightly too large to fit in a given space on a plate. Because of the friction in the joints, and the dragging of the support and tracing point on the drawing surface, it is impossible to draw a smooth line with it; the lines are jagged, and require to be "faired up" afterwards, but this is quite easy. You can buy more expensive pantographs from firms like Eugene Dietzgen & Co.; they are made of metal and require a permanent installation, and the price probably runs into hundreds of dollars. Any concern that handles architect's supplies can show you pictures in the Dietzgen catalog.

For some time I have been turning over in my mind the question of whether or not I should sell my research microscope. The reason is that for the last year or more Edith has been worrying me to sell our big house and move to an apartment with elevator service, air-conditioning, etc., where she would have fewer rooms to take care of. It is getting harder and harder for both of us to climb our stairs, even though there are only 12 steps. Eventually we shall have to make such a move, as I quite realize, but it would mean a complete end to my desmid work, for my "laboratory" now occupies all of the space in a room larger than the average living room, and any apartment that we could afford to rent certainly would not have enough space for this. Anyway, my desmid work is nearing its end, for I no longer have the energy nor ambition nor even much desire to continue. However, there are two lots of material that I ought to finish and publish, from Brazil and Australia, both with many new taxa.

I have thought that the most likely places to dispose of this scope would be the research departments of our two large medical schools, Tulane and L.S.U. But if you would consider buying it, here's the dope. I was under the impression that I bought it about 1947 or 1948, but on looking up the records I find it was delivered to me on Aug 29 1949. The cost was \$1382.26, plus \$5.67 for a cylindrical transparent plastic bell jar. Since then I have bought two more low power objectives, 3.5x and 5x, and there is another 3.7x that I made myself using a cemented triple anastigmat lens, also the pair of 12.5x B & L eyepieces. The total cost therefore is about \$1450.00, and I expect that a scope of this quality would cost today more than \$2000.00. Wherever it winds up after I am gone I believe it will still be in use 25 years from now, maybe longer, so I figure that less than one-third of its useful life has been passed. So I think I ought to get not less than \$1000.00 for it, not including the Monla lamp nor the camera lucida, because I would have to retain these for use with my old Leitz scope for the work mentioned above. It is in excellent optical and mechanical condition, the only sign of wear is in the black enamel finish, which is marred in a few places that could be easily touched up. It looks just like the picture that I marked in the instruction book by Oscar W. Richards, except that it has a triple nosepiece instead of quadruple; I ordered it that way. If you would consider buying it at that price I will send a complete list of what is included.

Edith is almost back to normal again; my health is not too good, and there is no hope for much improvement. Sorry to hear about your arthritis, and your mother's fall which could have been quite serious. But what is an old lady of her age doing on the cellar steps? You ought to lock the door so she can't go down there.

Best regards from both of us.

March 3 1961

Dear Hannah,

I am very glad to say that Edith has now almost completely recovered from the illness that sent her to the hospital in January, though she has not yet regained all her strength. A couple of days ago I took her downtown for the first time, to buy a pair of sensible, old lady's shoes, which have to be fitted with a correcting pad underneath the sole. I hope these will give her more comfort and enable her to walk more steadily.

I sent Jerry five boxes containing all my drawings of USA desmids, and had a note from him saying that you expected to go to East Lansing sometime this Spring. If you need any more information about the drawings don't hesitate to ask for it. I have a typewritten list of all of the habitats from which they were collected, but probably this would not be of much use for the Desmid-Flora, because you will not be able to mention any more than the State, which is shown on the drawings.

Last week I received a surprise package containing four papers on desmids from

Prof. D. A. Tarnogradsky,
Ossetie du Nord,
Ordjonikidze,
Tiflisgawsk, Par. 3,
U.S.S.R.

I have seen his name listed in the bibliography of Kossinskaja's works, but this is the first I have seen of his work. His drawings are good, but seem to have suffered in reproduction, and in one of the papers there are some half-tone reproductions of photographs of the habitats that are so wretchedly poor that I am sure he must be ashamed of the photo-engraver. The text is in Russian, but the botanical names and references are in Roman type. Three of the papers are from "Travaux de la Station Biologique du Caucase du Nord", published at Ordjonikidze; the fourth is from "Notulae Systematicae e Section Cryptogamica Instituti Botanici nomine V. L. Komarovii", at Leningrad. I won't attempt to copy the Russian names of the journals. He has a few new taxa, and strangely enough, one of them which he calls Staurastrum ibericum sp. nov., seems to be almost identical with the 5-radiate version of St. fueillebornei var. evolutum Grönbl. & Scott, from the Sudan.

If you have not seen these papers I'll gladly lend them, and I would suggest that you send him some of your reprints with a typewritten note asking for an exchange. Did you receive the big book of Kossinakaja's?

Best regards from Edith and myself.

Dear Scott,

Jan 15
H.B.L.
Woods Hole
Mass

Thanks for the copy of
your letter to Jerry. I do like to be up
on the news of you, even when it is bad.
What a sad time you are having!

I do hope that Edith is now home
from the hospital and things are
better.

I've been down here for about 10 days,
checking references in my current paper
and going through ~~other journals~~ ^{of possible interest} for
of possible interest for my iconograph -
relatively poor pickings, which is good,
I guess, implying that more authors
are sending me reprints.

Jerry is sending me all his library cards
on N. Am desmid literature for me to check
references for our Desmid Flora. It sounds like
a big job. I wish it would arrive (sent over
a week ago.)

The weather has been relatively nice but
tonight a good old "northeaster" is raging (you
wouldn't like it!)

I'll hope to hear more, better news from
you soon.

My love to Edith

Hannah

HANNAH CROSDALE
77 SOUTH MAIN STREET
HANOVER, N. H.

Sept. 24

Dear Edith,

Thanks for the note.
I was so glad to get it, and
to learn that you and Scott
are both better. I shall pass
the word along to our Euro-
pean friends: $\text{\textcircled{3}}$ Grönblad and
Teeling, who keep asking. I
suppose Jerry Prescott knows
because ~~he~~ ~~keeps~~ ~~in~~ ~~better~~
touch with you than I do.
I can't keep in touch with him.

I am sorry that you have been so dreadfully ill. How miserable and worrying for both of you, but glad that you are really better now, with your head clear. I hope that means no more digginess.

I hope that Scott is well enough to be doing some work on desmids again. The desmid world needs him so. I do wish you lived nearer to us so that I could consult with him occasionally, and so that you and mother could meet.

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~~Thanks again for writing.~~
I am so glad that you are both better.

Affectionately

Hannah

HANNAH CROSDALE
77 SOUTH MAIN ST.
HANOVER, N. H.

Sept 6/60

Dear Scott,

The drawings arrived safely.
Thanks a lot! Sorry to bother you
about looking for them while you
don't feel well. Maybe the
coming cooler weather will help.

I'll make tracings as fast as
I can and return them to you.
Unfortunately my very nice sister-
in-law has to have an operation,
and mother and I are driving down
to Philadelphia tomorrow to see her through
it. I am taking your figures
along with me and will hope to

be able to put in a couple
of hours a day at least, on
them. I'll mail them back
soon after I return to Hanover
on the 15th.

I wrote to Jerry asking for
some definite word on future
plans for the N. Am. Desmid
project. I hope he answers.
I wonder where he is now?

The more I try to use that
last big Brook (A.J.) paper on
Staurastrum the worse I think it
is! Too bad, I thought it might be
very useful. I think Thomasson is
much sounder.

I haven't heard from Teeling for
ages! Hope you and Edith are well
Best wishes. Hannibal

Sept 20

Dear Scott,

Here are all the mss. figs.
Thanks very much. I copied almost
everything, in case we need it
later, so as not to bother you about
these again.

I wrote to Jerry about 2 weeks ago
asking him a lot of pertinent questions
about copying figures, but I have not
had an answer.

I heard from Telling a few days
ago, after a long silence - he said he
had not been able to work for a long
time due to "a bit of a mental shock"
because of his upset life lately. He
seems to be coming back into action
slowly.

Hope the cooler weather is
helping you and Edith.
My sister-in-law seemed to come
through her operation successfully
Best wishes
Harvard

AEROGramME

By Air Mail · Par Avion

BRISBANE
QLD. AUSTR.
4 15PM
5 9 SEP 5
1960
POSTED IN
COUNTRY BOX



Dr. A.M. Scott,

2824 Dante Street,

New Orleans, 18, La.,

U.S.A.

FIRST FOLD HERE

SECOND FOLD HERE

SENDER'S NAME AND ADDRESS.

Dr. A.E. Crisp,

Dept. of Botany,

University of Queensland,

George Street, Brisbane. AUSTRALIA.

NO TAPE OR STICKER MAY BE ATTACHED.

IF ANYTHING IS ENCLOSED AEROGramME WILL BE SENT BY ORDINARY MAIL.

Digitized by Hunt Institute for Botanical Documentation



University of Queensland

George Street,

ST. LUCA, BRISBANE

Department of Botany

8th September, 1960.

Dr. A.M. Scott,
2824 Dante Street,
New Orleans 18, La.,
U.S.A.

Dear Dr. Scott,

Many thanks for your letter. I'm glad the desmids were of some use, and I shall try to make some more collections.

There probably won't be much chance for a while of getting samples from the northern part of Queensland, but it may be possible to get some from New Guinea. I have a brother who is a missionary on the delta region east of the Fly River in Papua, and he may be able to collect something. He is in an area of brackish swamp forest, but from time to time visits freshwater areas. Anyway I'll certainly ask him to see what he can do.

With best wishes,

Yours sincerely,

A. B. Cribb

A.B. Cribb,
Lecturer in Botany

Aug 26 1960

Notes on drawings for N. American Desmid-Flora sent by Hannah Crossdale.

1935,

Euastridium verrucosum was described by N. Carter from British Columbia, and therefore belongs in the Flora if it is to include Canadian forms. Prescott also has it from Oregon, sub St. polonicum Racib. var. coronulatum v. nov., Pap. Mich. Acad. Sci. XXI (1935) 1936. In an addendum to this paper he promised to discuss in a future paper his reasons for preferring to retain the plant in Staurastrum, but so far as I know he has never done so. I believe that at the Philadelphia meeting we agreed to retain the genus Euastridium. I prefer to keep it, because of the Euastridium staurastrum which I have seen from Indonesia, which combines certain features of both Euastrum and Staurastrum, but also differs from both of them.

Euastrum ampullaceum fa. scrobiculata. I do not have Borge's 1906 paper, nor that of Nordstedt 1873, so I don't know why the form name was given. Krieger lists this form as a synonym of the species, and I agree. My 1945 illustration does not show any scrobiculae except the three large "mucus-pores" as Prescott calls them, and to this extent is inaccurate. I have just examined material from my collection Fla. #47, in which ampullaceum is common, and find that in specimens retaining the chloroplast the scrobiculae are difficult to see, but in empty ones easy, though not so prominent as in some other Euastra of this type, e.g., oblongum, ventricosum, affine, humerosum, etc. They occur on the lower and upper lateral lobes, the polar lobules, and the neck under the polar lobe; they diminish in size and visibility towards the center of the face, which seems to be free of pits except the three large pores. Ralfs 1848 described the wall as "punctated", but he applied the same word to all Euastra of this type: his illustration shows tiny circles all over the face.

Micrasterias papillifera var. novae-scotiae. I have drawings of the species, but have never seen this variety.

Micrasterias turneri. I have not seen the specific form. The only drawing I have is of M. sol var. murrari fa. elegantior, published in Presc. & Scott 1952.

Micrasterias mahabuleshwariensis var. europaea. All my forms of M. mahab--- were published in Presc. & Scott 1952. There is nothing that quite corresponds with Bourrelly's figure.

Micrasterias americana var. ~~spinosum~~ spinosa. I do not have this. Krieger lists it as a synonym of the species. Though I hesitate to say that anything is impossible in desmids, I am sceptical about the arc of verrucae across the polar lobe. I would not reproduce this drawing of Turner's.

Micrasterias brachyptera. I do not have this. I saw something very close to it in some Finnish material that Grönblad sent me a few years ago, but did not draw it.

Euastrum oblongum var. cephalophorum. Krieger lists this variety as synonymous with the species, including Prescott's 1935 illustration, Pl. 325, Fig. 1. I do not think the difference from the species is sufficient to establish a separate variety; it seems no more than the normal variation in any of the large desmids. Oblongum is rather rare in SE USA, and I have only a few drawings of it, and nothing quite corresponding with your large drawing from West & West.

After the above was written I found a sketch of a specimen of oblongum from my collection Georgia #8, which is similar to W & W's illustration of var. cephalophorum, but as you will see from my other drawings of oblongum, there are intergrading forms between this and the specific form

July August 19 1960

Dear Hannah,

Your package of photocoopies postmarked Aug 1st arrived here on the 17th, taking 16 days in transit, which must be something like a record I should think. I am very greatly obliged to you for the trouble you have taken in making them. The small papers by Schmidle and Moebius are of not much use because they contain so few desmids, and if any of the others that I asked for are of a similar nature there is no need to copy them. Nor do you need to copy Carter's papers on Chloroplasts. Maskell's New Zealand papers are good and the illustrations excellent for the era in which he wrote.

The more I hear and see and hear about the N. American Desmid-Flora, the more I don't like the way it is developing. Certainly there is no need to copy Krieger, as you have said, for various reasons. A large proportion of his illustrations were necessarily copied from other authors, and though he undoubtedly picked the best available, there are many that you and I can recognize as poor or incorrect. Further I believe he had little experience with actual American material. He once asked me to send him material containing as many as possible of a list of Cosmaria that he gave, so that he could draw his own pictures from life, instead of relying on other authors, and I was able to comply in most instances. One exception that I remember was Cosm. cloiseanum Wille, but I asked E.O. Hughes to send Krieger some specimens, which he did, and also sent me a slide of them. Again, American desmids frequently differ in various ways from European specimens of the same species, which is another reason for using American authors' drawings.

Some years ago I asked Jerry just what countries were to be included in the Flora, and if I remember correctly he told me that "North America" would include Mexico, but nothing south of there; the U.S.A. with Alaska; and Canada with Newfoundland. There are few records from Mexico, and Jerry never told me whether he found any desmids on his trip to the Cañon del Cobre a few years ago. In my own collecting I have covered Louisiana and Mississippi pretty thoroughly; Alabama has few good desmid habitats that I could find; in Florida I have covered the entire State, North to South and East to West, over all of the main highways and many of the secondary ones; also I have a few collections from the southeastern corners of Georgia and S. Carolina. All told I have more than 3000 sheets of drawings, and though I have never counted the number of taxa, I guess that it would total 800 or more, of which less than half have been published, and Jerry has ~~not seen~~ seen only a few of the others. All of them have been identified by Grönblad and myself during the 3 weeks that I spent in Karis, and in some instances Grönblad's identifications differ from Prescott's, with good reasons I believe. The unpublished ones are all known taxa, but many of them are rare, and some are probably new records, either for USA or for N. America.

Aug 25.

Several things combined to prevent me from finishing this letter which was started on Aug 19th.

The drawings that you sent me are, of course, far too large, and I hope that by this time Jerry's son-in-law, Mr. Burgh, has obtained for him the new projection lens that he told me about in Philadelphia. It will magnify 3x instead of 5x, but what is really needed is a lens in a sliding barrel, so that it will give intermediate magnifications. The scale that you mention of 1 micron = 1.6 mm (not 16 mm), or a magnification of 1600, is what I have used since about 1946 or 47, after I bought the new binocular scope, but only for desmids with longest dimension of about 100 u. For larger specimens, such as the large Microsterias, and the long Closterias and Pleurotaenia, I have used various combinations of ocular and objective, to give

drawings that would approximately fill my standard sheets, 7" x 8 $\frac{1}{2}$ ". Previous to 1946, and this includes the majority of my USA drawings, I used smaller scales, with not much system; just anything that seemed appropriate.

I think that all my USA *Micrasterias* have been published, and almost ~~ex~~ all of the *Euastra*, in the papers by Presc. & Scott, or Scott & Presc., 1942, 43, 1945, 52a and 52b, or in Scott & Grönl. 1957, so unless you can find illustrations in those papers of the taxa that you want there is little chance ~~of~~ of finding them among my batches of drawings. Of course we selected typical forms for illustrating, and I have many drawings showing smaller or larger variations from the typical, but not sufficient for creating new taxa. But these would not be suitable for the Flora, where it will be necessary to stick to typical forms. I have some of the *Micrasterias* and *Euastra* shown in your large drawings, and in the next few days I will pick them out and send them to you. In the genera other than *Micrasterias* and *Euastrum* few of my drawings have been published, and it is in these other genera that my camera lucida drawings will be most helpful.

If you have to copy any of Krieger's illustrations, don't forget that his copying process, whatever it may have been, resulted in a right to left reversal of the original. This is of importance in asymmetric desmids like *M. mahabuleshwariensis*, *Penium spirostriolatum*, etc.

As to your suggestion that you and I take over the preparation of drawings, I am not clear as to what this would involve on my part. Of course I am only too willing and anxious to assist in every way possible, so I would like you to explain in detail. At the same time, I do not want to promise something that I may not be able to deliver. In this connection there are some facts that you ought to know. Some two or three months ago my doctor said, in reply to my question, that his estimate of my life expectancy was "about two years", though he added that I could fool him by living another five years, or by dropping dead just outside his door. The reason is that my heart and lungs are in such poor shape that the ~~least~~ least physical exertion makes me "out of breath"; I cannot walk more than two blocks without stopping to rest. I have ailments of other internal organs that are the natural concomitants of old age, and though they are less serious they are nonetheless annoying. All of my adult life I have a propensity for putting off until tomorrow (or next week) that which ought to be done today; but during the last two or three years I have declined into such a state of mental lethargy that I do not seem to have the ambition or energy to do any work at all, even on my beloved desmids, or to keep up with my correspondence. The doctor says that this mental state is tied in with my poor physical condition, and that there is nothing he can do to help it. I suggested it might be due to hypothyroidism, and he half-way agreed, but said that he could not prescribe thyroid extract for me because it would speed up my metabolism and thus put an extra load on my already weakened heart. So--- I don't know what is going to happen.

I am not telling you all this as an alibi, but simply that you may know the conditions here. Assuming that I have another two or three years to live, here is what I ought to do:

1. Write up all my unpublished desmids, of which there are several hundred taxa. Even if I merely list the well-known ones, there are many rare species, and variations that ought to be illustrated. Just how I can do this if I have to send my drawings to Jerry or to you, I do not know.
2. Write a paper on the desmids on a large series of Brazilian collections, with many new and rare taxa. This project is already some years overdue.
3. Write another paper on Australian desmids, from a miscellaneous lot of collections from various parts of that continent; also with many new taxa.

So please think this over and write me again, but in your letter do not mention my health, for Edith reads all your letters and she doesn't know everything that the doctor has told me.

The second batch of photocopies arrived a few days ago; many thanks for them. I wish I had seen Nordstedt's 1906 paper before I went in with Grönblad in his reply to Silva's proposal to set back the desmid starting point to 1753. Nordstedt covered nearly all of the points that we made, and my surmise seems to be true that his proposal to use Ralfs 1848 as the official starting point has been twisted around so that the wording in the present Code is not at all what he intended.

A few days ago I received a batch of desmid papers from a Japanese whom I have not heard of before. His name and address are:

Taketoshi Minode,
The First Lower Secondary School,
Muya-cho, Maruto City,
Tokushima Prefecture,
Japan.

The drawings are unusually good, better than Minoru Hirano's, and though he does not have many taxa that are not in Hirano's Desmid-Flora, the papers are well worth having. He writes that desmid literature is difficult to obtain in Japan, so please send him your reprints and include a note asking for an exchange of papers.

Just received Rolf's paper on Italian desmids; very nicely done, but it is a pity that most of them are cosmopolitan species. Also had a letter saying that his health is improving, but that he realizes he has only a few more years to live, and doubts that he can accomplish everything that remains to be done. Pretty much my own frame of mind!

Best regards from

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P.S. Edith and I would be delighted if you can come down here next winter. We cannot put you up ourselves, but you could take your meals with us, and stay with one of our close friends who lives just around the corner. She is a widow living alone in a big house with a spare bedroom, and would be glad of your company. Also she is the mother of the Mrs. Dorothy Perine who has inked my drawings for so many years.

Aug 15

Dear Scott,

Enclosed are some of the drawings of desmids which Jerry Prescott sent me to see if I could reduce them. I ~~am~~ can, and am doing so on others of the lot which are American forms, by American authors. But these are all foreign, and I don't like using them in our American flora unless absolutely necessary. I especially dislike using Krieger.

I write an indignant letter to Jerry about it, and I enclose his answer. I think he doesn't realize 1) that you have a vast lot of unpublished drawings and 2) that yours don't need to go through his copying machine. The idea of using Krieger's not yours because of magnification difficulties is absurd, anyway. Jerry has too many irons in the fire. I think it would be well if you and I took over the preparation of drawings. I am going to get a Sabbatical for the term between Christmas and Easter this year. I may not be able to get away from here because of my mother, but I might

manage to get down to you for a brief "organization
visit" and I can, probably, work nearly full-time
on the project.

I am sending you these figures to see
if you don't have usable American
versions. I am using the scale $1/4 \rightarrow 16\text{mm}$.
which seems close to the size you use.

We are having our first hot muggy weather
of the summer. I hope it is not too bad with
you.

Give my love to Edith.

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DARTMOUTH COLLEGE

∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

July 31, 1960

Dear Scott,

I was glad to hear from you, and to be given some copying to do. I have worked my way through a few of the journals (those that were in our library) and I am asking form some by interlibrary loan. So I am mailing, 4th class, a small bunch now and more will follow. I am stopping now because the fluid is dirty and changing it is a chore which I think someone else will do if I wait (one can't always be altruistic). The actual copying is quite good fun.

The ^RCater chloroplast papers are available but I am giving them a low priority because I never found anything new in them. I'm sending one as a sample. Do you really want it? The text is very wordy and maybe I have overlooked something. Have you any specific reference to something new?

Also, the Nordstedt 1893 paper seems too old to be of much use. It deals with the genera. Arthrodia (Closterium), Gyges (Cylindrocystis), Helierella, Ursinella, Prolifera, Conjugata - no figs. I won't copy it until you give me a specific reference or assurance that you want it.

Cosmarium quadratuliforme is available as far as my records go.

Cosmarium margaritaceum is nowhere to be found - probably just an error in that sloppy sloppy paper.

Staurastrum verrucicinctum would be the best form, I think, since verruciform is a good word. (My latin prof is still abroad, I'll check when he comes home and let you know for sure.

Rolf is home again. I got a letter dated July 1. He said "Of course I am still very weak and tired so I cannot do any dentistry. This month I must use for reconvalence."

Einar Teiling has remarried! He says: "I am quite dependent on a real home. To live alone the whole day and take my meals on a restaurant would kill me within a couple of years; my digestion apparatus requires six meals of fairly samll proportions.. An old friedd of Tora and me since 26 years promised to marry me and take care of me.. 10 years younger than me.. My children have been fond of my wife, Kerstin Pleijel, since long and are very glad to know th that I am in good hands, they have been very anxious for my future life." He now has a moth-in-law. He say he is in good health. I think it is fine!

Sorry that you and Edith have been sick and hope that you are all right again.

Best wishes to you both.

Harwell

Aug 15 1960

Dear Hannah,

I delayed answering your letter of July 31 pending receipt of the package that you sent by 4th class mail, but it has not arrived yet.

I asked for Nellie Carter's papers on chloroplasts thinking they would supplement Teiling's on the same subject. I did not expect to find any new species in them, but the chloroplast structure and pyrenoids are sometimes useful in determinations.

Don't copy Nordstedt 1893, but I do want his 1906 paper, to see exactly what he wrote about Ralfs 1848 as the starting point for desmid nomenclature. I am under the impression that the codeologists at the various Congresses since then have manipulated the wording of the Rules so that the 1956 version is directly the opposite of what most desmidiologists believe and want. However, neither Grönblad nor I are going to do anything more about Silva's proposal; we have agreed to just forget it and continue using Ralfs 1848 as the actual starting point.

I also have a letter from Rolf, with much the same news as he gave you. Naturally he will have to avoid exertion, and it will take some time for him to regain the energy to resume his dentistry and work on desmids. I myself am in much the same condition; I have fallen into such a state of lethargy that I seem not to have ambition to do anything, even with my beloved desmids.

The news about Teiling's remarriage is certainly surprising, but easily understandable in view of his explanation. Both of my sisters in England married for the first time late in life, when they were both over 50 years old, in each case to a widower who needed a helpmate to look after the home and children.

From J. Cramer, publisher of *Nova Hedwigia*, I have a letter reading in part:

"The first part of the manuscript of the genus *Cosmarium* compiled by Gerloff from papers of the late Dr. Krieger is at the typesetter, and I hope we can publish it late in 1960. The other parts will follow at short intervals".

Nobody has yet been selected to write up the other genera after *Cosmarium*. You probably know that Rolf was asked but had to decline, as also did Skuja. Prescott has not yet been asked. A Dr. Ettl will undertake the editorship of the *Chlorophyceae*, and will himself treat the *Volvocales* and *Tetrasporales*, and will select for the other groups specialists from all over the world.

That's all the news at present. Best regards from Edith and myself.

July 22 1960

Dear Hannah,

Well, you asked for it, and here it is; the list of desmid papers that I would like to have copied. Now don't be alarmed; I have gotten along very well without them for many years, and it doesn't matter much whether I get them or not, but I shall be grateful for whatever you can manage. I have never seen any of them, and what I hope to get from them is descriptions and illustrations of new and rare desmids from the various regions, to help in my own identifications. It is quite possible that some of the papers may not have much value from this viewpoint. Also I am interested solely in desmids, so do not bother copying pages dealing with other algae.

I have heard nothing more from Rolf, and like you I am wondering what has happened. Surely he must be back at Karis by this time, but I doubt very much that his dogger would allow him to climb up those steep stairs to his bedroom.

In a letter some months ago he suggested Cosm. quadratiforme as a substitute for the pre-empted C. sublobatiforme in our Sudan paper, and asked if you would check it for availability.

Could you also check Cosm. margaritaceum? This is mentioned in Woodhead & Tweed's Sierra Leone paper as being remarkably similar in front view to Xanth. schlotheimiae sp. nov., except for the spines (!!!) I cannot find margaritaceum in Nordstedt's index, nor in West & West, nor do I recall seeing the name anywhere else. Of course I know C. margaritatum and margaritifera.

Enclosed is a sketch of a probably new species of Staurastrum from North Australia, which I wish to name "having a belt of verucae", but I am not sure whether the Latin word would be verrucinctum, verrucinatum, verrucaeinatum, or whatever. When you write again would you offer a suggestion? There's no hurry.

Both Edith and I have been under the weather for the last two weeks. First I caught a peculiar sort of cold, then passed it on to her, and we both had to go to the doctor for this and other ailments.

Sincerely,

- Nordstedt, O. 1893. Die Behandlung einiger Süßwasseralgen, besonderes Desmidiaceen, in O. Kuntze's Revisio generum plantarum. Hedwigia 32: 147-154.
- _____ 1906. Algological Notes I. The starting point of the nomenclature of desmids. Bot. Not. 1906, 97-?
- Nygaard, G. 1926. Plankton from two lakes of the Malayan region. Vid. Medd. Dansk natur. Foren. 82. (This journal citation is from Krieger; in Prescott & Brunel it is given as Det Norske f. V.M. 82:197-240.). 8 Pl
- Maskell, W.M. 1880. Contr. towards a list of the New Zealand Desmidiaceae. Trans. New Zealand Inst. 13:297-317. 2 Pl.
- _____ 1883. On the New Zealand Desmidiaceae. Ibid. 15:239-259. 2 Pl.
- _____ 1885. On a new variety of Desmid. Ibid. 17:305.
- _____ 1888. Notes on Micbasterias americana and its varieties. Jour. Roy. Microsc. Soc. 1888; 7-10. 2 Pl.
- _____ 1889. Further notes on the Desmidiaceae of New Zealand. Trans. New Zealand Inst. 21:1-32. 6 Pl.
- Hardy, A.D. 1906. The freshwater algae of Victoria. Victoria Nat. 22:62-73, 1 Pl. 23: 18-22; 33-42.
- _____ 1913. Some algae of the Zoological Gardens, Melbourne. Ibid. 30:_____?
- Handa, N.R. 1927. A contr. to our knowledge of the green algae of Rangoon. Jour. Burma Res. Soc. 17:259-269.
- Lemmermann, E. 1905. Die Algenflora der Sandwich-Inseln. Engl. Bot. Jahrb. 34: 607-633, 2 Pl.
- Lundell, P.M. 1871. De Desmidiaceis, quae in Suecia inventae sunt, observationes criticae. Nov. Act. Reg. Soc. Sci. Upsala, Ser. 3, Vol. 8. 100 pp, 5 Pl.
- Möbius, M. 1894. Australische Süßwasseralgen II. Abh. Senckenberg. Naturf. Ges. 18:310-350. 2 Pl.
- _____ 1895. Ueber einige brasilianische Algen. Hedwigia 34: 173-180, 2 Pl.
- Carter, N. 1919/20. Studies on the chloroplasts of desmids.
 I. Ann. Bot. 33:215-254, 5 Pl. 1 Fig.
 II. " " 33:295-303, 2 Pl. 1 Fig.
 III. " " 34:265-284, 4 Pl. 2 Fig.
 IV. " " 34:303-319, 3 Pl.
- § _____ 1922. Freshwater algae, In: A systematic account of the plants collected in New Caledonia and the Isle of Pines by M.R.H. Campton. Jour. Linn. Soc. Bot. 46:47-68, 4 Pl.
- _____ 1926. Freshwater algae from India. Records Bot. Surv. of India, 9:263-302, 2 Pl
- _____ 1935. Alpine desmids from British Columbia. Jour. Linn. Soc. Bot. 50:151-174.
- West, G.S. 1914. A contribution to our knowledge of the freshwater algae of Colombia. In: Fuhrman, O., & Mayer, E., Voyage d'exploration scientifique en Colombia; Neuchatel, Attinger Freres, 5:1013-1051, 3 Pl.
- Schmidle, W. 1900. Ueber einige von Prof. Hansgirg in Vorderindien gesammelte Süßwasseralgen. Hedwigia 39:160-190, 3 Pl., 2 Fig.

Dear Scott,

Here's a copy of my letter to Prescott about the first sheets of N. Amer. Desm. I don't feel very bright, and am rushed to death with more to come in the next week, so I felt I ought to get something off tonight. I'll be awfully interested to see your more intelligent comments so please send me the copy now. - at your convenience, of course - I mean now that it cannot influence my comments.

Won't the New *edwigia* be suitable to publish your big paper?

Sorry to hear that Edith is having that inner ear trouble. Mother had it for a while, and was miserable, but it got quite all right with treatment.

I'll try to write again when I get a breather.

My best to Edith.

Copy

March 30, 1960

Dear Jerry,

I've just come back from a brief vacation in Pennsylvania to find a note from Scott and the sample sheets of the No. Amer. Desm. Since the next term begins tomorrow in a whirl of activity I'll try to make comments tonight though I can't seem to get my thoughts very well organized.

I. Re bibliography: It looks as though you are aiming to be pretty complete on desmids from everywhere, not just No. Amer. I'm in favor of that. I can't find any omissions on this one page.

II. Re text.

1. The last paragraph looks as though you are not planning to treat separate varieties and forms, individually. I hope you will, add also list inclusions and exclusions.
2. My feeling would be to have more figures and less text. Figures are much more helpful than necessarily verbose descriptions - they are quicker for us and easier for foreigners. I think every taxon should be shown in 3 views whenever possible; of this particular one I do not have an end view in my icon. but West & west 1896 give a side view. The last paragraph discussing variability is helpful but I'd rather see the extremes illustrated in whatever views are pertinent
3. Size: I think thickness should also be given. Also, aren't you inconsistent? Your figure is obviously taken from Prescott & Scott, 1945, p. 239, II: 1, whose size is given as length 44 μ , width 29 μ , crass. 20 μ , isth. 6.5 μ . The size you give seems to consider only Wests and Irene Marie
4. And, finally, I'm still in favor of a loose-leaf style, so that subsequent novelties can be added, by us or by the owner if he has a duplicating machine at his disposal. A large publication like the Scott and Groubled one of southern U.S, coming out after ours would knock us for a loop.

Otherwise it looks very nice!

Best wishes,

HANNAH CROASDALE
77 SOUTH MAIN ST.
HANOVER, N. H.

Jun 20 /60

Dear Scott,

I suppose that it is
to early to ask for news, but
still I am waiting most
anxiously to hear the fate of
your Indonesian paper.

All this clutter of letters
just turned up, and I'm
afraid I should have re-
turned it sooner - sorry.

It is interesting. I should
think there must be more
correspondance on the subject -

but I wonder if anything will
be accomplished. Even the
latic was bad!

I've written to Rolf, but haven't
heard anything. I do hope that
he is all right. I haven't heard
from Teeling either, but I know
he is busy selling out and moving
to Lund. I wonder why Lund and
not Uppsala.

Prescott sent me a few very
nice figures of desmids to "blow
down" but no indication of the
desired reduction. I wish we
could have a little uniformity.
He said he was getting a better
projector.

my best to you both

Hannah

N

June 25 1960

Dear Hannah,

Soon after our return from New York I received a letter from M. Sachlan in which he reversed his previous antagonistic attitude towards Hydrobiologia, because although it is published in Holland it is not written in Dutch, but in English, French and German. He said that I should write to Prof. van Oye, which I did immediately, and had a reply by return airmail accepting the Indonesian paper and saying that he would try to publish it in one issue, and in about eight months, which is even better than the one year that I had mentioned. So the Ms and drawings are now in Belgium at a cost of \$19.70 for airmail postage. This is a big worry off my mind, even though it means giving up all hope of obtaining reimbursement for the close to \$1000 that I shall have spent on it by the time it gets into print.

Jerry wrote me that he had sent you some of the very big enlargements so that you could try to "blow them down", but this seems a very complicated way of doing things. Also he said that he thinks the 5x enlargements could be used as is, by mounting all of them on an extra large sheet and reducing them in the photo-engraving process. This would mean trouble for whoever does the inking, for he would have to use extra wide ink lines to withstand the greater reduction. Jerry says he hopes to get a 3x projecting lens for the A-O projector later this year, but what he really needs is ~~xx~~ a focussing lens that will vary the enlargement, say between 2x and 5x, and I should think his son-in-law ought to be able to get one for him. Such an arrangement is used in all the 2x2" slide projectors, though not for such small enlargements, of course. I have occasionally used an S-V-E projector made for 35 mm film, and have replaced its own lens with a home-made one assembled from war-surplus lenses mounted in wooden barrels. It is a makeshift affair, but it works, though it won't handle an original illustration larger than about 30x40 mm. I copy the original on thin tracing paper, and insert this in the projector instead of the 35 mm film.

Haven't heard anything more from Rolf, but I hope he is getting better. Maybe he is more accustomed to hospitals than I am, but I know he will be glad to get back to Karis where Aili can look after him.

It is very kind of you to offer to make photocopies of papers for me, and later on, after college starts again, I shall probably avail myself of it. They have a similar machine at Tulane Univ., but unfortunately they have no desmid papers of interest to me.

Best regards until later,

Sincerely.

May 31 1960

Dear Hannah,

Enclosed is a copy of my letter to Teiling which provoked his lengthy response. Please return them as soon as you conveniently can, for I have not yet answered his letter.

If he had confined the genus *Staurodesmus* to those forms of *Arthrodesmus* and *Staurastrum* which can be proven identical by means of Janus-forms, I would have accepted it. But when he extends it to include all *Arthrodesmi* with two spines per semicell, and all *Staurastra* with one papilla or tooth or spine at each angle, no matter whether they are 2- or 3- or 9-radiate, the genus becomes for me merely another artificial separation without any special merit, for nobody can make me believe that *Arthrodesmus incus* rightfully belongs in the same genus with *Staurastrum prainii*. And when he refers to a supposed resemblance of certain forms of *St. dickiei* with with *Cosm. smolandicum* and *C. ralfsii* I think it is pure speculation. Apparently he would even include in *Staurodesmus* certain *Cosmaria* like *C. contractum* var. *papillatum* W&N, *C. lobatum* Bérge's., and *C. quadripapillatum* Scott & Grünbl.

In my letter to him I listed 7 strikingly different species of *Staurastrum*, each of which possesses a single tooth or spine at each angle and therefore would come within his definition of *Staurodesmus*. I have seen actual specimens of all except one of them (*St. longissimum*), while I am reasonably sure that he has never seen any of them except in illustrations. He ridicules my statement that I find more affinity between them and *St. gracile*, *ophiura*, *alternans*, etc., than with each other and with *Staurodesmus*. Of course this is not the case; I know quite well that *Staurastrum* is a horrible agglomeration of species that ought to be divided up into a dozen or more genera, if anybody can find the correct and scientific way of doing it. But I do not see the slightest affinity between the 7 species that I mentioned and *Arthrodesmus incus* or *A. ralfsii*.

In his 5th paragraph Teiling writes "A genus is not a selection of strikingly similar shapes, but forms that on the basis of comparative morphology, culture and genetics show reasonable affinities. They can be arranged in series with mutual connections, etc., etc. Now, in the vast majority of desmids nothing whatever is known of their genetics, nor have they been cultured. So the only remaining criterion is comparative morphology, plus in a few instances the chloroplast structure and the pyrenoids. To me "comparative morphology" means, roughly, similarity of shapes of the cells; in other words the system that every desmidiologist is using today and that has been used for the last century or more. In my opinion Teiling is going to do exactly what he says should not be done. He is merely selecting from the literature pictures of *Staurastra* of greatly differing shapes and sizes, which have only one character in common, viz., that they all possess one papilla, or tooth, or spine at one lateral angle (not two lateral angles). Of course this is one way of separating ~~maps~~ a group of *Staurastra*, but it does not seem a logical way to me, for it results in a heterogeneous assembly of forms that certainly have no close relation with each other, as in the 7 species that I listed at random.

If he proceeded further along this line his next step would probably be to group together all the *Staurastra* that have two spines at each angle, or perhaps he would include those with several spines at the angles, but not those with lateral spines in addition. The third step would include those with lateral and/or apical spines. The fourth perhaps would group together all *Staurastra* that are spinous all over; and so on, and so on, and so on. In this way the genus *Staurastrum* could be

split up into many smaller genera, but the classification would be a highly unnatural one, and no more satisfactory from the systematic viewpoint than the present genus, and what he would do when he reached the really ornate and complicated species is more than I can imagine.

In his letter he asks if I am sure that my attitude is not influenced by Grönblad. Of course I regard Rolf's opinions with a great deal of respect, for to me he is the best desmidiologist in the world, bar none, and to this extent I may have been influenced. But also I have a mind of my own, and am not afraid to express my opinions on subjects that I am familiar with. On several occasions I have ventured to differ with Krieger, and Grönblad, and Prescott, and with West & West. Sometimes I am right and sometimes wrong; in the latter case I willingly admit it.

Telling is right when he says that my lack of training in biology prevents me from understanding the theory underlying his classification systems. For instance, I do not know just why *Grönbladia* with a laminate chloroplast had to be separated from *Nyctotheca* with its pseudo-stelloid chloroplast. Other genera have more than one type of chloroplast, e.g., *Pleurotaenium*, some species of which have stelloid and others taenio-parietal chloroplasts. Again, I do not know the significance of the number of pyrenoids; *Arth. maximus* has two pyrenoids per semicell, while the closely similar *Arth. curvatus* has only one. In a Sumatran collection I found many specimens of an *Arthrodesmus* that I referred to *A. subvalidus* Grönbl., some of which had one and others two pyrenoids per semicell, the specimens being otherwise indistinguishable.

While I am not competent to criticize his theories regarding desmid evolution, I think I do have the right to say that I believe he is stretching them too far when he proposes to include in *Staurodesmus* such vastly disparate species as *A. incus* and the like with the *Staurastras* that I listed, and even some *Cosmaria* that have developed short teeth on their lateral margins. On p. 77 of his 1948 paper he says that *St. orbiculare* is to be excluded from *Staurodesmus* until it is proved to be a reduced form of *St. brevispinum*. I wonder if he has any evidence tending toward such a proof? To me it seems like sheer guesswork.

As to *Actinotaenium*, I am kind of on the fence, as I told you. I was rather surprised that Jerry used it in his last paper, for he had told me previously that he was not ready to accept it. I have no fixed objection to it as I have to *Staurodesmus*, and if others take up *Actinotaenium* I suppose that I may as well do so also, though from a systematic viewpoint I don't see much advantage.

and
Edith & I went on to New York, and I went out to the Botanical Garden in Bronx Park hoping to see Dr. Rickett, but he is in Europe and will not return until the middle of June. I had a nice talk with the Director, Dr. Steere, who gave me a little encouragement, saying that he thought they might be able to publish the Indonesian paper in their *Memoirs*, though Rickett would have the final say-so. I am going to send him the Ms and blueprints of the plates, and hope for a favorable action. Also I am sending another set to Jerry so that he may see what he can do with *Sigma Xi*.

We flew back to New Orleans on the new jet plane that makes the 1140 miles in 2½ hours, but it takes longer than that for the trip from the New York hotel to Idlewild, and from the N.O. airport to our house. We had a small adventure also. Soon after the plane got off the ground at Idlewild the Captain announced over the loudspeaker that owing to a malfunction he would have to return, but would have to fly out to sea and dump part of the fuel before landing, because the plane would be too heavy with the full load of fuel. After getting rid of about 20000 lbs of fuel somewhere near the Ambrose lightship we returned to Idlewild and landed without any trouble. It appears that one of the doors covering the landing-gear recess in the wing refused to close properly. They said it would take 45 minutes to fix it, but we lost more than 2 hours on the ground. The remainder of the flight was uneventful; we flew at 31000 feet, twice as high as the ordinary propeller planes, so there is no sensation of high speed, also no vibration and comparatively little noise.

Best regards from Edith and myself.

June 10 1960

Dear Hannah,

Enclosed are some letters from Rolf, from which you will see that he apparently had a heart attack about the end of May, and is now in the Västro Nylands Sjukhus at Ekenäs, a small town that you may remember as the nearest railroad station to the Biological Station at Tvärminne. It is good to know that he is already recovering and able to sit up and take notice, and even to think about desmids.

The letter from Dr. Lund was in reply to a request from Rolf, asking whether he could tell Woodhead & Tweed, in some polite way that would not cause offense, that their illustrations in *Hydrobiologia* XII(2-3):181-225, *Freshwater Algae of Sierra Leone I. New and unusual algae from the Sula Hills*, are so terribly poor as to be practically worthless. Rolf loaned me a reprint, and his comments are quite true; the drawings are the worst I have seen from any modern author, and some of their identifications are quite wrong. I am of the same opinion as Lund, that van Oye should have rejected the paper and told the authors to find someone else to make their drawings. Apparently van Oye does little editing, as is evident from the many mistakes in spelling in Irene-Marie's papers that he has published. I had thought of writing van Oye about it, but I have just offered him the Indonesian Ms, as I shall have to keep quiet until I get his answer.

You will be glad also to see that Telling has at last written to Rolf and that their quarrel is apparently ended.

Please write Rolf one of your cheery letters to help speed up his recovery. I am starting a long letter to him tonight and will get it off tomorrow.

Sincerely,

May 9

Dear Scott,

Thank for this carbon concern,
the N. Am. ^{Desm}-Flora. I am convinced!

I hope that the Amer. Phil. Soc
publishes your Indonesian paper. I
enclose a copy of my efforts in its behalf.

Are we having a conference in Phila.
± May 20 about the Desm'd Flora?

I think Jerry is working on the idea.

I shall stay as usual with my sister-
in-law at our home 20 miles out of the
city. You and Edith are cordially invited
to stay there too. If it seems convenient
to you. Dorothy is wonderful, and always
welcomes my friends.

I was hoping that the conference would
be after school stopped so that I could
be away longer, and Mother could come
down soon.

Anyway. I hope to see you.

Harriet

May 14, 1960

Dear Hannah,

You made your review of Indonesian Desmids sound so convincing that I am almost tempted myself to believe the nice things you said about the paper and about my capabilities. It certainly will help to "sell" the paper, and it is encouraging to see that Dr. Robbins is giving it some serious consideration. The suggestion to send the paper to Am. Phil. Soc. came from Prof. Joseph Ewan of Tulane Univ., who has a wide reputation for his writings on the historical aspects of botany, and as a reviewer, though he is not specially interested in algae. He gave me a good sendoff, and Dr. Robbins came back at him with a request for more background information about me and my work; so things look pretty hopeful to me.

I phoned Jerry this morning, and found that he was getting ready to call me about the conference in Philadelphia, of which I had previously heard nothing until receipt of your letter. He said that next weekend is the only one that he could fit into his crowded schedule, so that accounts for the rather short notice.

Edith and I will fly to Philadelphia next Thursday, May 19, and will be at the Sheraton Hotel probably about 5 pm, and will stay until Sunday, then go on to New York for two or three days. It was very kind of you to offer us hospitality at your sister-in-law's home, but for certain reasons that Edith can explain it is necessary for us to stay at a hotel. Jerry also will get there Thursday, but probably not until later at night.

It will be a real treat for all of us to get together again, and then I can thank you in person for your many kindnesses.

Sincerely,

April 7 1960

Dear Hannah,

I did not make an extra carbon of my letter to Jerry, so I am enclosing my own copy which you may return at your leisure. In acknowledging my criticism he said that the loose-leaf idea originated with you, which came as rather a surprise, and shows what diametrically opposed ideas can be held by two workers in the same field.

In his first letter he said that he thought we may have 1400 species (taxa?), which would require 700 pages or thereabouts, plus a few more pages for introduction and a discussion of desmid ecology; plus some more for keys if it were decided to put these in; plus some more for an index which he did not mention but which certainly will be required. He thinks there would be two books of about 400 pp each. I have never counted the total number of desmids represented in my USA drawings, but have guesstimated that there may be 800 or 900 taxa, of which probably about 300 have already been published. The remainder, perhaps 500 or 600, are all known forms but I expect there are a good many that are new records for N. America, so the total of 1400 taxa may be increased considerably.

In the Botany Dept. of Tulane University I know a Prof. Joseph Ewan, who has a very wide acquaintance with botanical literature, though he knows little about algae. A week ago I asked him if he knew of any Floras that had been issued in loose-leaf form. He knew of only one, a "Flora Hawaïensis" or some similar name. He is not in favor of the idea himself, and he has spoken to two or three librarians specializing in biological literature who are definitely against it. They fear that if the practice became widespread their staffs would simply be unable to keep up with the task of removing the old sheets and inserting the new. I have had a lot of experience with this myself, and I always regarded the job as a tiresome and time-consuming chore.

Whether the book is issued in loose-leaf or permanently-bound form I regard it as essential that the species in each genus be arranged in groups of similar shapes, and this of course requires an index, not only of the correct names but also of synonyms and rejected species, like Krieger's index. An alphabetical arrangement of species is fine if you know the name of the desmid that you want to look up, but for identification of unknowns it is worse than useless, as you have no doubt discovered in using Jerry's iconograph. If you have a sketch of a single *Staurostrum* that you suspect may be new, you have to turn over and examine every sheet of drawings in the whole drawer-full; and when you have perhaps thirty or forty possible novelties in one genus, as in my Indonesian material, it becomes a terrible job.

is
One thing I forgot to mention to Jerry/that it would be nice to give the world-wide distribution of each taxon, where it is known, in addition to N. American localities. Also that I believe credit should be given when illustrations are copied from the works of other authors.

Yes, I have Nova Hedwigia in mind as a possible medium for publication of the Indonesian paper, but there are a couple of possibilities in this country that I want to try first. I think Nova Hedwigia would take it, and I have a good introduction to the publisher and editors because of my friendship with Krieger and with Grönblad. They invited Holf to continue Krieger's monograph, after the genus *Cosmarium* is finished, but he had to decline on account of his poor health and lack of time. He suggested Skuja, who also declined, and Prescott; but I don't see how Jerry could handle this enormous task with all the other irons that he has on the fire.

Best regards from Edith and myself.

March 22 1960

Dear Hannah,

No doubt Jerry has written you about the two sample sheets from the "Synopsis of North American Desmidiaceae", which I am sending you herewith.

Yesterday I wrote him a long letter about this matter, and at first I thought of sending you a copy, but concluded that it would be better for you to express your own views, uninfluenced by mine.

Nothing much new here. I have done very little on desmids lately, except trying to find a publisher for the big paper on Indonesian desmids, so far without much success.

Edith and I have been watching the Dartmouth team in College Bowl on television for the last three weeks, and thought we might have seen you among the audience. We like the show very much, but it is far too fast for me. I can answer some of the questions in science, math, and geography, but am lost when it comes to art and music.

Edith and I are well, but she has been under treatment for two months for vertigo, caused by some derangement of the balancing mechanism in the inner ear. The cure is a long and slow process, so everyone says.

Hope you and your mother are well. How about running down here for the Easter holidays? The weather is just starting to get warm, after a rather chilly winter.

Best regards from both of us.

Sincerely,

HANNAH CROASDALE
77 SOUTH MAIN ST.
HANOVER, N. H.

Ogonguit, Me.

Sept 10

Dear Scott,

Thank for the fine letter
and for the slides (which I have
returned). I think they are very
interesting, and well worth while
for preserving Auscottha, and such.
But otherwise I would doubt if
worth the effort. But I do wonder
how he does it!

I hope you and Edith had a
good trip West. I'll be interested
to hear. Mother and I are taking
a few days' vacation in Maine
— only a four hour drive from home
but seems very remote & exciting.

We are very cosy in a small house-
keeping cabin (with central heat)
perch on a bluff overlooking an
inlet, marshes, sand dunes, & then
the sea. We swim in the inlet
below the cabin, which is warmer
than average Maine coast water.
When the sun burns through the fog
soon I can walk across the marshes
(it will be low tide) & sample the
icy water beyond the sand dunes.

I am nearly well of my shingles
except for a paralyzed left side of my
face which, at last shows faint
signs of recovery. Work starts next week
so I am trying to gather vigor.

Digitized by Hunt Institute for Botanical Documentation

I finally have a good binocular comp.
microscope. set up with camera lucida
per your direction - not quite the proper
lights & lens yet, but I'm gaining.
Stellard sent me stuff from way up in Alaska
but so far it's dull - difficult Clostridia mostly
Love to Edith - Hannah

Oct 12 1959

Dear Hannah,

The box of slides and the two packages of illustrations, also your letter of Sept 10 came while we were away. Since our return, a couple of weeks ago, I have been trying to get my mind down to business again, to catch up with the arrears of correspondence, and to read or at least glance through the accumulation of magazines.

Our trip was wonderful, with beautiful weather and practically no rain except on the last few days coming home. It was hot, of course, but in the air-conditioned car the heat was only noticeable when we stopped and got out; and anyway both of us are pretty well accustomed to hot weather. The car is a '56 Chrysler New Yorker that I bought second-hand early this year, with power steering and brakes which were a real joy on those steep mountain roads with many hairpin bends and loops.

We went as far as San Francisco, covering 6084 miles in 31 days of actual driving, or less than 200 miles per day average. I did all the driving, for Edith has not driven for many years. It was tiring, of course, but we would stop every hour or so, get out of the car to stretch our legs, and smoke a cigarette. The roads in the western states are wonderful, usually much wider than anything we have here in the south. But even more surprising are the occasional stretches of the new Interstate Highway system that Uncle Sam is building. Out in the middle of nowhere there would suddenly appear a sign "Divided highway ahead", and the road would spread out into a double-lane highway like a billiard table. This would continue for anywhere from 1 mile to 20 miles, and then the divided highway reduced to the ordinary one, also in the middle of nowhere. Now and why they selected these sites for the new road is more than I could figure out, even though I am an engineer and know something about highway layouts.

In Arizona we saw the Meteor Crater, the Petrified Forest, the Saguaro National Monument, and the Organ-pipe Cactus Natl. Monument. In California we visited Sequoia Natl. Park, Yosemite Valley, Lake Tahoe, and crossed Death Valley. Also we saw Marineland of the Pacific, near Los Angeles, and the 200" telescope on Mt. Palomar. On the return trip we spent a day visiting the Big Bend Natl. Park in SW Texas, on the Rio Grande just across from Old Mexico. It is useless for me to try to describe all of these; there are not enough superlatives in the English language to do justice to them. I'm an old man and have seen a lot of wonderful things, so it takes something really extraordinary to arouse my enthusiasm, but I was literally hollering with joy and surprise at the first sight of the big redwood trees in the Sequoia forest, but when we reached the really big ones further on I was almost speechless. The largest one, the General Grant, is more than FORTY FEET greatest diameter at the base, and 267' high, as tall as a 25-story building. Of course I have seen many beautiful colored photos of these trees, but to see them in reality gives you an entirely different impression; they are almost incredible.

Yosemite is another wonderful place, with its enormous granite domes and sheer cliffs. Unfortunately last summer was unusually dry all over the west, so the numerous waterfalls were completely dry; even the famous Yosemite Falls had not a drop of water coming over it, and the equally famous Mirror Lake was reduced to a mere pond, and people were walking over much of its dry sandy bed. The Merced River, which must be a rushing torrent earlier in the year, was reduced to mere trickles of water barely visible in the interstices of the boulders that cover its bed.

Death Valley was somewhat disappointing to me. There are some spectacular views from the mountains on each side, some 6000' high, but the floor of the valley, most of which is at sea level, is not much different from the hundreds of miles of other deserts that we crossed. We did not get to the lowest point, which is 285' below sea level, because the road was being repaired and the sharp rocks on its surface made driving too uncomfortable and too hard on my tires.

The deserts themselves must be highly interesting for botanists, zoologists and geologists who can afford the time to explore and study them. We saw practically no animals, but I believe they are mostly nocturnal to avoid the extreme daytime heat. I know nothing of geology, and the only plants that I can recognize are some of the larger and unusual ones, from having seen them pictured so often, like the Joshua tree and two or three other species of yucca, the century plant (Agave), the giant cactus (Saguaro), the prickly pear, and cholla, and ocotillo, all three of which belong to the same genus (Opuntia), though they differ vastly in appearance. It was much too late in the year for any of the cactus to be in bloom, but many of the roadside "weeds" had most attractive flowers. In some places in West Texas large areas were covered with purple sage in bloom, imparting to the landscape purple shades that reminded us of the heather in England and Scotland.

In San Francisco we stayed four days, seeing the sights, and sampling the food in a few of the fine restaurants. Golden Gate Park is one of the showplaces. It has a very large glass conservatory, with magnificent displays of tropical and hot-house plants, all of them named, but few of the names were familiar to me. One wing was devoted to a display of begonias, of every imaginable shade of white, pink and red, and with leaves of many different shapes and shades of green. I wonder how they manage to have all of them in full bloom simultaneously. The park contains many other rare flowers, plants, shrubs and trees, nearly all of which were quite unknown to me.

If you ever get to Los Angeles you must not miss seeing "Marineland of the Pacific." This is connected with the newly completed Los Angeles Harbor and the St. Augustine. They have two huge steel tanks, some 25' deep and with portholes at three levels, containing thousands of salt-water fishes, of perhaps a hundred different kinds, from very small ones up to full-grown groupers, sharks, porpoises and even three specimens of a small species of whale. The whales have been trained to do some of the stunts that the porpoises accomplish, which I would hardly have believed possible.

I did not take my collecting outfit because I thought it would be useless, and that's the way it turned out; I don't think I saw more than half-a-dozen places that looked favorable for desmids. As soon as you get more than 100 miles past the eastern border of Texas the country becomes dry, even arid, and continues like that all the way out to the Pacific. There are some lakes, of course, in Texas, New Mexico and Arizona, but most of them are far from the main roads. California has many small lakes in the Sierra Nevada, and some of them, at least, ought to contain desmids, for most of the mountains seemed to me to be granite or other igneous rocks. But again most of them are difficult of access and quite out of my reach; those that I could drive to would require many side trips and more time than I could spare. That probably accounts for the dearth of algal records from the western States.

I took a lot of color photos, most of which turned out very well, though I'm a little disappointed that the Ektachrome film that I bought because of its higher speed, does not render the colors so brilliantly as the Kodachrome that I have used before. If you would like to see them I can send them to you later on, after I have shown them to our friends.

Edith and I are glad to hear that you have recovered from the shingles, and hope that by this time that the facial paralysis is showing a marked improvement. Don't forget that you have a tentative date with us in New Orleans next Spring. Best regards and good wishes to you and your Mother, from Edith and me.

Sincerely,

Monday Aug. 17?

Hanover

Dear Scott,

Please forgive my long delay in answering you last nice letter, of July 3. I have been laid up with a bad case of shingles - on the face, with complications - a nasty mess. I am practically out of pain now but half my face is still paralyzed. There is an 85% chance of its recovering, but probably not for another month or so. So the summer, for which I had such high hopes, has been practically wasted and I most likely shalln't get to the Montreal Meetings (\$25 down the spout!).

I haven't heard any more from Hilliard, and I do hope he took your advice and sent his paper to Prescott. I agree with you that it was probably Drouet that blasted him. I don't like Drouet! I agree with all you comments, and though I had never heard of your experience with him I have observed his feeble attempts at desmid identification, never admitting that he has not covered the material completely. I think his big Bluegreen paper - Chroococcales revised - is a joke, and quite worthless. Again it wouldn't be so bad if he didn't pose as the ultimate authority, and pan everything else. I knew him two summers at Woods Hole, and did not admire him.

Jerry is off to Alaska again soon, I gather. I think he means to include his Alaskan desmids in his big Desmids of North America venture (I suppose, legally, that ought to include Hawaiian desmids too, now, I'm suprised he hasn't dashed off there.) In the last note I got from him he said he thought that the Nat. Sci. Found. was not going to OK the grant for the Trans. Mic. Soc. Index after all. Disappointing, but I would think he had enough on the ball already.

Yes, I have suscribed to Nova Hedwigia and received my first copy (but no person^s invitation to contribute papers!) It seems very nice but I wish it were not so heavily German, which I read with difficulty. I also suscribed to "Die Gattung Cosmarium"

I also have not heard from Teiling for a long while but I bet he is not offended. He loves you! Probably you have heard by now.

I hope that Edith is quite well again, and that you stay well now. What are you working on now?

Best wishes

Hannal

August 21 1959

Dear Hannah,

Both Edith and I are terribly distressed to hear of your misfortune. Edith especially can sympathize with you, for she had shingles a few years ago, around the waist and on the thighs. It took a long while for it to disappear, and there didn't seem to be much that the doctor could do, either to cure it, or to relieve the pain. Yours seems to be much worse; I had not heard that it could cause paralysis of the muscles, and both of us ^{do} hope most sincerely that this symptom will clear up soon, along with the others. You ought to try to get to Montreal, if only for two or three days, to meet the big-shots who will surely be there.

Just now I am working on a lot of about 40 collections from the Amazon and Rio Negro regions of Brazil, the same lot in which Amscottia was found several years ago. I went through the vials once before, but rather hurriedly, so I am now examining them more thoroughly, to catch the common or garden species that I more or less neglected the first time, in my enthusiasm for the many novelties and beautiful forms. Just yesterday I found a single specimen of Amscottia mira with 12 processes in the lower whorl, while all those seen previously had only 10. Also I am looking for a few species on which I failed to get all the necessary information the first time. Some of these collections were made near Santarem, on the Amazon river, where Rolf's Brasilian stuff came from. So I have seen many of his new species, some of which that apparently have not been seen since their discovery 50 to 75 years ago. Also I have the smallest Micrasterias in the world, a var. of M. subincisa that is only 23 μ long.

Next Monday, Aug. 24th, Edith and I will start on a long auto trip, that we hope will take us as far as San Francisco. Whether we shall get that far is rather uncertain, for both of us are old, and I especially tire very easily, and I have to do all the driving. However, if it proves too much for us, all we have to do is rest for a few days and then turn round and come home again. If all goes well we shall be gone 4 or 5 weeks, returning about Oct 1, when our hot weather will be almost over.

Hope that you and your mother will be able to get down here next winter, either for the Christmas holidays, or for Mardi Gras. We should like very much to see you, and though we can't promise an exciting time I know there is much here that would interest you.

By parcel post I have sent you a box of desmid slides made by a chap in Germany, who has devoted thirty years to learning how to stain and mount them. They are the most remarkable that I have ever seen or imagined. How he handles such fragile objects and arranges them so regularly is more than I can comprehend. Note especially the St. ginzbergeri Grönb. from Brazil, with its exceedingly long and delicate arms. Keep them as long as you want, and then return them.

Best regards, and lots of good luck for a change.

Sincerely,

July 3 1959

Dear Hannah,

Apparently the Williard-Irene-Marie situation is more complicated than I gathered from H's letter. I don't believe that GWP was the referee; he is too kind-hearted to make such a harsh criticism, and I think he holds I-M in as much esteem as I do. However, I-M can turn out poor papers as well as good ones. Jules Brunel told me that many years ago he was editor of some Canadian journal to which I-M submitted a paper, but there were so many mistakes in it that B. returned it for correction. But I-M did not resubmit it and seemingly it was never published.

The following story (which I may have told you before) may shed some light on the subject. In 1942 Jerry had written the descriptions for our paper *Euastrum I*, and was ready to write up the final draft when he got a hurry-up call to go to Ecuador with other botanists to find new sources of Cinchona bark for quinine. So he sent me his notes and descriptions and asked me to write the paper, and then to send it to Theodor Just, editor of *Amer. Midl. Nat.* I had never written any scientific stuff and did not relish the job, but anyway I did so and sent it in. The editor sent the Ms. to Francis Drouet for criticism, and a few weeks later I got it back with a copy of Drouet's letter. His criticism was so severe and sarcastic that I was literally flabbergasted, but most of it was justified, for I had made a lot of silly mistakes, some caused by my inexperience and others just plain carelessness. I was still wondering what to do when a letter came from Jerry in Quito saying that he would be back in the States in a few weeks. So I held it until his return and then fired the whole thing back to him. He rewrote the paper and sent it to the editor with an apologetic letter explaining my lack of experience. The episode taught me some valuable lessons that I shall never forget. So if Drouet is still refereeing for the *Amer. Midl. Nat.* I expect that he is the critic.

Now, here's a criticism of Drouet's work on desmids! In a paper by C.S. Nielsen and Grace C. Madsen, "Check list of the algae of Northern Florida", *Quart. Journ. Fla. Acad. Sci.* II, 2-3:63-66, the authors thank Drouet for having made all the determinations. About one-half of the algae are cyans, the rest greens, and all of them are identified to species except the desmids, and the following is a complete list of the desmids: Mesotaenium macrococcum, Spirotaenia sp., Glosterium sp., Cosmarium sp., Desmidiium aptogonum, Gymnozyga moniliformis, Micrasterias sp., Staurastrum sp., Tetmemorus sp., Triploceras gracile. So out of ten desmids six are identified only to genus. Note also that the Triploceras gracile is the only desmid listed for one certain habitat. I regard this as absolutely impossible; it is an acid-water species, and I would make a bet at odds of 10 to 1 that the habitat contains at least 10 other desmids, probably many more. Further, the use of the abbreviation "sp." implies that only one species was found in each of the genera, which also is incredible.

My only experience with Alaskan desmids was in about 8 samples that an engineer friend brought back to me in 1944 or 1945, partly from Adak Island in the Aleutians, and the rest collected near Anchorage. I made drawings of all the desmids, but they were not of much interest, so I sent all the samples and my drawings to Prescott so that he could include them with some other Alaskan material that he had on hand. He has never published them, as far as I know.

I am quite sure that Gr nblad would not undertake a revision of I-M's work without his permission, and if I were you I would not even mention it to him.

Have you received the announcement of the new cryptogamic journal "*Nova Hedwigia*", and "*Die Gattung Cosmarium*", the latter by Krieger & Gerloff? The first

issue of the journal is out, and contains papers by Skuja, Ettl, Gerloff, Hortobagyi and Fott, though I have not yet received it. It is to be published 4 to 6 times a year, about 160 pp and plates each. Subscription will be from \$5.00 to \$6.25 per year, depending on the number of issues. The volume on Cosmarium will be in about 7 issues each of 160 pp including 16 to 32 plates, priced at \$5.00 each, less 10% to subscribers to Nova Hedwigia. The publisher of both is H. R. Engelmann (J. Cramer), P.O. Box 166, Weinheim/Bergstr., Germany. Cramer seems to be a successor to Engelmann, and he wrote me a nice note thanking me for my subscription, and inviting me to submit papers for publication, so there's another chance for Williard, and for you. I imagine you could induce your library to subscribe.

Its curious to hear about Lewis Flint panning for gold in your New Hampshire streams. I don't know much about him, and have only spoken to him once, when he attended a scientific meeting in New Orleans.

Early in June my friend Sachlan from Java spent 5 days with me, and it was a very interesting experience. I had thought of him as a young man, but he is 48 years old. He is spending about 9 months in this country, on a grant from the International Cooperation Administration, learning about freshwater fisheries and fish-raising, water pollution, and algae and their cultivation. He spent 5 weeks with Dick Starr at Bloomington, Ind., 2 weeks with GWP at East Lansing, 1 week at Ann Arbor with the Dept. of Fisheries, 2 weeks in Cincinnati with the U.S. Public Health Service, 1 week at Lonoke, Ark. with the State Fish Hatchery, and is now for 2½ months summer course at the Ala. Polytechnic Inst. at Auburn, Ala. in their fisheries division. After that he will go to Galveston to study problems of the "red tide", and then for a month at Beaufort, N.C. to study radiobiological techniques. Quite a lot of concentrated doses of education in different subjects in a short time!

Teiling has not answered my last two letters several months ago. I wonder if he is angry with me, as you say he is with Grönblad; I don't think I have given him any cause to be. Have you heard from him lately?

Edith has been under the weather for the last five weeks with an attack of colitis, but is now recovering and will soon be well again. I am in my usual state of health, not too good but not too bad. Hope everything is well with you and your mother.

Best regards from us both.

Sincerely,

DARTMOUTH COLLEGE

: Department of Zoology :
HANOVER · NEW HAMPSHIRE

June 28

Dear Scott,

Thanks for sending me a copy of your letter to Hilliard. I am glad that you confirm my refusal to meddle. But I wish that you had at least taken a look at his manuscript. The situation is a mystery to me. When he first asked me I suggested Prescott, but he wrote again, saying: "The only trouble is that I have reason to believe that Dr. Prescott was the party responsible for the initial criticism. Would you know of any other desmid specialist to whom I might send the mss.?" So I suggested you, since, when you appraised my paper, you said that you were more or less familiar with Alaskan algae.

The journal was the Amer. Midl. Nat., and someone - Paul Silva, I think, told me that ~~it~~ he had seen the paper and it was "very bad" (But for goodness sakes don't ever quote me on this because I don't remember clearly, I just remember vaguely wondering how Silva was qualified to pass judgement on I-Marie - but it may not have been Silva - just someone else who did not work on desmids.)

Irénée-Marie and Hilliard have fallen out - badly! Two years ago Hilliard offered me some plankton samples (Alaskan) in exchange for a list of the commonest forms present. I wrote back and said he should offer them to I-M. He said that I-M wouldn't want them. But just to be safe I wrote to I-M myself, saying that Hilliard had offered me the samples but that I wouldn't take them unless I-M assured me himself that he did not want them. He assured me all right! I got a regular blast of rage (directed against Hilliard, not me - I wish I could find the letter to quote directly) but the effect was that his previous work for Hilliard had been unappreciated and somehow abused, and that he was not paid by the Canadian government to do Hilliard's work for him, etc. etc. So I wrote a soothing reply, and took Hilliard's few vials, which turned out to be very interesting.

Hilliard is going to send me some more this fall, from the Cape Thompson region in Alaska. I shall be very glad to have them because I did not get so far North, and I did very poorly on plankton

collecting. In spite of the slight prejudice I acquired from Siãva? and Irénée I have grown to like the boy, from his correspondence. If his I-M paper had been published uncriticized it would have come out before my second or third Alaskan paper which would have been bad for me, spoiling many of my New-to-Alaska-records and starting some controversy. So I was glad it didn't, and of course I had nothing to do with its delay. Now I would like to see it in print. If he still feels he cannot send it to Prescott do you think Rolf Grönblad might take it on? Of course none of us wants to tred on Irénée's toes!

I'm hoping to get going on my Alaskan collection again this summer, though at the moment I am still in the throes of post school housecleaning. I had fun teaching in an Algae Course last term, and in the process learned a good deal about some of the groups - like flagellates - that have never interested me.

We are having a cool wet summer, which is a pleasant change from our last two drought years, and very good for housecleaning.

I saw your fellow Louisianan, Lewis Flint yesterday - he had been panning for gold in a local brook. He certainly has a lot of interests. I've learned a lot about freshwater Red Algae from him, and brook-algae in general, and I am very fond of him. But I wish it was you who spent summers in N.H. Then I'd learn more about desmids and microspopy!

Give my best to Edith,

Hannell

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

April 5

Dear Scott,

Sorry to be a month late answering your letter. I agree with you, of course, on voting against Silva's proposal, and so do most of the taxonomists to whom I have had an opportunity to speak (we don't have many here). I have a mycologist friend who says it might be helpful in the Fungi imperfecti. I wonder how Drouot and Tiffany feel about their groups. I've always rather admired Silva, especially for his most helpful algal bibliography. But I think his orderly mind is running away with him this time.

I am sorry that you and Edith won't be coming to the Montreal Congress. I had hoped so much for a visit from you along the way. I think I'm going, but I'm not sure yet. I haven't heard from Grönblad for ages, but I gather his health is not good. I'm so sorry. I wish he'd make up his feud with Teeling.

Spring is coming to us at last, after a hard winter. We still have snow banks on our lawn but bulbs are pushing up.

My best to Edith -

Harold

Dec 10
Hanover

Dear Scott,

Enclosed are the 2 latest diagnoses
If you want the drawings returned let me
know.

I'll try to get the big lot back to you before
Christmas, but I'm not sure I can make it.
The bottle neck is my latin prof, who checks
my work and is now 'snowed under'
examinations. There are something over 140
novelties, and I have about 100 completed.
Would you like me to send these to you
ahead of the rest? If I don't get the rest
done before Christmas, should I send your manu-
script back? Would you like me to send the
remaining 40 or so, unchecked, and then
send corrections later?

It is lucky Mrs Perine could finish the
plates; writing these diagnoses has taken all
my spare time! I have been working on them
almost every evening since I received them.
A few minor jobs have trickled through,
but yours has been the main push. I'm
been striving all along to finish by Christmas.

The news from Finland sounds bad. Do you
know how it affects Rolf? Is there anything
we can do?

Best wishes to you both

Hansel

March 3 1959

Dear Hannah,

Rolf wrote me that he had written you a few weeks ago. No doubt he told you about his poor state of health, and that he has had to abandon the idea of attending the Montreal Congress. That is a big disappointment to me and I am sure to you also, and to his other friends over here. So I, too, have decided not to go to Montreal. It would be quite expensive for I should have to take Edith along, and there is nobody to help with the expenses.

I suppose you have heard, maybe from Grönblad, about P.C. Silva's proposal to the Montreal Congress to abolish "later starting points for Algae" from Art. 13 of the Code. It was printed in "Taxon" VII(7), Sept. 1958, and it affects Desmids (Ralfs 1848), some species of the Nostocaceae, and Oedogoniaceae. Silva pays special attention to desmids in his article, which is rather strange since he is not a specialist on this group and has never published anything on them so far as I know. Rolf is very much perturbed about it, because, as he says, the elimination of Ralfs 1848 as a starting point would be "catastrophic" for desmid nomenclature. He has asked me to join him in a short article to be published in Taxon, opposing and refuting Silva's arguments, and to try to stir up opposition to the proposal among American desmidiologists. I spoke to Jerry on the phone a few days ago, to get his opinion, and find that he also is very much against it; in fact he wrote me a couple of days later that he hopes Silva's proposal will be "scuttled", and he will (see) what he can do towards blocking it.

The preliminary mail ballots for voting on all proposals for changes in nomenclature have already been sent to members of the I.A.P.T., so please talk to your botanists at Dartmouth, and try to persuade them to vote against Silva's proposal, which is #58. I have written to Brunel and Irene-Marie in the same vein, but they have not yet replied.

In your last letter you asked why I don't like I-M's *Mastrum pinnatum* var. *Pres-Scottii*. I don't exactly dislike it, and perhaps the varietal name is correctly formed, but it looks kinda funny to use an abbreviation for the first name and spell the second one out. Anyway, I'm glad that he has made a variety of them; I was not in agreement with Jerry's determination as *formae* of *E. pinnatum*. They are much smaller, proportionately narrower, and the lobulation differs considerably, particularly the shape of the polar lobe in vertical view.

There's nothing much new down here. I am typing on the big Indonesian paper, but it's a slow and tedious job. I make many mistakes because my fingers hit the wrong keys, and my thoughts are so far ahead of my writing that I frequently omit whole words. You would hardly believe that 53 years ago I held a job as stenographer and typist in the foreign department of a big export firm in London.

Best regards and good wishes.

Sincerely,

Feb 1

Dear Scott,

Thanks for the check. I do hope you get it back. I'd be sure Nat. Sci. Foundation would come across. There seems to be endless money there, and for just such a purpose.

I sure need it just now, because my sister-in-law and I gave Mother a television for Christmas. We are in such a poor area for T.V. ~~here that I have already spent~~ over \$100 for aerial, transformer etc - in addition to 1/2 the cost of the set! (I have never spent so much for something I wanted so little!)

I hear you didn't like *Irinée-Maris* E. pinatum v. Pres-Scottii. What's wrong?

my best to Edith

Hannah

In Memoriam...



DR. R. L. CAYLOR

He came to us in 1931 — he left us on April 27, 1958. But Dr. Richard L. Caylor left behind him, not only a lasting respect in the memory of those who knew and loved him, but a host of contributions to science and education in Mississippi, and to Delta State.

Dr. Caylor, a professor at Delta State for 27 years, was head of the division of Science until the time of his death.

He had seen the Science department grow from small quarters and few students to a spacious two-story building with the most modern equipment available, and an enrollment in science courses of more than 300.

This devoted professor was a "friend and second father" to his students, securing for many of them scholarships, fellowships, and important positions in the scientific world.

A leader in science circles in the state and nation, Dr. Caylor directed the establishment of the valuable Gulf Coast Research Laboratory at Ocean Springs, where several institutes of higher learning conduct extensive biological experiments. The main laboratory there was named for Dr. Caylor last year. He was also a former president of the Mississippi Academy of Science.

He received his B. A. degree from Mississippi College, his M. A. degree from George Peabody College, and his Ph. D. from Louisiana State University. He had done graduate work at George Washington University and the Marine Biological Laboratory.

Devoted to Delta State, Dr. Caylor often appeared at state science programs, meetings, and high school science functions on its behalf.

He was a deacon in the First Baptist Church of Cleveland, and a spiritual inspiration and help to a number of students who greatly felt his guiding influence.

Delta State has lost "one whom heaven has gained," but his memory will live in the hearts of many.

900 South Court St
Cleveland, Miss.

January 25, 1959

Mr. Arthur M. Scott
2824 Dante Street
New Orleans 18, La.

Dear Mr. Scott,

In looking through
Lee's letters I found this
one from you, written
to him Nov. 29, 1957.

I have been wondering
if you knew I carried
Lee to the City Hospital
here Dec. 9, 1957 with a
heart attack? I carried
him to the hospital
five times (once to the
University Hospital

in Jackson) from Dec. 1957 to April 25 1958 - He passed away here in the City Hospital April 27, and was buried in the Cemetery in Leland Miss. (my home town), April 29, 1958.

I am enclosing this clipping which appeared in the Delta State College paper, thinking you would appreciate it. I do wonder if Lee was able to reply to this letter which came just a few days before

3.

his trip to the hospital
in December 1957?

With best wishes
to you in your work.

I am

Very sincerely,
Mrs. R. L. Caylor

January 17, 1959

Bill to Mr. A. M. Scott, 2824 Dante Street, New Orleans 18, La.

For writing latin diagnoses of new species and varieties of plants:

121 short diagnoses @ \$1.00	\$121.00
31 long " @ \$2.00	62.00
	<hr/>
	\$183.00

Hannah Croasdale
Dartmouth College, Hanover, N.H.

Digitized by Hunt Institute for Botanical Documentation

Received payment,

Hannah Croasdale

DARTMOUTH COLLEGE
: Department of Zoology :
HANOVER · NEW HAMPSHIRE

October 21 1959

Dear Scott,

Thanks for the wonderful letter! What a lot you saw: It makes me want to go at once. I have never seen any of those things but have often dreamed of some such trip. I'd like to fly to Washington or Vancouver, buy or rent a car, and drive down the coast, and then take a look at a desert, a national park, the Grand Canyon, etc. But the prospect at the moment is dim.

This is not our lucky year. Mother is sick again - acute unexplained abdominal pains, so it looks like another operation. We had a three-day vacation in Maine right after Labor Day and it seemed to do us both good, but she got sick right after that and has been up and down ever since. Tonight she is really down - the doctor has just come to give her an injection so she is sleeping at last. We had intended to leave tomorrow to drive to Pennsylvania for a few days' visit to home folks while I attended a one-day conference in Philadelphia with Jerry Prescott and others re preparing an index for Trans. Amer. Micro. Soc. I think I will go anyway, because Mother will be safe in the hospital under observation but it is all rather grim.

To return to scientific matters: Has it been called to your attention that you have created the species *Cosm. sublobatiforme* for two different plants: 1) Prescott & Scott, 1942, p. 14
2) Grönblad & Scott, 1958, p. 33
I'll bet that is rather a unique situation - same authorship in synonymy. You'll have to do something about it.

I'm finally using a binoc. compound scope for algae examination, but the built-in light isn't adequate, the camera lucida attaches to the ocular and rides it around, and I still have one bad eye - also I have very little available time. Still I'm having fun with some algae Hilliard sent me from far north Alaska.

My best to Edith,

Hannah

MM
MM

January 31 1959

Mrs. R. L. Caylor,
900 South Court,
Cleveland, Miss.

Dear Mrs. Caylor,

Many thanks for your letter of the 25th, and for the clipping that you enclosed; it is a very fine tribute to your husband's memory. I had previously learned of his death from a notice in one of the biological journals.

A long time ago Prof. Prescott gave me Dr. Caylor's name as one of the very few persons in the southern States who was interested in freshwater algae, and later Dr. Flint of L.S.U., and Dr. L. A. Whitford also spoke very highly of him. Unfortunately I never had an opportunity of meeting him in person, and knew him only through correspondence. He did not reply to my letter which you mention, and I now understand that it was because of his illness, but the letter really did not require an answer.

I am 71 years old, and I also had a heart attack nearly two years ago, though fortunately it was a rather mild one. But there's no telling when another may come, so I am trying to complete several important projects that I have started, for there will be nobody to carry on after I am gone.

Please accept my deepest sympathy in your grievous loss.

Sincerely,

January 17 1959

Dear Scott,

Here is the final lot. I am sorry that I have been so slow getting these finished but Christmas vacation in Pa. and a bout of flu slowed me up.

Enclosed is the bill, and I do hope you get National Science Foundation or such to pay it for you.

It does seem as though I goofed on "chauliodonta". I found justification for it at the time but can't proof it now. I think I was working just on the end, and considered don a noun and donta the neuter adjectival form. I will be more careful in the future with my corrections or suggestions. The only comment that I made in this lot is that possibly Bambusina is feminine

Your comments about Dr. Prowse's lack of curiosity are interesting. If the current easing of world travel dulls the senses that way it defeats its own purpose, doesn't it. I certainly don't remember my interest flagging as I batted around Scandinavia. I am still hoping very much for an opportunity of seeing your microscope set-up and methods of working. I have time off next year between Christmas and Easter, and would like to come South with Mother, if she is well enough and we can afford it.

My best to Edith, and good luck with the paper.

Sincerely

Harold

Jan 24, 1959

Dear Hannah,

Thanks for the balance of the Latin; and here's my check in payment. Please receipt and return the bill, just in case I should later be able to get a grant from someone.

My use of *fa. constrictum* for a species of *Bambusina* was an error, and I am glad you caught it. The word *Bambusina* looks as if it ought to be feminine, and Grönblad thought so too, in naming *B. sphaerospora* (Scott & Grönbl., Desm. SE U.S.A.). Incidentally, and in case you ever encounter *B. delicatissima* Wolle, you might note that in the 1st edition of his book, 1884, he illustrates this on Pl. 1, Figs. 22, 23 & 24. However, Fig. 22 is the only one of the three that corresponds with his description, "surrounded in the middle by two narrow, thick bands, twice the diameter of the cylindrical body". The other figures, #23 & 24, which he thought to be younger forms, represent something else, possibly *Hyalotheca* or *Groenbladia*, for the central inflation cannot develop in the way he thought. Later authors have been misled by these pictures of Wolle's, and have identified as *B. delicatissima* plants without the large central inflation. Thus Grönblad (Brazil), Krieger (Tunda), and West & West (Some N.A. Desm. 1895), were mistaken. I have from Florida several examples of a plant that corresponds very well in size and shape with Wolle's Fig. 22, and this, I think, must be regarded as the true *delicatissima*. I showed my drawings to Rolf when I was in Karis, and he agreed.

Edith and I would be delighted if you could visit New Orleans, so please try to arrange it next Spring.

Sincerely,

December 19

Dear Scott,

I sent the latin off today, with the manuscript, by registered mail. I hope that it arrives safely and promptly, avoiding the Christmas mess. Too bad that Sachlan decided not to come, I hope that he makes it in the spring. Our temperature went up to 32° today - the warmest day we have had for a month, but we are warned that it will go down to 15 below zero tonight. I don't suppose that we ourselves are any colder than you are, but we have a few extra problems like plumbing freezing and cars not starting, not to mention the icy roads. Our main roads are mostly bare, but our back roads and parking places are solid ice with a slippery top-dressing of dirty snow. Mother and I are driving down to Pennsylvania to spend Christmas with my sister-in-law, leaving on Sunday, and not looking forward to the trip. We are bound to hit icy roads and fresh snow somewhere along the way. Mother will stay down there for a month or so, but I'll be back here on the 30th.

I hope that the latin is in satisfactory form - that you didn't need the dimensions, and didn't want each novelty on a separate page. I am glad that Mrs. P. could finish the plates, because this latin took about all my available time. I hope that you have a grant or such, to help toward the expense of such a big paper - so many big papers! My current charge for latin is \$1.00 for short ones and \$2.00 for long ones, and I have a record of yours, so classified, and can send a bill when you want - but no hurry.

Here's wishing you both a Merry Christmas and Happy New Year.

Sincerely,

Harold

Dec 30 1958

Dear Hannah,

The Latin is in just the shape that I wanted; there is no need to put each item on a separate sheet, nor can I see that it is necessary to repeat the measurements and habitats in the Latin. Any desmidiologist can read them in English just as you and I can read them in Russian or Japanese papers.

Please include your bill when you send the remainder of the Latin, and I will mail a check right away. I've been wondering for some time how you could afford to do all diagnoses for the same \$1.00 charge, so I am not surprised that you have now raised it to \$2.00 for the long ones. The only grant I have ever had was one of \$50 many years ago from the New Orleans Acad. of Sciences, which I did not even ask for. It was proposed by a man who did a great deal to help me in getting started on the scientific study of desmids; previously I had only been playing with them.

I may have to look for a grant to get this Indonesian paper published, if, as I anticipate, I run into trouble because of its length and large number of plates. Reinwardtia promised to publish it, but that was a couple of years ago, when I estimated the number of plates would be about 35 to 40. With their political troubles in Java it is possible that the Botanic Garden in Bogor may not have the funds to do it.

I notice that you changed one of my names from "chauliodon" to "chauliodonta". I got the word from The Naturalist's Lexicon, by R.S. Woods, where it is given in that form as a Greek adjective of common gender, meaning "with outstanding or projecting teeth". Your word would be the Latinized feminine form. It seems to me that the International Code is inconsistent in frowning upon the use of hybrid names, but recommending that specific names be given a Latin termination. I don't see why a perfectly good Greek word should have a Latin suffix tacked on to it, and other authors have evidently had the same idea, for there are plenty of examples in the literature, both zoological and botanical. For example, there are Monodon (Cetacea), Diodon (botany); also many names of desmids in the Greek form, like Cosm. spyridion W&W; Eu. diplostauron Skuja; but also St. cryptoedrum, which would have been much better if written "cryptoedron".

Dr. Prowse was with us for two days just before Christmas. He is an Englishman, about 30 or 32 years old, and is the one who sent those funny Sudanese desmids to Rolf. Though he works at a Fish Research Laboratory, his position is Botanist and Phycologist. We had a nice talk about desmids, and he showed me a lot of his drawings, photocopied to a small scale, which are much better than those he made while at Khartoum. He has a lot of novelties from Malaya, such as a new spiny Pleurotaenium similar to Pl. spinulosum (Wolle) Brunel, but with the bristles in whorls on the swellings instead of being uniformly distributed; a new 4-radiate Streptonema trilobatum; a new 3-radiate Phymatodocis Nordstedtiana, etc., etc. Then we drove him around the city, and on the second day we drove along the Gulf coast as far as Biloxi and Ocean Springs. For a young man he seemed rather incurious, displaying no interest in my microscope set-up or methods of working, nor in the sights we showed him. But after travelling halfway around the world in five or six weeks, perhaps his mind is somewhat dulled to new impressions, and anyway our landscape is far from spectacular.

Best wishes for the New Year. Sincerely,

Dec 16 1958

Dear Hannah,

The flap is off. This morning came a note from Sachlan saying that his visit to the USA is postponed until next Spring, because it would be too cold for him in the winter.

I don't blame him. Its too cold for me right now, even in New Orleans. The last two nights we have had our first freeze, only a couple of degrees below the freezing point, but enough to kill the banana trees and the poinsettias. Too bad it had to happen just before Christmas.

So you may take your time about the remainder of the diagnoses, though I can start writing the final draft of the paper whenever you can get them to me.

Best wishes for the holidays from Edith and myself.

Sincerely,

Dec 13 1958

Dear Hannah,

Thanks for the two new diagnoses. As to the big lot, I think it will be best if you send me the 100 or so that you have completed and checked, and let the remainder follow whenever your Latin professor can get time to go over them. What I want is some considerable portion of the manuscript to show Sachlan when he gets here, so he may see that the job is at last nearing completion. You might also return the ~~xxx~~ blueprint.

The last letter I had from Rolf was dated Sept 21st, and I replied a couple of weeks later, and had expected him to send me some drawings of another lot of desmids from the Sudan which he wanted me to go over, but they have not come.

We don't get much news from Finland in our paper, and all I know is that the USSR doesn't like the new political setup in Finland, and is putting on pressure by refusing to buy Finnish products, which has caused a financial crisis in the country, because the Räsäski's are their largest customers. Probably there is nothing that the Finns can do except to comply with the Russian demands.

I don't see how this would affect Rolf personally, except that he might not get his salary from the institution where he works, and also it might ruin his chances of getting a grant to visit Montreal next year. He has been writing rather vaguely about the possibility of this, but he seems to be a little scared of the long journey, the different habits and strange foods, and the resulting unset in his way of living.

If I don't hear from by next week I will write him again and see what is the matter.

Sincerely,

Dec 5 1958

Dear Hannah,

Enclosed are drawings and descriptions of two new varieties of *Euastrum moebii*, for which I would like you to do the Latin diagnoses and return to me as soon as you conveniently can. These are for a small paper on Indonesian desmids, which will be a preliminary to the large one.

Glad to say that Mrs. Perine has now finished inking all of my 63 plates for the large paper, so it will not be necessary to trouble you with this. I am now struggling with a very extensive bibliography, and after that I can use all of the Latin whenever you can send it. My friend Sachlan, from Bógor, Java, who sent me all those wonderful collections, expects to visit us in New Orleans around Christmas, and I would like to have the Latin by then, if it is not rushing you too much, so that I can show him the paper in rough form, at least.

Edith and I are fine, and hope that you and your Mother are also.

Sincerely,

Sept. 24

Dear Scott,

Your manuscript arrived safely. I shall be glad to do the latin. Also I shall be glad to do the inking if your Mrs. Perine folds up on you temporarily. If-when you send it please send one of hers for a sample so I can match heaviness of ink line, etc.

Grönblad sent me the extra plates, but I haven't traced anything but the Southern U.S. desmids yet. You can have them back, of course. It may be ages before I get around to tracing ~~these~~ these later ones: Sudan and Australia, and I can perfectly trace them from the paper, so I'll send them back without waiting to trace.

I am writing in great haste now because I have stayed at the lab too late tonight trying to finish some latin for Silva, which I got delayed on, so my thoughts are confused, my grammar poor, and my Mother will be having jim-jams.

I'll try to write more intelligently soon

My best to Edith

Hannah

Sept 19 1958

Dear Hannah,

Under separate cover I have sent you by registered mail a set of descriptions of Indonesian desmids, for which I would like you to do the Latin diagnoses. The next taxa are underlined in red, so that you can spot them more easily. There is no great rush about this, though naturally I would like to have them as soon as you can conveniently do them.

I have drawn, in pencil, 63 plates of illustrations for this paper, showing more than 500 desmid taxa. They are being inked by my friend Mrs. Perins, but she has been going very slowly on them for the last two or three months. I have just learned that she is expecting another baby next Spring, and when in this interesting condition she suffers from nausea and general malaise, as on two previous occasions. No doubt this is the reason for the delay, but also I suspect that the job has turned out too big for her, and that she is tired of it. I expect to see her next Sunday and shall then find out what she intends to do. If she feels unable to finish the job I shall have to find someone else, and it occurred to me that perhaps you might be willing, if you have no other pressing obligations. She has completed about 35 of the plates, leaving about 28 still to be done. They are completely drawn in pencil, and all that is required is to ink over the pencil lines. Will you please drop me a line and let me know if you could do it?

Also I have sent you a reprint of the paper on F.W. Algae from Arnhem Land in North Australia, together with an extra set of the plates. If you do not cut up these plates for your iconograph I wish you would return them to me, after you have traced them.

I believe Rolf sent you an extra set of plates for the Sudan paper, as he did to several others. But unfortunately he sent only one set to each, and as the plates are printed on both sides of the sheet, two sets are necessary for cutting up. So if you still have these, will you please send them to me?

Just had a short note from Jerry, who is back on the job, and as usual up to his eyes and ears in work. How he manages it is more than I can comprehend.

I hope you and your Mother are well, and Edith joins me in sending our best regards.

Sincerely,

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

May 3

Dear Scott,

Thanks very much for the copy of the Sudanese paper - such beautiful pictures. What a pity that Bourrelly jumped the gun on you. I had just finished copying his plates. I haven't copied yours yet, since I'm waiting for the separate plates, as you suggest. But Rolf says, regretfully "there are a few of ~~our~~ ^{other} names decided on ~~their~~ ^{different} names." Will the same happen to your N. Aust. paper?

I received a small paper from Thomasow the other day, dated 1957 and noted "received for publication 1954".

Such incidents are a good argument for a substantial algae journal, available to all, so we could publish in true chronology.

Thanks also for sending me the Playfair papers. I'm working on them now, though I attach less weight to the one published after his death. It's much easier to copy from reprints than from the fat bound volume in the H.B.L. library, where I did the oilers.

We still have occasional frosts at night, but spring is on the way.

My best to Edith.

Harvard

April 23 1958

Dear Hannah,

Thanks for telling me about the prior use of the name *Spond. clepsydra*. I have never seen this desmid; it was one of Rolf's finds in my material, and a further search of the collection failed to reveal it. The drawing looks a little peculiar to me, but all I could do was to copy his sketch exactly. Maybe it will turn up again one of these days. I have reported the duplication of names to him, and a correction will have to be made, probably in the paper on Italian desmids that he is now preparing. Messikommer will no doubt think that we don't pay enough attention to his works, and I regret to say that for my part it is true. I shall have to study his papers more carefully.

I suppose you have finished copying the illustrations in the SE USA paper by this time, so you will be ready to start on a new batch, - in the paper on Sudanese desmids that I have sent you under separate cover. But if you will wait a little while you will receive from Rolf an extra set of the plates, which he forgot to order at the time of printing. These will be easier to trace from than the book.

In the meantime you can go to work on Playfair's 1907 and 1923 papers which I am also sending. You may keep these as long as necessary; I shall have no need of them for a considerable time.

The North Australian material is still awaiting a reply to turn out the complexities and red tape of Australian publishing. Three weeks ago I returned the checked page proof; if I have to proof-read it once more I shall be reciting the text in my sleep. Of course it's a big job to assemble and edit and publish the reports of a large expedition like this one, comprising a dozen different "ologies", written by more a dozen authors in several countries, and the editors have not made it any easier on themselves and the authors by a literal insistence on the most trivial minutiae of spelling, punctuation, abbreviations, etc. For instance they changed *Cosm. regnesii* to *regnesii* to comply with the 1956 Code, and I had to fight with them to make them retain the single *i* in *sebaldis* and *pseudsebaldis* which are exactly correct according to Rolf, who says the desmids were named for Sanctus Sebaldis who was a patron Saint of something or other. The first volume of the report has appeared; it deals with the primitive art of the aborigines, I believe, and costs \$18.00 in this country! The algae will be in Vol. III, Part II, Botany, and I hope it will get into print sometime this year.

There is still no bill from Princeton for the microfilm, but it's allright with me if they forget to send it.

Best regards and wishes from Edith and me.

Sincerely,

Beck - Mannagetta .1926 .

Algenfunde im Riesengebirge
Zobáštini otisk z Věstníku Král. Ces.
Spol. Nauk Tr. II Roč. 1926: 1-16, 40 fig.
(Reef has reprint, 3 fig.)

Messliemann 1954 Hydrobiologia p 34 I: 23-24
described f. latior.

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

April 10

Dear Scott,

Thanks for the letter. I am glad you received the microfilm, but sorry it was unperfected. Next time I'll ask 'em to make it perfected if possible. It was no trouble. Princeton did not send me the bill. I told them to send it to either of us. If it comes I'll pass it along.

It is a good idea to get the Phyco Soc. to invite Grünwald. I hope that works.

I did try once to buy the Playfair papers for the Linn. Soc. at New South Wales. All that was available were the complete journals of the Society, - very expensive. The only ones that I need by now, having copied them at Woods, (take now & then, are 1907 (Proc. Linn S. N.S.W 32:160-201) and 1923† (ibid 48:206-228). If you would lend me those some day I'd be grateful, but there is no hurry.

Have you been told that your new sp. Spondylosea clerydina sc. & gl. p 49, uses a name ~~that~~ used by Beckmannagetta 1926? I enclose reference

Did I ever get a copy of your paper on North Australian desmids? I have blueprints of your plates

but no reference to your paper. If you sent
it to me and I lost it I'm very apologetic,
but I'd sure like another copy.

Spring is a long time coming, here. We
have a warm day now & then, but it is
mostly bleak. We still have patches of snow on
the lawn

Give my best to Edith,

Sincerely

Harvard

Nov 22 1958

Dear Hannah,

Princeton sent me the microfilm of the parts of Brühl & Biswas' paper that you ordered, but there was no bill with it, so I suppose they have sent the invoice to you. If you will let me know the cost I will send a check right away.

Sorry I put you to all that trouble; I could have done it myself, but I got the impression from one of your former letters that the paper was in the Dartmouth Library, and naturally I assumed that they had a microfilm machine as most libraries have nowadays. So far I have not been able to examine the reproduction properly. I have an old SVE projector that was made for perforated film, and the unperforated kind would be damaged by the toothed sprocket. I thought I could remove the sprockets, but the machine is put together in such a peculiar way that I cannot figure out how to do it, though I rather fancy myself as a mechanic. Hand magnifiers do not give a large enough image, so I shall have to wait until I can make enlargements on paper. At present our tapwater is too cold for photographic work, and anyway I could not tear myself away from drawing the plates for the Indonesian paper.

Thanks for the loan of the drawings of *D. baileti* from your iconograph, which I am returning herewith. It looks as if my form is sufficiently different to be described as a new forma because of the longer apical processes.

I met Larry Whitford some 12 years ago, when he was stationed in N.O. for a time on a mosquito control project for the Government, and took him out on one trip to show him some of my favorite desmid hunting grounds. So I shall write him and ask if there is anything the Phycological Soc. can do to help Grönblad. There's not much possibility that they could do anything financially, but an official invitation from the Society might help Rolf in getting a grant from the Finnish Govt.

I have a complete set of Playfair's papers and shall be glad to lend you any of them for copying. But there is just a chance that you might be able to get the papers themselves by writing to the Linnean Society of New South Wales, Science House, Gloucester & Essex Sts., Sydney, N.S.W., which is the source from which I obtained them in 1948. They may still have some left. Playfair was an extremely clever draughtsman, but some of his desmid drawings are so stylized that they are not good representations of the actual objects.

With many thanks for your help, and best regards from Edith and myself,

Sincerely,

Feb 3

Dear Scott,

Thanks for the fine letter! It seems almost incredible that you should already have written the first draft of another long paper! What a lot of novelties you are bringing to light! I would not think it necessary for you to have Jerry read and emend any more. (This time, unless directed otherwise, I'll mail later back to you.)

In regard to your D. baileyi, the closest form to your fig. seems to be f. tetragonum per Skaya 1949, which paper you doubtless possess. I thought it might be most satisfactory to you if I sent you 'the works' from my iconograph, which I am not using at present, so there is no hurry about returning them. They seem to cover most of the forms (incl figs) in Nos dated to Indes. but nothing like yours.

The Bruhl & Biswas paper is not in our library, nor do we have a microfilm service. The library borrowed it from Princeton, and I have asked them to borrow it again. Then I can note which parts of the text and plates deal with desmids, and we can ask for a microfilm from Princeton or elsewhere. Our librarian says that the New York Public Library gives cheapest rates, & they have the journal. It is all simple, and I'll tend to it, but there

will be a little delay.

I traced all the novelties while I had the journal, checking something for you, but I did not list them, therefore they are lost in my files. All my systems break down like that - but if they didn't I'd have to spend all my time making perfect files.

As to finding money to get Grönbled to this country. I wish we could, but I don't know how. I don't know any big shots, except perhaps Wm R. Taylor, and he belittles Grönbled and would hardly be sympathetic. Also, he's sick. Maybe something could be done through the Physiol. Soc. I don't know Whiffard, the current president, do you? but I could ask Silva or Starr. I don't know whether Nat. Sci. Foundation pays for that sort of thing. I doubt it. I wish Prescott would stay home, so that we could ask him.

I'd agree with you entirely in putting E. moebii back in Euostrum. It just feels like a Euostrum to me. The X. bifurcatum of Borge certainly looks like M. anomala, but Borge's seem to have solid processes, which is more Xanthidium like. I don't have any of Playfair's var. in my icon. I am still shy a few Playfair papers.

We've had a long mild spell of weather, but now it is getting cold again.

My best to Edith
Harriet

Jan 30 1958

Dear Hannah,

Thanks for the birthday letter. Yes, I've rounded another of life's turns and am probably now in the home stretch; it is doubtful if I shall turn the next one, 10 years hence. If I do they will be pushing me around in a wheel chair, for the infirmities of old age are catching up with me, but fast!

Teiling will be 70 years old sometime in March; I don't know the date, but I am two months older than he is. He is in much better physical shape than me, because of the more active life they have to lead over there. When I was in Linköping I had some trouble in climbing the three flights of stairs to his apartment, while he went up them two steps at a time.

I am afraid there's nothing I can do towards healing the breach between them, because I am pretty much in accord with Grönblad about T.'s ~~xxxxxxxxxxxx~~ theories and revisions. I'll admit that he had some justification for combining certain *Arthrodesmus* species with the corresponding tri- and quadriradiate forms in *Staurastrum*, but he went too far and included certain *Arthrodesmi* that he merely thought ought to go in *Staurodesmus*. For instance he transferred *A. maximus* to *Staurodesmus*, though I am quite sure he has never seen it, and there is not the slightest evidence that either the species or the numerous varieties and formae in our SE-U.S. paper are ever anything else than biradiate.

Like wise with his *Actinotaenium*. I wrote and told him that I could not see that anything was gained, from a practical point of view, in splitting off this one group of cylindrical *Cosmaria*, unless he was prepared to go on with the revision of all the remainder of the genus. To which he replied rather indignantly that Rome was not built in a day, and that the architect-builder had to assemble the stones before the edifice could be erected. OK; but when he gets through I don't think his classification will be much more satisfactory than the other attempts that have been made to split up this genus. As I see it, all such schemes are arbitrary because Mother Nature does not use a card index. The author of such a plan convinces himself, and gets some of his friends to agree with, and even converts others more or less against their will, but there still remain some rebels who refuse to be converted, just as in politics, religion, art, and everything else, and in the present instance I am one of them.

And yet I myself am making some changes in genera, because additional evidence that I have accumulated seems to make it necessary. *W&M* transferred *Euastrum moebii* to *Micrasterias* because they thought the polar lobe looked more like a *Micrasterias*. Krieger wrote that its generic position is questionable ("strittig"). I have two new formae and one new variety that make it even more questionable, so I have written a short paper attempting to prove, by a detailed consideration of the lower lateral lobes, the upper ones, the polar lobe, the central tumor and its ornament, and the wall sculpture, that the *Euastrum*-like features more than outweigh the *Micrasterias*-like ones by a considerable margin. Prescott has approved the transfer in principle, but has not yet seen the paper, which will have to await his return from Ecuador.

Again, I am transferring *Xanthidium bifurcatum* Borge to *Micrasterias anomala* because of certain connecting and intermediate forms that I have found. This is a very little known group, and it is possible that some of Playfair's Australian varieties of *X. bifurcatum* may have to be transferred when more is known about them.

Yes, I have another large array of desmids, this time from Indonesia. By a coincidence I have just today finished typing the first draft of a rather lengthy paper listing more than 500 taxa, with their dimensions, habitats, some critical comments, and descriptions of the many novelties. This also must await Jerry's return for reading and his inevitable emendations; after this I will send you the paper for the Latin. So ~~tomorrow~~ I shall clean off my drawing table, which is literally covered with the reference works that I have been consulting, put on a new backing paper, and go to work drawing them, which is what I love. The paper is supposed to be published as a special issue of "Reinwardtia", provided the expulsion of Dutch nationals from Indonesia does not interfere with its publication. I am afraid that several noted botanists will be removed from the staff of the Jardin Botanique de Suintenzorg, or the Kebun Raya Indonesia, as they now call it.

Some time ago you gave me a list of the desmid novelties in Brühl & Biswas' Indian paper (1926) Algae of the Loktak Lake. I think I ought to check this against my Indonesian drawings, because it's just possible that some of their novelties may be identical with mine. Jerry does not have the paper, and though I could no doubt get it from Farlow, they messed up my last order so badly that I'm afraid to ask them to photocopy certain parts of it. So would you be kind enough to ask your library to make a microfilm of only those parts of the text and plates that deal with desmids? I will send a check as soon as you tell me the cost.

Enclosed is a sketch of an unusual form of *Desmidiium baileyi* with extra-long processes, which I believe to be new; at least I cannot find anything like it in my literature. But there is a long list of formae and varieties in Nordstedt's Index, many of which I do not have. Would you see if you can find it in your iconograph? You don't need to return the sketch.

A couple of months ago Grönblad asked if I would attend the Montreal Congress next year, to which I replied that I have had some vague thoughts of going, but that I could make up my mind very quickly if I knew that I should meet him there. He said in reply that he would see if he could get a grant, and that it would also depend on his health which is not too good at present. It occurred to me that you know some of the big-shots, and perhaps can ascertain if there is any U.S. or Canadian fund that might make him a grant for part or all of his expenses. It would indeed be delightful if we could all get together for a gabfest. All the US and Canadian phycologists will be there, and we might even coax Irene-Marie out of hiding, or if not we could go and surprise him, for he lives only 40 or 50 miles from Montreal.

We have had a couple of small freezes here, down to 23°, just enough to kill our subtropical plants, though most of them will come up again. But all this month it has been uncomfortably chilly, down to 38 or 40 at night and not much higher than 50 or 55 during the day. Florida was hard hit by a freeze that caused enormous damage to the citrus crop. Some friends of ours who drove to Miami for the Christmas holidays were glad to get back to New Orleans, and said they had never been ~~xxx~~ so cold there.

It is good to know that you and your mother are in good health. Edith and I are also, though today she got up for the first time after three days in bed with a severe head cold. Both of us send you our best regards.

Sincerely,

Jan 27

Dear Scott,

From Finland and Sweden comes news that you are celebrating your 70th birthday this month! - tomorrow, I think I should have written sooner, but I am so engrossed in putting your last paper into my iconograph, that I have not been able to tear myself away for any letter-writing. Grönblad told me that Teelis also is having a 70th birthday this month, and he seemed to think that a celebration was in order. Perhaps we can all meet in Montreal in 1959 and have a jamboree.

The plates of the Scott-Grönblad paper have been a joy to copy: first because of the extra plates you sent me, second because the descriptions are so pithy, third because I am now using the tracing paper you recommended, and it certainly handles nicely. I'm up to plate 32 now, and so, near the end. I haven't sorted the new things into my iconograph yet. That will be quite a challenge. I learn a great deal, perhaps the hard way, by trying to file all my drawings systematically. For some sp. genera I use Rabenhovst as my skeleton, for most genera I use Westw., but for the Staurastra with processes I ditched Westw. and compiled my own system. It will have its first severe test when I try to fit all your new species into it.

I'm interested to know what you are working on now. In the SE.-U.S. paper you make occasional references to unpublished novellas from Java etc. Do you have another vast collection of new things? Will you be collaborating with Grönblad again?

(Don't bother answering me until some time you are writing about latex, or such. It is just idle curiosity).

What I wish the most is that you, as a great friend of both, could heal the breach between Teeling and Grönblad. Roy never mentions it, but Teeling broods. It seems such a pity.

We are with the kids on our "January Thaw" here. We had a couple of feet of nice clean snow, but it has been rained or-frozen-& rained on again, until everythg is sodden and dirty, and sidewalks are rough and icy. From the point of view of the payer of fuel bills it is fine, but it is hard on the many students & props, and children, who want to ski. Our famous "Carnival" is scheduled for this weekend. The boys tried to make their snow sculptures, but they get draggled with rain. My sidewalks are hazardous for Mother, but she is in fine health and ventures out boldly. We are very snug with a warm house and open fire.

Many happy returns of the day! and my best to Edith - Hannul

Jan 28 1958

Dr. Donovan S. Correll,
Texas Research Foundation,
Renner, Tex.

Dear Dr. Correll,

On Jan 3rd I sent you a letter addressed to Beltsville, Md., advising that I was also sending a paper that I wished to submit for consideration for the Cooley award. The letter has apparently been forwarded to you; at least it has not been returned to me. The book, however, was returned marked "Moved; left no address", no doubt because it would have required additional postage for forwarding. It has taken me a week to ascertain your new address, and I am now sending the book under separate cover. If you received my letter of Jan 3rd all well and good; if not will you please drop me a line so that I may send a copy of it.

Sincerely yours,

ARTHUR M. SCOTT
2824 DANTE STREET
NEW ORLEANS 18, LA.

Jan 21 1958

Dr. Robert F. Thorne, Secretary,
Am. Soc. Plant Taxonomists.
Depp. of Botany,
Iowa State University,
Iowa City.

Dear Dr. Thorne,

A couple of weeks ago I sent a letter to Dr. Donovan S. Correll at Beltsville, Md., and another package containing a book. The package has today been returned to me marked "Moved, left no address", though the letter has apparently been forwarded to him.

Will you please note his present address on the bottom of this letter and return it to me in the enclosed stamped envelope?

Many thanks in advance.

Sincerely,

Arthur M. Scott

Dr. Donovan S. Correll
Texas Research Foundation
Renner, Texas

R. F. Thorne

TEXAS RESEARCH FOUNDATION
RENNER, TEXAS

January 30, 1958

Mr. Arthur M. Scott
2824 Dante Street
New Orleans 18, La.

Dear Mr. Scott:

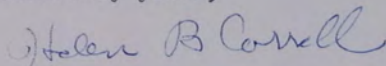
My husband is now in Chile doing field work. He expects to remain in South America until April. Meanwhile I work in the Herbarium and check on his mail here at the Foundation about twice a week in his absence.

Your letter of January 3rd was forwarded from Beltsville several weeks ago. I waited until Monday of this week, expecting the paper to be forwarded also. When it had not arrived in that time I wrote to the office at Beltsville asking about it. Apparently the stamp "moved; left no address" was put on at the Beltsville Post Office because everyone in the Plant Introduction office certainly knows where my husband is located (the Head of the Division visited us in December).

I have delayed acknowledging your letter until the paper arrived - thinking it, too, would be forwarded. I am not forwarding any mail to my husband because we do not want things of importance lost in the mail. There was a mail strike in Lima, Peru in December. When my husband arrived in Lima on December 30th the mail he had sent to friends there early in the month had not been delivered. I tell him of the letters which have come but I file the correspondence for him on his return.

Your letter, and paper when it arrives, will be placed in the Cooley Award file for my husband's immediate consideration upon his return.

Sincerely yours,



Helen B. Correll (Mrs. D. S.)

Jan 3 1958

Dr. Donovan S. Correll,
§ U.S. Dept. of Agriculture,
Beltsville, Md.

Dear Dr. Correll,

Under separate cover I have sent you a paper that I wish to submit for consideration for the Cooley award for 1958, entitled "New and interesting desmids from the southeastern United States", by Arthur H. Scott & Rolf Grönblad, in Acta Soc. Sci. Fennicae, N.S.B, II, No. 8. 1957.

The paper describes and illustrates 45 new species, 135 new varieties, and 28 new formae, a total of 208 new taxa, a much larger number, I believe, than has been listed in any paper since the pioneer work of Rev. Francis Wolle in the 1880's. Together with some other novelties described in previous papers represent the cream of my collections in southeastern U.S.A. during the period from 1938 to 1954. Still to be written up are several hundred known species from this region.

This paper will be judged on its own merits, of course. Nevertheless some additional information may be of value to the Committee. I am a retired structural engineer, 70 years old this month. The collection and study of desmids has been my hobby for the last 20 years, to which I have devoted nearly all my spare time. Never having had any training in any branch of biology, I had to learn about desmids the hard way, by self-study. There is nobody else in New Orleans, or in the whole of Louisiana, as far as I know, who has an interest in desmids, so I have been working entirely alone, with only such help as I could get from books and from correspondence and collaboration with experts like Prof. G. W. Prescott of Michigan State Univ., and Dr. Rolf Grönblad of Finland. Prescott is the best desmidiologist in this country, and Grönblad the best in Europe, perhaps in the world.

During these 20 years I guess that I have spent not less than \$10,000 on this hobby, maybe a good deal more. The only assistance I have received was a grant of \$50 from the New Orleans Academy of Sciences, about 1942. While I was working at my profession and making a good income this expenditure did not matter, but now that I am retired on a greatly reduced income I have had to curtail my spending. In any event my collecting days are over because of old age and impaired health. But during recent years I have been able to obtain, by correspondence, some valuable collections from other parts of the world, Brazil, Peru, Uruguay, Indonesia, several different parts of Australia, and a few from Africa. One of these (Peru) has been published; others are in press at the present time, and I am now working on a large paper that will describe more than 500 taxa from Indonesia, in collaboration with Prescott.

Since there are no phycologists on the Committee, the members may not feel able to judge the merits of the paper. In that case I might suggest that you ask for the opinion of Dr. Jules Brunel, Dept. of Botany, University of Montreal, and/or Dr. Wm. Randolph Taylor, Dept. of Botany, Univ. of Michigan, both of whom have copies of the paper. I am known personally to both of them, but I don't think that would influence their opinions. Dr. Paul C. Silva has probably heard of me through Prescott, and also might give an opinion, though he is not a desmid specialist.

Below I give a list of the other papers in which I have collaborated, and one that I published in my own name.

If I am fortunate enough to win the Cooley award I intend to divide the money equally with Dr. Grönblad. I am a member of the Am. Soc. of Plant Taxonomists; Grönblad is not.

Sincerely yours,

- Prescott, G.W., & A.M.Scott. 1942. The freshwater algae of southern United States I. Desmids from Mississippi. Trans. Am. Microsc. Soc. LXI:1.
- _____ 1943. The desmid genus *Micrasterias* in southern United States. Pap. Mich. Acad. Sci., Arts & Lett. XXVII.
- _____ 1945. The freshwater algae of southern United States III. The desmid genus *Euastrum*. Am. Midl. Nat. 34:1.
- _____ 1952. Additions to our knowledge of the desmid genus *Micrasterias* 2. Trans. Am. Microsc. Soc. LXXI:3.
- _____ 1952. Some South Australian desmids. Trans. Roy. Soc. S. Austr. 75.
- Scott, A.M. 1950. New varieties of *Staurostrum ophiura* Lund. Trans. Am. Microsc. Soc. LXIX:3.
- Scott, A.M., & G.W.Prescott. 1949. *Spinocosmarium quadridens* (Wood) Presc. & Scott and its varieties. Ibid. LXVII:4.
- Scott, A.M. 1954. Some new and little-known desmids from North Australia and Indonesia. Rapp. 8me. Cong. Int. Bot. 17:107-109.
- Grönblad, R. & P. Kallio. 1954. A new genus (*Amscottia*) and a new species among the desmids. Bot. Notiser 1954:2.
- Grönblad, R., & Scott, A.M. 1955. On the variation of *Staurostrum bibrachiatum* Reinsch as an example of variability in a desmid. Acta Soc. Fauna et Flora Fennica 72:6.
- Scott, A.M., & G.W.Prescott. 1956. Notes on Indonesian freshwater algae I. *Staurostrum wildemani* Gutw. (Desmidiaceae). Reinwardtia 3:3.
- _____ 1956 (1957). Ibid II. *Ichthyodontum*, a new desmid genus from Sumatra. Ibid 4:1.
- _____ 1958. Ibid III. New varieties of some little-known *Staurostra*. Ibid (in press).
- _____ 1957 (1958). Some freshwater algae from Arnhem Land in the Northern Territory of Australia. Rep. of the Arnhem Land Expedition, Vol.3, Part 2. Melbourne University Press (in press).
- Krieger, W., & Scott, A.M. 1957. Einige Desmidiaceen aus Peru. Hydrobiologia IX:2-3.
- Grönblad, R., G.A.Prowse, & A.M.Scott. 1958. Sudanese desmids. Acta Soc. Fauna et Flora Fennica. (in press).
- Scott, A.M., & G.W.Prescott. 1952. Additions to our knowledge of the desmid genus *Euastrum*. Hydrobiologia IV:4.

Dec 8

Dear Scott,

Thanks for the check. I am very sorry that I returned the mss. to Prescott. He didn't say what to do with it - just said to let him know at once if I couldn't write the latin. So I gathered he was in a hurry for it, as usual, and didn't wait to ask.

I don't like his editing either. He always reverses my carefully planned set-ups, but I never feel that I know enough to argue. Next time I'll send them straight back to you.

It seems to be a rule that "-anus" refers to countries, and "-ensis" to smaller places: cities and islands. I don't know about "-icus".

I also had a cheery letter from Teeling; all seems to be going very well there. I haven't heard any more from Gimblad. W.R. Taylor is very sick w/ "infectious hepatitis", and he says G. M. Smith "picked up a far worse bug (? in Bali) and is in worse shape, I hear."

No, I doubt if we'd ever get Gimblad into this country - or that he'd like it. His diet is less alien to our N.E. diet than to yours. I

enjoyed the fish while I was there - but
I don't remember having to eat it raw!

I haven't seen Teeling's last paper. But
I can't, myself, imagine C. moniliforme
in Spondylosira. I'd be interested to see his
Case for it.

My job is keeping me so busy that I
have little time for algae these days.

I had a chance to examine some material
from Greenland's ice caps - wind blown dust -
which unquestionably had had algal material.

But the boys had let it putrify, and there
was little left than was recognizable.

Mother and I are both pretty well. We
have a new puppy - a beagle hound, which
adds to our trouble - and pleasure.

Best wish to you and Edith.

Harriet

Nov 22

Dear Scott,

Your forma biradiata, S. freemani
v. nudiceps arrived, and I added the latex
and returned it to Jerry and the other
Indonesian novelties. I returned them,
airmail, on the 197L.

I knew Jerry was going to Ecuador
again but hadn't heard about the truck.
What a headache full of arrangements! I'd
like to hear more about it, but he's always
too busy to write. Maybe if he goes through
New Orleans you can glean some details and
pass them on.

Teiling's last paper arrived today, so I
guess you have a copy too. and recently I
had a very happy letter from.

On the other hand I had a very sad
letter from Gribblad, reporting that he had had
flu followed by pneumonia, saying
"This last year has brought only bad luck to me"
He ends his letter, saying. "In three months

DARTMOUTH COLLEGE
Library

we have not seen the sun ten times.
Every day it is raining, the late fall
is mostly very bad in our country. I
would like to live in a warm place
where the sun is always shining. But I
am too old and frail to move anywhere.
You see my mind is quite pessimistic!"

I have never heard him sound so
miserable!

A teacher I once had at Univ. of Penna. got
pneumonia 2 winters running, got scared, &
retired before his time to spend winters in Florida
and summers on Cape Cod. He is now in his
middle eighties and going strong! How I wish
I could wangle something like that for Gribblad.
Winters in New Orleans and summers in Hanover
would probably be fine for his ~~best~~ health, and
fun and profit for you and me, but since
we work on algae, and not guided missiles, I
don't see how we could finance it.

I don't think I ever said 'thanks'
for sending the extra plates of your big paper.
I am delighted to have them.

Please give my best to Edith

Haskell

Dec 3 1957

Dear Hannah,

Apparently Jerry forgot to ask you to return the Ms. and Latin direct to me, as I had requested him. Since you sent it to him he took the opportunity of rewriting it in toto, making many small emendations in the wording, some of which are good and some that I don't like. For instance, he added the micron symbol after all the measurements, while I had deliberately omitted it and stated in the preamble that all dimensions were given in microns. Also he rearranged the order of the taxa, making them alphabetical, while I had arranged them in evolutionary order, starting with the simplest form and ending with the most complex. But I suppose that professors and editors can't help being that way!

Enclosed is my check for \$12.00 for the Latin, with many thanks for doing it so promptly. I note you changed 'indonesiense' to 'indonesianum', and this is the first time I have heard that there was any preference, except euphony, between the endings -icus, -anus, and -ansis, all of which have the same meaning 'belonging to', according to Jaeger's Source-Book.

I had a nice, chatty and cheerful letter from Teiling a few days after I wrote you last. He said that his wife's anxiety and despondency about her cancerous condition had been at least partially relieved when 40 X-ray pictures failed to show any increase in it. That must be an extremely unpleasant thing to have to live with especially if she is of the anxious type. My doctor informed me that April, when I was hospitalized, that I had a heart condition and atherosclerosis, which I had not previously suspected, but I refuse to worry about it. My wife worries enough for both of us, but she is naturally a little worry-wart.

Grönblad wrote me some months ago that he has been in the hospital with the 'flu, but I didn't know that it turned into pneumonia. His letter was not too doleful, though he said he was still weak and unable to do much work. Some years ago Teiling told me that Rolf is subject to occasional fits of black depression, when he was unable to do anything, even to play his piano. He suffers a great deal from his rheumatism; I slept in the same room with him a couple of times when we were away from Karis, and each time he was unable to sleep and paced the floor most of the night trying to get some relief. It would be fine, so we think, if he could live in N.O. during the winter and in Hanover in the summer, but he is too set in his ways, like most old bachelors, to accommodate to our way of living and especially the rich food in New Orleans, just as I could not have stood for much longer the kind of food they eat in Sweden and Finland. Fish, fish, fish; raw, salted, smoked, or boiled; never fried or broiled or baked. I would like to introduce them to a nice broiled pappano with a rich and highly flavored butter sauce like they prepare at the Columbia restaurant in Tampa, Fla. If you ever go there don't miss this place; it's the best I know, and there are several world-famed restaurants in N.O.

Teiling's last paper came about a week ago. I can't go along with his transfer of *Cosm. moniliforme* to *Spondylosium*; there seems to be no reason for it, even if the plant does occur in short filaments. I have found *Cosm. regnellii* f. *catenata* Krieg. in filaments up to 14 cells long, but that does not change it to a *Spondylosium*; and there is no globular *Spond.* like *C. moniliforme*.

I hope that you and your mother are in good health, and that everything else is going well.

Best regards from Edith and myself.

Delta State College

Cleveland, Mississippi

November 26, 1957

Mr. Arthur M. Scott
2824 Dante Street
New Orleans, Louisiana

Dear Mr. Scott:

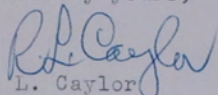
I want to take this opportunity to thank you for the numerous publications of the Desmids which you have sent. I am especially appreciative of the recent publication by Scott and Gronblad.

Dr. Harold Humm and I have had a recent publication of the MARINE *algae* OF MISSISSIPPI SOUND which was published in MARINE SCIENCE. If I can get them to send my reprints, I shall remember you.

In the meantime, if any contributions to a MONOGRAPH which will be published by the NATIONAL RESEARCH COUNCIL, and would like to quote your publications and use the genera you have published on, and examples from S. E. U. S. A. We have an interesting area here in the Delta as a result of the large rice plantings.

Thank you again.

Sincerely yours,


R. L. Caylor

RLC:vw

Nov 29 1957

Dr. R. L. Caylor,
Delta State College,
Cleveland, Miss.

Dear Dr. Caylor,

Thanks for your nice letter; it is good to receive such expressions of appreciation.

You do not need any permission to quote my publications or to use any of my illustrations. In fact if there are any special ones that you wish to publish I can furnish you with copies of my large drawings which are suitable for reduction to half-size, and all you would have to do is to ink them.

The Monograph to which you are contributing sounds as if it might be the one on *Hydrobia* described by the National Research Council. He has invited me, and Hannah Crossdale, and W. F. Wade to collaborate with him in this work; my part will consist principally of providing drawings of the several hundred desmids that I have collected in the southeastern region.

Prescott was in New Orleans last April and spent a couple of days with me, and I took him out to see some of my desmid hunting grounds in St. Tammany Parish. Unfortunately he had such a terrific cold that I am afraid he did not enjoy it much. Last June I spent a week with him in East Lansing, using his iconograph to identify some 500 desmids from Indonesia, which I am now writing up for publication under our joint authorship. Soon he will leave on another of his trips to Ecuador, and this time may go by way of New Orleans, and if he does I shall have the pleasure of seeing him again.

With best regards,

Sincerely yours,

Nov 13 1957

Dear Hannah,

Jerry writes me that he has forwarded to you the rough draft of a short manuscript on Indonesian desmids, for which I would like you to do the Latin diagnoses. Since the Ms was written and the drawings made, I have discovered a single example of a biradial form of *St. freemanii* var. *nudiceps*, shown on the enclosed sketch, with a brief English diagnosis. Will you please translate this into Latin, and you may write it on the sketch, below the English. The illustration will have to be inserted as a text figure in the paper.

I suppose Jerry has told you that he is going on another trip to Ecuador. It must be something of an expedition, for he is going to ship a truck down there, either from New Orleans or New York, so perhaps I may see him down here again soon. I hope so, for I have several things to discuss with him regarding the large Indonesian that I am now working on. I shall have a lot of Latin for you early next year.

Haven't heard from Teiling for a couple of months, but I understand he has a new paper on plankton desmids.

Grönblad and I are busy checking proofs for the Sudanese paper, which ought to be printed in the next few months.

Best regards from Edith and myself.

Sincerely,

Sept 15 1957

Dear Hannah,

I have on hand a surplus of the extra plates for the USA paper, so I am sending one set to you. After seeing them you may decide to avoid the big job of tracing them, but even if you do not change your mind it will be easier to trace from the loose sheets than from the book. You don't need to return them.

Glad to know about the Koh-i-noor Rapidograph and Wrice pens. I shall try to see them at the shop where I buy my drafting supplies, and perhaps buy them for my friend Mrs. Perine who inks my drawings.

Hirano's illustrations are good, but I don't care particularly for his stiff, stilted style. His figures look as if they had been drawn by a mechanical engineer. He has been publishing on desmids since 1943, and I think I have his complete set; if you want them just tell me and I'll gladly lend them to you. Another Jap, Shoichi Hori, from Gunma University, has some rather good drawings, but many of his determinations are woefully wrong.

Do you have Kossinskaja's papers? I have some, including the first two parts of a series "Flora plantarum cryptogamarum URSS". They are all in Russian, but the names, synonyms, and citations are in English, and she gives Latin diagnoses of the few new taxa. The illustrations are very good, though many of them have been lifted from previous authors, with acknowledgements. I notice you spell her name E.K. Kossinskaja, but the "E.K." is the Russian version of her initials, what they stand for I don't know. In English the name is G.O. Kossinskaja; it appears thus on the title page of one of her books, with E.K. КОСИНСКАЯ on the opposite title page which is printed in Russian.

Just now I'm stuck with two *Arthrodesmus* species from Indonesia. One of them agrees exactly with *A. subvalidus* Grönbl. which has 2 pyrenoids per semicell, but my plant also occurs in the same collection with only 1 pyrenoid. Another very large species agrees almost exactly with *A. maximus* var. *eclipticus* Scott & Grönbl. but has only 1 pyrenoid while *eclipticus* has 2. Rolf thinks that the difference between 1 and 2 pyrenoids is enough to justify assignment to two different species, if I understand his position correctly. I'm going to send him copies of my sketches and ask for his help.

Thanks for sending the papers to Dr. Prowse. I am asking some others of my friends to do the same, to help him build up a small library on desmids, but his principal trouble will be in getting copies of the out-of-print works on southeast Asian desmids, like Turner and WRM's Ceylon and Madagascar papers which are indispensable for studies of that region.

Best regards from Edith and myself.

Sept 8

Dear Scott,

Thanks ever so much for all your trouble answering my question about tracing paper. I think I'll try a large tablet of the Albanene #195-L. I had been trying to figure out what your paper was by referring it to a Brenning sample book but I couldn't find it for sure, and the stuff is too expensive to guess wrong. I have some pounce, but it is a nuisance, and I never have it when or where I need it. I've done a lot of my iconograph. work at times when most women snit: baby-sitting, waiting in doctor's office, etc., and I like to keep my equipment to a minimum. I do the tracing carefully, of course, usually with a magnifying glass, but on the sheet beside the picture I copy the basic description - the size, and any feature not clearly shown by the figure. And that job I can do anywhere, with merely a fountain pen, if the paper takes it ink. (Next time I make duplicates by accident I'll send you a sample) To me it is far more useful than Jerry's - only not yet as complete. I'm concentrating on getting the original fig. & descript. of all new things - old and new, and then in what I consider the best authors, I copy completely. I now have practically everything of Borje Nordström, Scott, etc. (altho' your last paper will be a heavy chore.) I shuffle my copies around as much as I want. I have

Staur. graft of various authors filed in at least 10 places - but I have a careful cross-reference - alphabetical. Actually, the job of allocating new spp. to their proper systematic position is fascinating and educational. (I do Greens, Bluegreens & Heteroblasts. Too)

I was copying, new things only, from one of the Hirasu papers as I stayed home from the lab last night to give Mother moral and physical support in handling a newly-acquired puppy. (He was good, but heart-breakingly lonely for his 6 brothers and sisters.). I have Hirasu 55 + 56 but am missing 48, 50 + 53, which seem to have more new things. I'll write and ask him

for them.

Yes, feeling talked me into buying me 1st Pelikan pens and I used it for my Cosmania paper. Later I bought another for a friend. It is good, but not as good as my latest find which has supplanted it: "Koh-i-noor Rapidograph Technical Fountain pen #0" from Koh-i-noor Pen Co., Inc. Bloomsbury, N.J. (\$4.50). All the drawings in my Staur. paper (and a book I illustrated) were made with this + Wrico pens #6 + #7. All are fountain-pen type (using India ink) so you can lay them aside without their drying up. (Pelikan not in actual use has to stand nose-down in ink-saturated glass wool - or such)

I sent Proxse my desmid papers & a few duplicates of other aucts - Thanks again Haund

Sept 3 1957

Dear Hannah,

Here's the sample book of tracing papers and cloths. In it you ought to be able to find something that will suit your fancy.

Last week I returned Messikommer's book to you. I have copies on microfilm the plates and text relating to them, using an improvised copying setup based on a Leitz Focomat enlarger. The film has been developed and the negative looks OK, pretty good for a first attempt. I shall not enlarge it on paper until next month when the weather will be cooler. Today my room temperature is 83° and tap water about 80°, and though it is easy to cool a few ounces of developer and fixer to the required 68°, it would be quite a job to cool several large dishes each containing half a gallon, which would be in use for a couple of hours.

Many thanks for the loan. If you are ever in need of desmid literature concerning tropical or subtropical desmids, let me know; I have a pretty fair selection.

Sincerely,

Reuffel & Co. Albany #195 L
150 sheets 25x14 #6³⁸ in 1956

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

August 22

Dear Scott,

The big paper arrived! Thank you very much. Gosh, I don't wonder that you are "quite proud". What a paper! All those novelties, and all those beautiful drawings! I shall certainly get them into my iconograph, but you needn't send me extra plates, thanks. I started tracing, long ago, and although it may be slower I keep it up, the drawings (11000 by now) file so compactly. But I'm still hunting for the perfect tracing paper: one that will take India-ink fountain pen ink, be transparent, durable, and not too expensive. Would you recommend the kind you use on your drawings? What is it called?, and where obtained?

The only Staurastrum Freemanii I have in my iconograph is West's original, from Ceylon, but of course I'm not complete. Does your expressed interest mean that you would like a copy of the fig. and/or description? or do you have it?

No, I certainly make no charge for little choos like this, I enjoy them, and they often call my attention to something missed. I only charge for the latter because otherwise people hesitate about asking me for big lots. I'm in debt to you anyway for the many reprints, including this last wonderful one. Thanks again
Humb

Sept 2 1957

Dear Hannah,

Thanks for the kind words about the paper on USA desmids. I know that it will be of great help to future workers who collect in the southern States, and perhaps it may stimulate new students.

The third part of your Alaskan paper arrived a few days ago; many thanks. The three parts are now bound together in a Gaylord binder, and I expect to make a lot of use of it. Though many of the species are Arctic, some are cosmopolitan and I have found them even in tropical material. The paper will be particularly valuable for the long series of *Cosmaria* which are so troublesome to identify. I suppose you have received Minoru Hirano's first three parts of his *Flora Desmidiarum Japonicarum*, which also has a large number of *Cosmaria*, though some of his determinations are open to question.

Staurostrum Freemanii and var.

I have W&W's paper on Ceylon, containing the only picture extant of ~~*Staurostrum*~~ *triquetrum*, and my only interest in Crow's list is that his mention of *Freemanii* is the only other one that I know of. I have written a short paper on this desmid and some new varieties of it, also two other little known *Staurostra*, and will send it to you later on for the Latin diagnoses. But I must wait until Jerry returns from his Western trip so that he can approve it first.

Surprised to learn that you have traced all the illustrations for your iconograph. That's an immense amount of work, but I can see that they would file more compactly and save a good deal of money for photocopying. I found Jerry's iconograph very troublesome to use, and if I had started one I believe I should have arranged the drawings in morphologically similar groups, though that would have required a cross index for the alphabetical sequence.

The search for the perfect tracing paper is a never-ending one. In my forty years of engineering drafting I tried dozens of different kinds. The one I am now using for my camera lucida sketches and also for the large plates is the same kind that I used during the last few years of engineering, and I like it better than any other that I have found in this country, though Grönblad also has a very good one with a somewhat harder surface. Ask him to send you a sample for trial, and if you like it he could easily send you a roll. My kind is made by Keuffel & Esser, and is known as "Albanene" #195-L. It is also made in a somewhat thinner variety, #195-T which might be better for you. For camera lucida sketches I buy the paper in cut sheets $8\frac{1}{2}'' \times 14''$, which the vendor cuts in half on a paper trimming machine, to make sheets $7 \times 8\frac{1}{2}''$, and I then glue them up into pads myself. 150 sheets $8\frac{1}{2}'' \times 14''$ cost me \$6.38 in 1956, but every time I buy a new lot it seems that the price has gone up a little. The thinner paper costs a trifle less. For my large plates I buy a 20-yard roll 36" wide for \$8.90, and cut it on my circular saw, wrapping and all, into one roll 16" wide and another 20", which are convenient sizes for my plates. The roll can be cut by hand with a hacksaw or carpenter's saw, though not so neatly, and I have cut many of them with a strong pocket-knife. Don't you try it though, or you'll get some lovely blisters on your fingers. This paper, and many others, is sold by shops handling engineering and architectural draftsmen's supplies, frequently called Blueprinting Companies. I am sure that any of the professors, or students, in your architectural or engineering departments can tell you where to buy it. In the next few days I am going to send you a sample book with several kinds of tracing papers and cloth; the Blueprint Co. promised to send it to me last week, but have apparently forgotten.

Sometimes the surface of tracing paper or cloth seems slightly greasy or waxy and refuses to take the ink properly. To overcome this draftsmen use a powder called "pounce", which seems to be very finely powdered pumice. It is sprinkled lightly over the paper and rubbed in with a clean cloth, and then dusted off. It produces a slight tooth which takes ink and pencil very well. Occasionally I have used talcum powder for the same purpose.

Did Teiling show you a special fountain pen for Indian ink, called the Pelikan? I bought one in Linköping for 16 kronor, which included a tube of ink and several nibs of various widths, for producing fine, medium, or heavy lines. I do very little ink work so I gave it to Mrs. Perine who inks my drawings, but I think she has not yet tried it. Teiling recommended it very highly. It is also sold in this country, by the same dealers in draftsmen's supplies, but of course at about double the price.

If I have made this request before please forgive me. I would like you to send whatever reprints on desmids you have available to Dr. Gerald A. Prowse, Fish Culture Research Station, Batu Berendam, Malacca, Federation of Malaya. He is the man who sent Grönblad and me that wonderful stuff from the Sudan, and also several samples recently from Malaya. I met him in London two years ago, together with Dr. Julian Rzoska, Chief of the Biological Unit at the Univ. of Khartoum. Prowse is about 28 years old, an Englishman, very enthusiastic about desmids, but just a beginner in their taxonomy. He had gone to a lot of trouble making drawings (in Khartoum) of the Sudanese desmids; they were similar in style to Skuja's, very black with much stippling, but unfortunately quite useless for a taxonomical paper, and G. and I were unable to use any of them, which must have been a woeful disappointment to him. I tried in London to prepare him for the shock, but I couldn't say very much in the presence of his Chief. Now he has moved to Malacca, and is going to study the FW algae of that region. He has just published a small paper introductory to the study of Malayan desmids, hoping to arouse interest in the subject. The text is OK and the illustrations reasonably good, but unfortunately there are many wrong identifications because of his lack of literature and also of experience. He has found many rare desmids of which there is only one illustration extant, and he doesn't have that one; for instance, *St. Zahlbruckneri*, *Dysphinctium Luggerheimianum*, *Streptonema trilobatum*, &c., and instead of sending his sketches to Grönblad or me for a check he rushed into print too soon.

Best regards and good wishes from Edith and myself.

Aug. 1, 1957

Dear Scott,

Thanks for the drawings of *Arthrodesmus psilosporus*, which I will be very glad to tuck into my files.

And congratulations on finding the material in that hopeless-looking slide. I admit that I looked only casually, but, to my shame, I saw no desmids at all.

I am enclosing summaries of the two references you asked me about. As you can see there is not much of interest in them. I do not have reprints, but the journals are readily available in our College Library, which is only across the street from my building.

The 1942 Messikommer was mailed off to you today. Keep it as long as you want; I probably wouldn't refer to it for months or years.

I enjoy doing little chores like this, and usually, in the process, come on something that I would normally have overlooked, so call on me anytime.

Sincerely,

Hannah

Aug 9 1957

Dear Naznah,

I did not expect you to go to the trouble of copying the lists of desmids that I asked about, but I am very grateful for them. I have been worrying about not seeing these two papers, for fear that they might contain some of the numerous novelties in my Indonesian stuff, and its a relief to know that they do not. Its rather strange, however, for in the Indonesian samples I have discovered new species or varieties in almost every tube. Crow's list from Ceylon is a typical Indo-Malayan-Indonesian population, and the only thing in it that interests me is *Staurastrum Prossmani*, I believe the second time it has been reported. West's list from Borneo looks as if it had come from a rather hardwater habitat, and with the exception of *E. gnathoporum* and *C. auriculatum* it looks pretty much like a European or American population.

If you usually make a charge for doing 'chores' like this, please don't be bashful about letting me know. I have no way of finding out unless you tell me, and I should be only too happy to pay something, and I know that you like to add to your income with similar services.

Messikommer's book came this morning; many thanks. It has some very nice plates, and I think I shall have them copied. For some time I have been thinking of doing it. I have the camera and an enlarging stand, and all I need is a bracket to carry the camera, and a couple of lamps.

Under separate cover I am sending you the first copy of the USA paper by Grönblad and myself. He sent me this copy with his own dedication and a space left for my signature, and asked me specially to convey to you his renewed thanks (and mine also) for your valuable help in its preparation. The shipment of reprints has been ~~slow~~ delayed in transit, and I shall not get them until about the end of this month. I hope they have included some extra copies of the plates that I asked Rolf to order, and when they come I will send you two sets that you may cut up for your iconograph.

I am quite proud of this work, which represents all the novelties from about 15 years of collecting. There are some things that could have been improved, as there always are. One is the fact that the genera are not arranged in proper sequence, and are somewhat mixed up. This was caused by the Soc. Sci. Fennica suddenly setting a deadline for presentation of the paper before Rolf had finished it, and I had to draw the plates rather hurriedly, utilizing my drawings in the batches that he sent me, without knowing whether a genus had been completed. We tried to get the Society to print the plate descriptions on the obverse of the preceding plate, but they declined because of the extra expense. I have found it worth while, with similar large papers, to type the plate descriptions on separate sheets and paste them in place between the plates.

There still remain several hundred known desmids from my USA material to be published, but when this will be possible I don't know; not for some years as far as I can see.

Best regards from

July 26 1957

Dear Hannah,

The slide arrived this morning, in good shape except that the coverglass had shifted out to the edge of the slide, but no harm done.

There are very few desmids. Here's what I found:

- 1 Cosmarium, damaged, similar to *C. contractum* or a large *C. moniliforme*
- 2 small *Euastra*, similar to *E. sublobatum*
- 2 semicells of *St. cosmarioides*
- 1 small *Cosmarium* unidentifiable
- 1 fragment of a semicell of a *Micrasterias*, might be *M. pinnatifida* var.
- Several short filaments of *B. Borreri*, much distorted.

and by great good luck, 3 cells of *Arthrodesmus psilosporus*.

I'm not surprised that you didn't find the *Arthrodesmus*. They don't look much like desmids, the chloroplast is unrecognizable, and unless you knew exactly what to look for you would take them for merely pieces of the miscellaneous debris with which the slide is strewn.

From the enclosed sketches, which you may keep for your monograph, you will see that although the dimensions of the exsicc. specimens agree in general with those of the original, the isthmus is considerably wider. This could be caused by their having been dried, and presumably flattened, for something like 75 years. Also you might like to file the enclosed copies of my drawings of two Sumatra specimens. These I am going to label as forma, because I have found only one of each shape, so don't know enough about the plant to justify a varietal name.

The name *Euastrum latum* was selected by Krieger, and of course it never occurred to me to question it. Sorry to hear that it has been used previously by Messikommer. He has sent me all his recent papers, since 1948, and I have a couple of earlier ones, but not the 1942 paper that you refer to. So if you would be kind enough to lend it for a short time, I should like to see it.

Do you happen to have either of the following:

- Grow, W.B. (1923). Freshwater plankton from Ceylon. *J. Bot.* 61.
- West, W. (1914). Freshwater algae in: Gibbs, L.S.: A contribution to the Flora and Plant Formations of Mount Kinabalu and the Highlands of British North Borneo. *J. Linn. Soc. Bot.* 52. 216-239.

These are not in Jerry's library, and there might be something of interest to me in connection with my next paper on Indonesian desmids.

One of these days I hope I can do something for you, in return for the many courtesies and great help that you have given.

Sincerely,

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

July 12

Dear Scott,

Here is one of them. Farlow Herbarium sent me the Essex specimen without a number. I traced the figure twice, so you could make allowances for errors in tracing, and I copied all the written part, adding my own translation of the description. I made a slide from the dried stuff but, as usual, see only mud. When the slide dries a bit I'll mail it to you.

For Coscinostrabus the library is getting the book for me, and it should arrive soon.

Has someone already pointed out to you that the name "Eucoscinostrium latium" (in your Krueger Scott - Peru paper) was used by Messelkorn in 1942. "Beitrag zur Kennt. der Algefl. und Algenveg. des Hochgebirges um Davos. Beitr. zur geobot. Landesauf. der Schweiz 24: - on page 138. It looks like a tubby E. biniale. (I have a copy of this paper if you don't, and would like to see it).

I hope the hurricane spared you.

My regards to Edith.

Hansvol

#558. *Staurastrum* (*Arthrodesmus*) *psilosporum* Nordst. et L&fgr. nov. spec.

St. diametro quinta parte longius medio utrinque emarginatura obtusangula leviter emarginatum; semicellulae subcuneatae e basi latiuscula sensim dilatatae, lateribus medio levissime retusis, angulis in aculeolum perbreve obliquae sursum versus acuminatis, dorso, medio levissime retuso, levissime convexae; e vertice visae late ovaes; a latere oblongae medio compressae. Zygosporeae ellipticae, glabrae, (mesosporium undulatum esse cl. L&fgr. dicit), semicellulis residuis. Long. 25-28 u; lat. 18-21 u; crass. 12-13.5 u; lat. isthm. 10 u. Long. zygospor. 28-30 u, crass 20-22 u. - Proxima sunt *Staurastrum* (*Arthrod.*) *Incus* (Breb.), *pseudoincus* Reinsch, *O'Mearii* Arch., *pterosporum* Lund., *Erlangense* f. C. Reinsch, *leptodermum* Lund., a quibus praecipue sporis differt.

Explicatio figurarum (570/1) a = cellula a fronte, b = a latere, c = a vertice visa.

Brasiliae inter alias algae (e. gr. *Penium* sp.) ad Chacara do Dr. Martin Francisco prope S. Paulo 18 16/7 82.

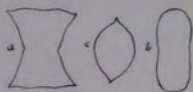
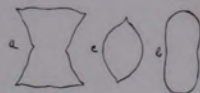
leg. A. L&fgr. (n:o 191).

A *Staurastrum* one fifth longer than its diameter, slightly emarginate on each side with an obtuse-angled emargination; semicells subcuneate, gradually dilated from a rather broad base, with the sides very slightly retuse in the middle, the angles acuminate in a very short, obliquely upwardly directed aculeole, semicells on the back very slightly convex, in the middle very slightly retuse; in vertical view oval, in side view oblong, compressed in the middle. Zygospore elliptic, smooth (mesospore undulate according to L&fgr.), the semicells remaining. Cells 25-28 u long, 18-21 u broad, 12-13 u thick, 10 u broad at the isthmus. Zygospore 25-30 u long by 20-22 u broad. Nearest are: *Staurastrum* (*Arthrodes.*) *Incus* (Breb.), *pseudoincus* Reinsch, *O'Mearii* Arch., *pterosporum* Lund., *Erlangense* f. C. Reinsch, *leptodermum* Lund., from (all of) which it differs principally in the spores.

Staurast. (Arthrod.) psilosporum Nord. et L&fgr.

570
1

tracing (100)



New are:

Oscillatoria formosa f. loktakensis
 Microchaete loktakensis
 Scenedesmus Annandalei
 Pediastrum duplex, var. loktakense

Closterium liktakense
 Cl. manipurense
 Cl. Annandalei
 Euastrum praepandum v. euryisthmum
 E. elegans v. loktakense
 E. loktakense
 E. spiculatum
 Cosmarium biobconicum

C. nanum
 C. Forceps
 C. lacustre
 C. euryisthmum
 C. contractum var. abbreviatum
 C. pseudophaseolus
 C. pseudo-hexagonoides
 C. hexagonoides
 C. Strabo

C. bitrapezoidium
 C. Meneghinii v. loktakense
 C. actinophorum
 C. ellipsoidale
 C. chondriophorum
 C. manipurense
 C. granulorum
 C. longicollum
 S. scissum
 C. thangaicum
 C. loktakense
 C. quadrilaterum
 C. decacuminatum
 C. sexlaterum
 C. subprotractum
 C. protractulum
 Xanthidium ~~parvum~~

X. loktakense
 Staurastrum triskeles
 S. thangaicum
 S. Annandaleianum
 S. loktakense
 S. Horae
 S. prasadianum
 S. ascendens
 S. manipurense
 S. dicodon

Sphaeroszoma pulchrum sub.sp.
 thangaense subsp. nov.

S. trilobum (Joshua for a var.
 of S. pulchrum)

S. manipurense

S. loktakense

95 species, 9 desmids listed
 all are illustrated, & have
 latin descriptions and
 English comments, with
 distribution by continents,
 also a bibliography (2-10 items)
 for each.

Figures are fair to good - look
 sloppy because chloroplast is
 nearly always scribbled in ~~the~~
 obscuring facial ornamentation,
 if any. But outlines are clear -
 would reproduce well, and page
 is so large (9x12") that 2 plates
 lie side by side, covering an
 area of 7½ x 9"

Desmids are on plates $\overline{V} + \overline{VI}$ to $\overline{XV} - \overline{XVI}$
 (on pl \overline{IV} are 4 Closteria - none new)

Cosmarium Strabo, sp. nova

Plate VIII, Fig. 84, Plate IX, Fig. 85, a-c.

Cellula a facie visa prolato-elliptica, 60-70 μ longa, 48-55 μ lata; sinu ab angulo interno ad orem usque paullum ampliato vel sub-linearari; isthmo 15-20 μ lato; semicellulis ad angulos inferiores obtuse rotundatis, a margine aequaliter rotundato, apice haud truncatis; cellula e latere visa oblonga, medio retusa, apicibus rotundatis; a vertice conspecta exacte elliptica; membrana firma, sed non conspicue crassa, laevi; chlorophoris atque pyrenoidibus in utraque semicellula binis; pyrenoidibus ovatis, obliquis, apice acuto ad isthmum spectantibus.

This species is very close to Cosmarium Lundellii, Delpino, var. ellipticum West.

With regard to the latter variety, which has been recorded from Wales and Scotland, West states that it is about one and a third as long as broad, being 68-73 μ long, and 53-55 μ broad; the breadth of its isthmus is 16-11 μ .

The form and position of the pyrenoids in face view appears to be remarkably constant in the Loktak species. The sinus of C. Lundellii var. ellipticum is gamma-shaped. This is also the case with the thinner-membraned var. aethiopicum West, of C. pachydermum.

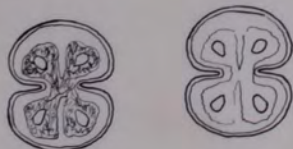
Compare West Brit. Desmidiaceae vol. II, t. LVII, Fig. 4-9.

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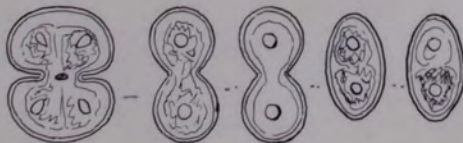
Cell in face view very broad-elliptic, 60-70 μ long, 48-55 μ broad; the sinus from the internal angle to the mouth very little widened or sublinear; isthmus 15-20 μ broad; semicells at the lower angles obtusely rounded, the margin being evenly rounded, not at all truncate at the apices; cell in side view oblong, retuse in the middle, with rounded apices; in vertical view exactly elliptic; wall firm but not conspicuously thick, smooth; two chloroplasts and pyrenoids in each semicell; the pyrenoids oval, oblique, facing the isthmus with acute apex.

Cosmarium Strabo

VIII
84



IX
85



July 17 1957

Dear Hannah,

I am very greatly obliged for your prompt response and the considerable trouble that you have gone to in answering my request for information on *C. strabo* and *A. pilosporus*.

My two sketches of the Indonesian *Arthrodesmus* agree very well with Nordstedt's illustration in both size and shape, about the only difference being the slightly convex apical margin in mine, while the Brazilian plants have a small depression in the center of the apex. In one of my specimens the lateral angles were more produced, forming stout spines, as you may remember, but I've seen only these two examples, so I'm going to assign them to the species without modification. Isn't it strange that this desmid should turn up again after 75 years, on the other side of the world, almost identical in size and form?

Cosmarium strabo is not a new species, of course, merely another of the many expressions of *C. Lundellii*. The almond-shaped pyrenoids pointing towards the isthmus and giving the strabismus effect are characteristic of *C. Lundellii*, though they also occur in other *Cosmaria*. I would have made it simply a *fa. apertissimum* of *C. Lundellii* var. *ellipticum*. In my Indonesian stuff I have four different forms of *Lundellii*, three of which fit into known varieties; the fourth I have called *fa. crassangulatum* because of a small thickened angularity on the lateral margins at the highest part of the perithecia.

Brühl & Biswas certainly were good to be able to find 47 novelties in a total of 95 desmids, including 42 new species!! I think Turner previously held the record, though Bernard was not far behind, but the Indians have everyone beaten. I don't recognize a single one of the new names, and evidently Jerry does not have any of them in his iconograph; for my attention would certainly have been attracted by such names as "loktakense", "pseudohexagonoides", etc. But in such a long list there must be some real novelties, so I shall have to get a photocopy; however, I shall order it on microfilm because the gull size photocopies are too expensive. I have a microfilm projector (not a reader), also an enlarger, so I can make the enlargements myself.

Rolf has told me that my reprints of our USA paper are on the way to New Orleans, by steamer, in a case weighing 165 lbs!!! It will be another three or four weeks before they arrive. I haven't seen it myself yet, except in proof.

Best regards from Edith and myself.

Sincerely,

June 27 1937

Dear Hannah,

Edith and I are going home today after spending eight days here, seven of which I have used in going through Jerry's iconograph in determining more than 1000 drawings of Indonesian desmids. We have made satisfactory assignments in nearly all cases, but there is one strange little *Arthrodesmus* shown on the enclosed sketch, which Jerry suggested that I send to you and ask that you check it with the original illustration of *A. psilosporus* (*Staurastrum psil.*) in Wittrock & Nordstedt's *Alg. Exsicc.* 1883, No. 558, which Jerry does not have. Grönblad has a var. *retusum* of *A. psilosporus* in his Brazil paper, which led me to believe that perhaps my sketch may match the typical form. I also found a *Staurastrum blandum* Racib. 1884, Pl. 1, Fig. 19, which has a similar shape but with longer spine-like extensions of the upper lateral angles; this is not very close.

Hurricane Audrey is supposed to hit the Louisiana coast this morning, so we don't know whether our plane flight will get through or not. Maybe we shall have to stay in Chicago or Memphis overnight. But that gives Edith something nice to worry about; she is a little worrywart, as you may remember.

Please return the sketches to me at New Orleans, with any information that you may be able to dig up. If you can copy the original illustration of Nordst. & Lofg. it would be helpful.

Many thanks in advance, and with best regards,

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

Jul 3 '57

Dear Scott,

I'm awfully sorry! You wrote to me just too late at Wood Hole. I left on the 1st, and your letters were forwarded to me here.

The Cosm. strabo I have asked for an interlib. loan, and should be able to get it in about a week since those memoirs are available in lots

of libraries.

The Stam. psilosporus is more of a problem. I'll write to a Wood Hole friend & see if he will copy the orig. picture for you. M.B.L. won't lend things during the summer, and I don't know where else to get hold of it.

I'm returning your sketches herewith.

Hope Audrey didn't bother you

Best wish

Samuel

June 30 1957

Dear Hannah,

In Jerry's iconograph I found a blank sheet with the name *Cosm. strabo*
Bruhl & Biswas 1926, Algae of the Loktak Lake, Mem. Asiatic Soc. Bengal, VIII, p. 289,
Pl. 8, Figs. 85a-c. There was no illustration on the sheet and he does not have the
paper.

Grönblad and I have a *Cosm. strabo* in the new USA paper which has just been
printed, the one that I wanted to call *C. cockeyedium*, so we have no make a correction
when the opportunity presents itself.

If you can find time would you be kind enough to look up Bruhl & Biswas
paper and make a copy of the picture and description. And you might also tell me if
it is worth while for me to get a microfilm of this paper.

Many thanks in advance.

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

May 16

Dear Scott,

Rolf's latin arrived yesterday.
I checked it last night and will mail
it, air mail, to him, at noon. Thank
for sending the \$2.00, but you needn't. I consider
it a privilege to be allowed to see the stuff,
and am glad to pay postage. I made very
few suggestions to him, and added some good

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I am sorry to learn that you have been
so sick! What a miserable thing to have
happen - all from hospitality. I do hope that
you recover completely soon, enough to drive to
Michigan if you want to. I wish there were
something to tempt you and Edith to New
England again. I hope to get to Wood Hole for
the last 2 weeks in June, but will be in Hanover
thereafter. Mother seems to be getting well nicely.
She is planning on going home to Pa. for the last half
of June.

Please give my best to Edith,
Faithfully
Hannibal

May 11 1957

Dear Hannah,

Grönblad has sent me the remainder of his desmid descriptions for the Sudan paper, and I have picked out all those with Latin diagnoses which he would like you to check; they are enclosed herewith. I think all you will have to do is to glance over them. He would like to have them returned by airmail, because the collector, Dr. Rzoska, is worrying him to get them published, and he has an opportunity to have the paper printed this summer. It wouldn't be fair to saddle you with the airmail postage, so I am enclosing a couple of dollars to cover it.

Jerry was in New Orleans the first week in April, attending a meeting of editors of biological journals. Of course he came up to our house a couple of times and we had some nice talks, and I took him out in the country to show him some of my favorite hunting grounds. Unfortunately for both of us he had an extremely bad cold, or the flué or grippe or a virus infection of some kind, and he had a miserable time on his last night at the hotel here, and on the train going home. And while he was on the train, my doctor shipped me off to the hospital with an attack of something similar. I don't know just what it was, but it triggered off a rather severe cardiac asthma and other complications. So I spent 6 days under an oxygen tent, and another 4 days in the hospital. Now I have been home for three weeks, and am recovering my strength, but have to take things easy for some time yet.

I am thinking of going to East Lansing during the second half of June, when Jerry will be able to help me in the identification of something like 1000 drawings of Indonesian desmids. Normally I would have driven up there with Edith, but my doctor has vetoed this, so I don't know yet just what I shall do.

I hope that everything is well with you and that your Mother is recovering her health again. With best wishes from Edith and myself,

Sincerely,

Feb 6

Dear Scott,

Yes, of course. I'll be glad to check the latic. I heard from Grönblad about a week ago, and told him yes. So send it along, the sooner the better.

My last letter from Teiling, dated Jan 27, says: "Tora is better now, the X-rays seem to have decreased the activity of the cancer centre in the cranial base. She gives almost daily joyful bulletins of progress."

I'm delighted to know where I can send water for sampling. Do I just ask for "complete analysis" or must I be more specific. I haven't heard from Prescott for ages.

We did have 2 weeks of better

weather, but the last few weeks
have been wonderful - spring-like
today, with temperatures around
freezing - warm for us.

Mother is better, but her progress
is slow & not sure. I haven't
looked at algae for months, but
I have managed to keep abreast
of my illustrating jobs, and antici-
pate some more Latin translating
(in addition to yours) soon.

Gimble told me he had been
seriously sick. I had not known
I hope he is truly all right again.

Best wish to you both

Hannah

Feb 11 1957

Dear Hannah,

Under separate cover I am sending the diagnoses and drawings of the *Sudanese desmids*. When you have checked the Latin please return them direct to Grönblad, by ordinary mail, not airmail. There is no great hurry about them because G. will have to go very slow with his work, for some time.

Just half an hour ago I received a note from him, reading in part, "I am quite well, or at least I feel so. But I must still go to Helsingfors every Saturday, and I am going to bed very early, at 23.00 every evening, so there is very little desmid work at present". He sent me some photos of *Cosmarium pardalis* Cohn, the original plant from Wittrock & Nordstedt's *Exsiccatae*, #559, one of which I enclose and you may keep. I also took some photos of this plant, but they are not so good as Grönblad's. You will note that the first impression you get is of the arrangement of the granules in horizontal rows. There are, of course, subsidiary diagonal rows, caused by the quincunx pattern, but the primary rows are distinctly horizontal. Thus the plant differs considerably from the one that W. & W. called *C. Pardalis* (Ceylon 1902), and all other subsequent writers seem to have followed W. & W. One of these days, when I get time, I am going to make new drawings of this and other desmids from Cohn's original material, and write them up for publication, with Grönblad's help.

The day after I wrote you I had a nice letter from Telling, also conveying the good news that his wife is better. Also he told me that they are going to do the illustrations for an agricultural textbook by Prof. Pohlman. Congratulations!

I seem to have given you the wrong impression about the water analyses. You cannot send samples for analysis; the Quality of Water Branch, U.S. Geological Survey, will not make analyses for private individuals, unless you can get the proper department of your State government to make an official request for them, and even then I expect they would want to collect the samples themselves. What you have to do is to find out if they have already made analyses of my lakes in New Hampshire, and then ask for copies of those in which you are interested. In my case it happened that they had such data for several lakes in Louisiana, but all of them are in the northern part of the State, where I have done little collecting because that region is not very favorable for desmids. So later this spring I shall have to make a special trip up there to get algal collections from some of these lakes. This does not suit Jerry very well; he wants analyses of water collected at the same time as the algae. But I'm afraid that is impossible unless he is willing to pay \$50.00 per sample to have special analyses made by a commercial laboratory.

Edith and I are happy to know that your Mother is better. At her age (and ours) recovery from any illness always takes much longer than when we were younger; both of us know that from experience.

With our best regards,

Sincerely,

Feb 6 1957

Dear Hannah,

A few weeks ago Grönblad told me that he would write you and ask if you would be able to check his Latin diagnoses for a new paper dealing with Sudanese desmids. This morning I received the first batch of his descriptions, from Gonatozygon to Micrasterias inclusive. Most of the diagnoses are very short and simple; a few are longer. He did not say what to do with them after I have checked the English, so I do not know whether to send them on to you or not. Have you heard from about this?

No doubt he has told you that he has been ill and treated in a hospital at Helsingfors. Now he has been home for about two weeks, and says he feels all right though rather tired. The doctor says he must rest and sleep more, so he will have to abandon his long-time habit of reading or working until 3 or 4 am, and then getting up in time for a noontime lunch or breakfast.

Teiling wrote me shortly before Christmas that his wife had to go in the hospital for examination and treatment of a tumour on her neck that had previously given trouble. He has not written since then though he owes me a letter, so I am afraid that something may be wrong. Have you heard from his lately?

I have just returned to Finland the final page proof of the paper on desmids from SE USA, so it ought to be printed soon.

No doubt you received from Jerry the outline of his programme for work on the USA desmids. I wrote him a long letter in reply, but he has been too darn busy (as usual) to answer it. There was one item in it that I thought I could get to work on right away, namely the water analyses. After a good deal of telephoning and letter-writing I found a source from which such analyses of surface waters can be obtained. It is the U.S. Geological Survey, Quality of Water Branch, and from them I have obtained complete analyses of water from several lakes in Louisiana and Florida. You can probably get them from lakes in your State, after you have ascertained where the particular Quality of Water Branch is located; it may be in Boston.

From the papers I see that you have been having some very severe weather. You should have been down here. For the last eight days the temperature has ranged from 75 to 82°, and one day it reached 85, breaking all records for February since the establishment of the Weather Bureau here some 75 years or more ago.

That was a very curious and unusual composition of your grandfather's that you sent at Christmas. I wonder how much time it took him, and how many false starts he made. The only other thing like it that I have seen is the ancient jingle

An Austrian army awfully arrayed,

Boldly by battery besieging Belgrade,

I forget the rest, nor do I remember what happened when the letters like J, Q and X were reached.

Edith joins me in sending our best regards, and hope that your Mother is going well again.

Sincerely,

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

Now!

Dear Scott,

Thanks a thousand for the fine appraisal! I couldn't have done better myself. I'm frankly surprised, too, because I somehow lost faith in this paper as I went along. Then I laid it aside for a month or so, waiting for word from Prescott, and then Mother got sick, so I did my final typing when I ~~was franticly worried about the~~ and quite cold to the subject matter. I'm surprised that you didn't find more mistakes.

Mother is better now but still far from well. I haven't been able to do any work of my own for ages - only my job and house-work + nursing. So it is a very welcome boost at this time to get such kind words from a fellow scientist. I'll hope to get back in the swing eventually.

Thanks again!

Hannah



DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

Oct 20

Dear Scott,

Sorry to bother you with this
but the enclosed letter from Jerry Prescott
explains my need.

I have sent off the first copy, + plate
of this 3rd paper on Alaska Algae to the
Jour. Amer. Micr. Soc. which ~~has~~ published
paper #2. Jerry even asked for it!

However the paper is over-long - tho'
only c. $\frac{2}{3}$ the length of the last, so I need help
from the Spencer-Tobles fund, and, accordingly,
need appraisal. I can't think of anyone better
qualified than you - so here it is.

At your convenience please return the
manuscript. I have to make from it 2 more
copies to send to The Arctic Institute.

Thanks

Hansell

Oct 25 1956

Dear Hannah,

Since women's hats don't fit as tightly as men's do, you won't have to go out and buy a new one after reading the enclosed testimonial. And it's not baloney either! I really mean it. With your Alaskan paper you have established yourself among the top-notchers in desmidiology.

Glad to have the opportunity of seeing the paper in manuscript form; it gives me some ideas about the typing. In a quick reading I noted only one or two typographical errors. On p. 27 and again in the bibliography you have omitted the two accents aigu in Irene-Marie's name. And p. 60, line 13 "Desmidiaceen". It's funny how such errors jump out at me when reading somebody else's work, while in reading my own I frequently miss them.

Rather to my surprise Dr. Lamb sent me from the Farlow Library three volumes of Wittrock & Nordstedt's exsiccatae on loan for a month. For several days I have been busy searching three of the samples for the Spond. desmidiiforme from Brazil in which I am interested. In one of them I drew a blank; in the second I found one specimen tightly attached to a mass of debris. But in the third I found a good many examples, and was able to establish the fact that in this collection, at least, Borge's plant is identical with mine, though his illustration does not show the asymmetry. But this still leaves unsolved the question whether the original specimens on which the species is based were asymmetrical.

Another of the exsiccatae was a real find; the Desmidiaceae Bongoenses of F. Cohn, from Central Africa. For some years I have been curious about Cosm. Pardalis Cohn, because his illustration shows two different types of semicell, one ellipsoidal and the other quite rectangular. The original specimens show a remarkable diversity of sizes and shapes, a few of them approaching the rectangular. But the large majority are ellipsoidal, and I think that this must be taken as the type. The plants that subsequent authors have called C. Pardalis do not correspond at all with the African specimens, e.g., C. Pardalis is W. & W. Ceylon paper.

In the four exsiccatae that I have examined nearly all the desmids are badly collapsed and distorted. I treated the material with 5% KOH mixed with an equal volume of glycerine and allowed them to soak overnight, following the method described by Lagerheim in Bidr. til Amerikas Desmidie-flora, but he used 18% KOH. I thought this high strength dangerous because I have ruined some of my own material by using too much caustic potash in an attempt to dissolve the cell-contents. After the soaking I warmed the slide gently, then added 5% acetic acid to neutralize the alkali, and set it aside for some hours until the gas bubbles had ceased. Perhaps this treatment helped some, but I got just about as good results on another slide with only plain water, and considering that the cell wall is only 1 u or less in thickness, it would seem that water ought to soften it enough. Taylor in McClung recommends lactophenol for treating dried algae, but he may have much larger forms in mind. Do you know of any other method?

Enclosed are a few photos of some very rare desmids from Borneo, in a new collection received a couple of weeks ago. They are duplicates, so you may keep them.

With best regards,

Sincerely,

Oct. 25 1956

Dr. Gerald W. Prescott,
Michigan State University,
East Lansing, Mich.

Dear Dr. Prescott,

Dr. Hannah Crossdale has sent me a copy of the manuscript and drawings for the third part of her paper on Freshwater Algae of Alaska, with the request that I read it and send you an appraisal of it that you can show to the Spencer-Folles Committee of the Am. Microsc. Soc.

As you know, I have collected and studied desmids for the last 18 years. My own opportunities have led me to specialize on subtropical and tropical desmids, but I have also studied some collections from Alaska and the Aleutian Islands made for me by one of my friends who was stationed there during World War II. Therefore, I am familiar with most of the species that she described.

Her paper impresses me as a fine example of scientific writing. It is nicely organized, well presented, and with a wealth of ecological data. The drawings are excellent. Her critical comments show a knowledge and appreciation of the finer points involved in the making of discriminating determinations. Even after just one reading of the paper and a quick look at the drawings, I can tell that there will be few, if any, of her determinations on which I would hold a different opinion.

Desmidiological papers of this caliber are not too common, and it gives me pleasure to write this testimonial, which I hope will help induce the Spencer-Folles Committee to make a grant to partially defray the cost of publication.

With my best regards,

Sincerely,

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

Sept 17

Dear Scott,

Sorry for the delay in answering your interesting letter of Sept. 6. I was away a week and did not have mail forwarded.

No, I didn't, and wouldn't mention to Teiling that I had seen that letter! Although he has written to me something of the sort he never wrote so fully or frankly. I don't think he would have minded my seeing it, but I think he might write more reservedly to you in the future if he thought you might pass the letter on. He feels very keenly the lack of acceptance of his theories by Gimblead and others who he likes and admires. So it probably does him good to spill it out to you. And don't you marvel at his English! Think of us trying to express and explain ourselves to that extent in Swedish! I was awfully glad to have the opportunity to read that letter, but I certainly won't speak of it to anyone.

Yes, I think Farlow has the nose both

Wittrock exsiccatae. I think the algae
is in little jobs on paper & the paper
sort of half-bound in books. The present
director of Farlow: J. McKenzie Lamb, seems
very pleasant and cooperative. I think
he might be persuaded to lend you the
sheet, or make up a slide for you.

Also, I think all the Borge stuff is
at the Riksmuseum in Stockholm so it
might not be too difficult for feeling to
get it for you.

The plant certainly sounds unusual.
that is the kind of thing that I would
have overlooked altogether, I am afraid.

I got a letter from Gimblad yesterday
- we crossed letters after about a 6-months'
mutual silence - . He says "I have finished
Scott's USA desmids and the paper will be
printed before the end of this year." That is
pretty good, isn't it?

Please give my best to Edith,

Sincerely

Harold

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

Sept 8

Dear Scott,

Thanks very much for answering my query so promptly and completely. As a matter of fact my form seems to be for papillatum so I was very glad to be told about that. I was ignorant of the significance of the papilla since a bump of some sort is a fundamental feature of Xanthidium.

Digitized by Hunt Institute for Botanical Documentation

I agree with you on the fac question. There are times when it might properly replace "forma" and times when it might be absurd to use it. Myself, I'd rather stick to "forma" when the plant breeds true and use fac always with feminine & no author as simple description. Ruzicka is a lawyer, isn't he? Maybe he's better at interpreting the "International Code" than I am. (though I think the later (1952) is much clearer than the earlier one).

Thanks for sending Teubig's letter which I return in return. I would have enjoyed seeing

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YERKES HERBARIUM
YERKES PAPERS

yours that called forth all this, but even without that I enjoyed it. I do think that if he would write another paper setting the limits? Stauradesmus more people would be inclined to accept it. But when I was there he was considering including all Staurasta ending in a \pm pointed corner - such as S grande and I don't like that. I hold out for a spine or micro on at least one renucell. I intend to vent your tho' in my next paper.

My latex prof is back and checked over the latum I wrote. I think he checked him a few months ago. He has pointed out a few dumb mistakes which I hope I - or you have already caught. If not, maybe you can correct them on galley.

Eucastrium latum - n.sp. - the sixth word should be "longae"; not "latae".

Microsterias laticeps depressa - the last word should be "depress \grave{a} " not "depressum".

Eucastrium elobatum v. peruvianum should read ---- "ex java" not "de java".

all sheer carelessness - I'm sorry. I hope you can fix (or have fixed) them.

Thanks again

Stauradesmus

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

Mr. Arthur M. Scott,
2824 Dante Street,
New Orleans 18, Louisiana.

September 28, 1956.

Dear Mr. Scott:-

Your letter was most interesting, and it was nice to hear from you again. I am indeed interested in the information you impart about the preparation of small glass rings, both because of the method and because of the record of its previous publication from a historical standpoint. I too like to read over such old microscopic works and find much of interest and value in them, but want for time to do as much of it as I would love to. Many fine methods and suggestions are buried in these old works and in the wealth of literature on both microscopy and photography, some of which I have been searching for a number of ideas, but as I say, with all too little opportunity, mainly time.

I greatly appreciate your writing me about this matter, quoting me the references, and the specific statement about the method. You may wonder at not yet having seen an article from me on the method of which we corresponded sometime ago, but unhappily it was written at the time and still lies on my desk, or, perhaps happily now that you have unearthed this earlier information which I shall refer to with all due credit to you also. I may add that the description of my use of this method which I wrote went through our board of editors and was authorized for publication some time ago, but my wish to revise a couple of places and interruption of other work have delayed it, as I say fortunately now that your kind letter brings this vital information which it will be possible to include to make the whole subject final and complete. I always dislike to write on such a subject knowing or feeling that something is missing. Much research on this old microscopic and photographic literature should be made, but few have the incentive or time to do it, if the facilities.

I shall look up the reference you give for the pleasure of reading more of the adjoining matter, and I shall also try to find the books by Beale you mention. If they are here in Washington and I can run down the subject any I'll reciprocate by writing you in return the references and quoted pertinent matter. There may be some characteristic delay in doing this for a number of reasons, so if you do not hear from me as promptly as seems reasonable please be patient. I give you some hint of my reasons for delay as a possible justification.

I have only just returned from a two weeks trip to Wisconsin where I took my son, Norman, to enter as a graduate assistant student in chemistry. He got his B.S. degree in chemistry at Union College, Schenectady, N.Y. last June. When I visited my mother and three sisters and families near there. My wife and two daughters stayed here to prepare for the wedding of my youngest daughter on October 6th, after which she and her husband will motor through the South to San Antonio, Texas where as a recent college graduate he is committed to three years in the Air Force, an aspect we wish might be different as he is a fine chap with good offers from several companies. After this modest but pretentious wedding at the Washington Cathedral I must busy myself with the moving, after many years, of my laboratory into new quarters in another, the main building of the Smithsonian, a long anticipated and planned move in keeping with reorganization and proper location of the work. I shall be up to my ears in this probably for weeks as you can well imagine trying to safely trans-

fer countless slides and samples of delicate material, my instruments and valuable books, and preserve them from destruction under the pressure of hurried administrators and the indifference of lumbering "darkies". From this I think it will be evident that I shall be very busy and should be justifiably excused for a few negligences myself. At least the next few months seem a formidable period to me, and one after which I shall look forward to relaxation and the delight of perusing such works as those of Heinrich Frey and Beale if opportunity permits, though I hope to look into them before.

I am glad to hear that you had such a delightful trip to Europe and were able to see many of your correspondents and persons of your like interest in Desmids. I am sure it was a most enjoyable trip to you, and doubtless to your wife also in the same and many other ways. You must have gotten a great deal out of it, if not in things really new to you at least in meeting face to face the persons you have so long written to and wondered about, and seeing their work rooms and collections. Yes, I am acquainted with Mr. Robert Ross of the British Museum (Natural History), but likewise only by occasional correspondence, though Dr. Hendey (if you know of him) another British diatomist, of the Admiralty, stayed with us for some weeks on a couple of occasions during the second war. Dr. Mann and I had also another English friend, a well-to-do civil engineer who spent many years in Mexico and back and forth to England, and worked extensively on diatoms in his retired years contributing greatly to the British Museum collections. Our many visits with him on trips through here were most delightful and informative. Other than that my knowledge of the vast British diatom collections is rather vague.

On our trip through Chicago on our way to Wisconsin we visited several friends including Dr. Latham, still active at 90 in the Illinois Microscopical Society, and Mr. Dan Stump, whom I wonder if you know of. He wrote that most excellent little booklet "An Adventure with Photo-Micrography." He is a mechanical (air-conditioning) engineer, teaching air-conditioning engineering, and is a real "gadgeteer" with a basement shop, dark-room, and laboratory that would delight you. However, he has not done much with microscopy in recent years, but he has devised many ingenious devices in connection with his many versatile interests. We had a great time with these people, as you can imagine, all too short of course.

Thanks again for your letter, and with all kind wishes for you and Mrs. Scott,

Sincerely yours,

Paul S. Conger

Paul S. Conger

P.S. I neglected to mail this due to our great preoccupation these last few days, and to being away part of the time. -- P.S.C

Sept 18 1956

Mr. Paul S. Conger,
U.S. National Museum,
Washington, D.C.

Dear Mr. Conger,

A few days ago, while reading an old book on microscopy, I ran across a reference to the method that you showed me, of making a shallow glass cell by perforating a circular cover glass, and I am giving you the dope because I think you will be interested.

The book is "The Microscope and Microscopical Technology", by Heinrich Frey, translated (from German I suppose) by George R. Cutter, M.D. 2nd edition. New York, William Wood & Co., 1880. The description is on pp 223-224, and reads thus:

"A thin glass cover may be used for the construction of very shallow cells. The thin glass may be cemented while warm to a glass ring, or over a hole in a plate of glass, by means of the marine glue which is soon to be described. A hole is then to be forced through it with the point of a three-cornered file, and this is to be enlarged to the margin; the cracks do not extend across that part of the glass which is cemented. The perforated glass may be readily removed when again heated."

Immediately before and after this paragraph there are descriptions of other kinds of cells from an English author, L. Beale, and I take it that the above method also was taken from Beale, though this is not specifically stated. Two books by Beale are listed: "How to work with the Microscope", 4th edition, London 1867, and "The Microscope in its Application to Practical Medicine", 4th edit., London 1877. I would guess that the cell would be described in the first one.

You told me you thought the method had been described before, but I don't believe you thought it to be nearly a century old. It may not have been new even when Beale described it!

I have made a number of these cells, and keep them for use when I have especially large desmids to manipulate. There's only one trouble, - my 60x dry apochromat does not have sufficient working distance to focus to the bottom of the cell, so I am limited to the 44x apochromat. This is all right for the large desmids, but it usually happens that there are also very small ones lying on the bottom, on which I would like to use the higher power.

Last year I spent five months in Europe with my wife, and visited several desmidiologists in Sweden, Finland, Holland and France, with whom I had been corresponding for many years. I called at the British Museum (Natural History) to see if there was anyone there interested in desmids, and met Mr. R. Ross, whom you doubtless know. However, as he a diatomist and I know practically nothing of this subject, we did not have much in common to talk about.

With best regards and good wishes,
Yours sincerely,

Sept 6 1956

Dear Hannah,

When I wrote you last night I decided on the spur of the moment to send Teiling's letter. Afterwards it occurred to me that he might not like this, so I believe it would be better if you do not mention it to him, though I am sure he would write in the same manner to you if the occasion arose.

Do you happen to know if the Farlow Herbarium has any of Wittrock & Nordstedt's exsiccatae? My reason for asking is that I am investigating a very peculiar little desmid that superficially appears to be identical with Spondylosium desmidiiforme as described by Borge (Sao Paulo 1918, p. 70, Pl. 5, Fig. 36). It is not the original large form described by Borge as Sphaerozosma desmidiiforme in his Regnell paper 1903, which later was transferred to Spondylosium by G.S. West.

The funny little plant is one of the most remarkable that I have ever seen, because it exhibits two different kinds of asymmetry, in different cells, and I believe that both kinds of cell occur in the same filament. In the first type the asymmetry occurs on the right-hand side of both semicells as seen in front view, so that one semicell could be brought into congruence with the other by a rotation of 180° about the horizontal axis. So far this is not too remarkable. But in other cells the asymmetry occurs on the right of the upper semicell and on the left side of the lower one, so that congruence could only be obtained by two rotations of 180° , one about the horizontal axis and the other about the vertical axis. So far as I know the second type of asymmetry has never been observed before, and Teiling will be amazed when I report it to him, and also Kallio who will have some trouble in explaining in terms of genetics how such asymmetries can arise and how they can change from one type to the other in the same filament, if this really is the case.

To ascertain if this is really true is going to be very difficult. The asymmetry can only be seen properly in end view of isolated cells; in filaments the differences are quite ~~insignificant~~ inconspicuous, and made further obscure by the strong twisting of the filaments, so that anyone, even Borge, would overlook them if he had not seen the end view. It would be very desirable to find out if Borge's original specimens, or those in the exsiccatae to which he refers, show this peculiarity.

I know nothing about exsiccatae, except that the material is probably dried on paper or mica, and that for examination I suppose that some of the material would have to be scraped off on to a slide and treated with a solution of water, glycerine and lactic acid to restore it to something like its original state. Since the Farlow Library will not lend out any books perhaps they would not lend the exsiccatae if they have them. In that case I would ask Teiling to try, since they are undoubtedly available in Sweden.

Sincerely,

Sept 5 1956

Dear Hannah,

Xanthidium cristatum with the rosette of raised verrucae really exists; it is extremely rare in this part of the country and I have only seen it on one or two occasions. The common form down here is X. cristatum var. scrobiculatum Scott & Grönblad, of which I enclose a sketch. Also there is another quite similar form with a raised granule in the center of the group of pits, which we have named var. scrobiculatum f. papillatum Scott & Grönblad. The former has been found in Miss. and Fla., the latter only in one collection from Fla. I presume it would be OK for you to use these names, with the notation (Ms., in press 1956). And if you wish to cite the name of our paper in your bibliography, it is "New and rare desmids from Southeastern U.S.A.," in press 1956.

Rolf has just finished the paper, but it appears that it must be submitted once more to the Soc. Sci. Fennica for final acceptance. They have a meeting sometime this month, and then it will go to the printer, I suppose. In his last letter Rolf asked what you had been doing, and said he had not heard from you for a long while, so I suggested that perhaps he owed you a letter. But perhaps it is you who are the debtor!

It appears that Ruzicka has persuaded Grönblad that names of facies are not nomenclatorial categories, and therefore must not be followed by authors' names, and G. has promised R. that he will act accordingly. This is contrary to what we had agreed upon, and I do not concur; but in order to get G. out of the dilemma I have agreed that he may omit authors' names in our forthcoming paper. Accordingly he will use the feminine form of the facies name, as you suggested. Like most other questions in nomenclature, the matter is complicated, and largely a matter of personal opinion. G. cites the case of St. Meriani, which exists in all facies from 3 or 4 up to 11, and says it would be foolish in such a case to have fac. triangulare Scott, fac. quadrangulare Gld., fac. quinguangulare Croasdale, etc. With this I agree; but there are many other cases where a certain facies is the only one present in a given desmid population, and therefore must reproduce itself. For instance, Desmidium Baileyi forma tetragona Nordst. is quite common in Indonesia, while the triangular specific form, if it exists there, must be quite rare. Again, St. sagittarium is known in 7 to 10-radiate forms, but in one N. Australian collection there is nothing but an 11-radiate form. I consider that any form which reproduces itself constantly is a distinct entity, and as such is entitled to a formal name followed by the author's name. So in papers that I write myself, in future, I think I shall not use the term facies, but revert to the old-fashioned forma.

Rolf went to the Limnological Congress in Helsingfors, but found little of interest. There was one paper by Teiling on desmids, that's all. Teiling went to Karis for a day's stay, apparently he has not yet convinced G. of the necessity or desirability of his two genera Staurodesmus and Actinotaenium, though he is using Groenbladia in our new paper. Dick Starr and a young Scotsman named Alan Brooke were supposed to visit Karis, but did not show up.

I am enclosing a long letter from Teiling which I think you will enjoy reading, and perhaps may get a better conception of his views. Please return it quickly because I have not yet answered it.

Sincerely,

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

Sept 2

Dear Scott,

Sorry you did not come to the A.-I.-B.S. meetings at Storrs. There was a good representation of Phycologists there, but we missed you! It was the first meeting I had been to for about 5 years. one in five years is about enough for me!

I am still struggling with a manuscript on Alaska desmids - the 3rd paper. After seeing

that manuscript of you and Grönbled, in which you point out that the central granules in Xanthidium cristatum are really scrobulations

I looked at my figures and saw that I had carefully drawn them that way. I looked at my material again & confirmed it. Accordingly I would like to cite it, and how do I express it? "X. cristatum var. scrobulatum Scott

and Grönbled mss." ? or how? . I am hoping the Amer. Micr. Soc. will take my paper and that I can get the manuscript off this month.

Sincerely

Hannah

Dear Scott,

The worm arrived dead
- merely a puddle of goo- I'm
sorry. There was a man here (our
Ecologist) who would have been
interested.

I sent the letter off in some
haste, since I was overdue on
it, so forgot to enclose a note.

I hope it has arrived safely and
is all right, unchecked.

Thanks for doing the typing
for me. That helps a lot!

Sincerely

Harold

July 10 1956

Dear Hannah,

This morning our colored maid called me to come see a funny animal that she found crawling on the cement paving just outside our back door, after a heavy thunderstorm. She thought it was a baby snake, because of the flat head, and was considerably relieved when I told her it was not a snake but some kind of worm. I had never seen anything like it before, and had little hope of identifying it, for I have few books dealing with such things. Strange to say, Ward & Whipple provided the answer, though it turns out to be a terrestrial form, not aquatic, and there seems little doubt that it is Placocephalus kewense. Apparently it is rather rare, so I am sending it to you with the thought that even if you, like most women, don't like creepy-crawly things, one of your zoology professors may like to look at it.

The liquid in the vial is just tap-water, which I put in to keep him, or her (or him-her!) from drying out. I hope he or she survives the trip.

Sincerely,

Sunday night
M.B.L., Woods Hole, Mass

Dear Scott,

Your letter arrived safely, but unfortunately just a few hours before I was due to leave for Woods Hole. I grabbed my pocket dictionary & took it with me, but after trying it last night I find I can't do justice to it without my notes (which I by now are in a good-sized filing box which I could not very well take with me.

Digitized by ^{the} ~~Hunt~~ ^{Institute for Botanical Documentation} ~~Institute for Botanical Documentation~~ July 6, 1962

I do hope that you can wait until then. You did not indicate a dead-line. Thanks very much for preparing it the way you did, with a carbon for me. That is most helpful. If you can afford to wait for a month or so I'll send it abroad to my Latin Prof to be checked, but it really doesn't look difficult. I think I could probably do it quite accurately alone if I had my notes. Teiling wrote to me about his wife

I think it was pretty serious - she was
so dizzy she could not move her head in
bed for a while, but finally it was diagnosed
and now she is much better.

Paul Silva, who is quite an authority on
nomenclature rules is here, and when I meet
him I'll try to get straight on how to use
"fac". What you said sounds entirely
reasonable.

I haven't heard from Gimblet for ages.

Do you know if you two had your
paper accepted by the Society for this year's
publication.

Is there anything I can look up, or
copy for you in the super library?

I do hope the delay until July 7
will be all right!

Best wishes
Hauval

July 27 1956

Dear Hannah,

I can wait until your return home on July 6th, for there is no deadline to meet. It seems unnecessary to send the Latin to your professor for checking; the descriptions are short and not at all complicated, so I have no doubt that you can do them justice.

If you see Paul Silva please tell him that his phycological bibliography in the last two issues of the Bulletin is a wonderful piece of work, and I am sure ~~that~~ that all workers in the field are grateful to him for the immense amount of work he had expended in preparing it. It is true that few desmid papers are represented, but I found two of interest, one from the Indian Bot. Congress with a new genus (*Euastrionella*) and another from Austria describing some new species from Africa. Jerry has promised to send me photocopies of them; I am anxious to get them because Grönblad and I will have to start soon on another paper dealing with those extraordinary desmids from the Sudan. There is nothing that you can do for me at Woods Hole, except perhaps to find the address and name of the editor of the *Osterr. Bot. Zeitschr.*, no doubt in Wien (Vienna). From him I can probably get the ~~xxxxx~~ address of B. J. Cholnoky who wrote on the African algae.

The Soc. Sci. Fennica has accepted our paper for publication, but since it was presented in an incomplete form I am not clear whether we have to wait for another meeting of the Society, which will not be until the Fall. I am hopeful that it can be printed this year. Grönblad has been very busy checking my retyped descriptions and your Latin diagnoses, also he has a lengthy bibliography to compile, for he says that every reference in the text must be listed. I'll tell you are anxious to hear from him.

So long, and good luck!

June 2

Dear Scott,

Thanks for all the recent communications
Ralf had not sent me a copy of the St. lebrachiatum
paper, so I am very glad that you did.
I was also much interested in receiving your
corrections on the Teiling manuscript. You did
a more thorough job than I did.

I'm returning herewith the 2 diagnoses
The latter seems perfect to me.

Concerning Krieger's species without
Latin diagnoses, didn't the last Botanical
Congress whitewash all past omissions, accepts
everything to date but insisting on Latin from
now on? If not (I never seem to grasp, or
remember these legal points) couldn't some
one like me legalize Krieger's by a very brief
description. Ralf would be a good one to do it
since the German would come hard to me.
His Latin is so good he must really write
it with little effort.

Concerning "facies", doesn't Rolf's note say that he agrees with Ruzička - that facies are not taxonomical units? I had expected to use it in my next paper (on Staurastrum etc) but not as a taxonomical unit, i.e. just saying "fac. triradiatum" as part of the description. I don't think I have ever thought of naming a thing new because it was bi- or tri-radiate. (I am intending to use the genus Staurodesmes) However, I quite agree with you that custom based on convenience should precede rules so if the occasion arises I'll go along with you. Would you go so far as to upset an earlier named "forma trigona" - i.e. "St. tetracerum forma trigona Lund" (w.w. monograph V, p. 120)? (I wouldn't think so).

Concerning Prescott's last paper I did a smaller proportion of that than you did of Rolf's "St. brach". Our friends are generous.

Thanks also for the 2 addresses. I do exchange with Ruzička (I do know how to spell it, normally!) but I was very glad to be given the Kozmushajja' address. I sent off papers at once, with request for exchange.

We are having hot weather here now, and I don't like it!

My best to Edith,

Thank again - Hannel

June 18 1956

Dear Hannah,

Enclosed are the English diagnoses for the few new taxa that I mentioned. Will you please do the Latin? I have written them in duplicate, so all you have to do is slip a carbon between the sheets, type the Latin, and keep the copy for your records. Also I am sending sketches of the desmids, so that you can see what you are doing, and a check to cover the cost.

Had a letter from Teiling today, acknowledging the MS that I sent him, and saying that his wife has been ill since April with otitis. I don't know exactly what that is, but it must have something to do with the ears. He says she is better now, and he is going to the Limnological Congress at Helsingfors, where he will see Grönblad. He had hoped to visit Turku to see Kallio but will not have time; however, I should imagine that Kallio will attend the Congress.

Jerry and Tess left for Montana last Saturday, the 16th, and probably will be there tomorrow. A beautiful way to spend the summer vacation in the mountains and get paid for it! Of course, I suppose he has to do some work too, to say nothing of editing the Transactions, which will occupy his spare (?) time. I wonder if he ever gets any.

Grönblad wrote again, going into more detail about Linnæus' objection to using authors' names with 'facies' because it is not an accepted taxonomical 'unit' (meaning 'category'). But on trying to dig into the matter further, I find that Art. 12 of the 1935 edition of the International Rules gives a list of categories and says that if these are not sufficient the list "may be augmented by the intercalation of supplementary categories, provided that this does not introduce confusion or error". It says nothing about such additional categories having to be approved or accepted by anyone, so I interpret it to mean that any author can create a new category just as he can create a new species, genus, or family if he feels like it. And as Teiling has used and published the term 'facies' I take it that it automatically has become a category. I don't know anyone whom I can ask about this, but you will probably be going to Woods Hole or Cambridge this summer, and perhaps will meet some of the bigshots like W. H. Camp who could give a fairly authoritative opinion.

No, I would not change existing names such as var. quadrangulare, or forma trigona. But I have discovered some biradiate forms of Staurastrum that I think are quite remarkable, and I would apply the term 'facies biradiatum' as part of the name of the plant, and if it forms a part of the plant's name then it must be followed by the name of the author who first used it, according to Art. 46 of the Rules.

I have not heard anything about the last Congress whitewashing past sins, and if you get anything definite on it I should be obliged if you would let me know.

With best regards from Edith and myself, Sincerely,

May 27

Dear Scott,

Belatedly filing some
iconograph figures I have just
come to your *Cosm. rotundum*
n. sp. Proc. & Scott 1952 (Australia)
p. 13, and I see, for the first
time, that this species name
was used by Turner 1892, p. 58
for a plant which Westo (monograph
II p. 139) made synonymous with

Cos. lamellae v. *corruptum*

(That's quite a sentence, but I
guess you get the idea). I'm vague
on rules of nomenclature, but doesn't
Turner's earlier use spoil your name?

How's your paper with Grisebald
coming? I haven't heard from
either of you for ages.

Best wishes

Harold

May 31 1956

Dear Hannah,

Soon after the appearance of our South Australian paper, Jerry wrote me that someone had called his attention to the prior use of the name *C. rotundum* by Turner, so *C. rotundum* Presc. & Scott is not valid.

There is a very similar desmid in the new paper by Scott & Grönblad which we are naming as a variety of the Australian plant, so we are changing the species name to *C. callossissimum* Scott & Grönbl. (Syn. *C. rotundum* Presc. & Scott).

In the same mail with your letter came a note from Grönblad enclosing two revised descriptions, and he asks that you look over his Latin. Would you please do so at your convenience, and return them to me. There's no great rush.

The term "facies" seems to be causing a little trouble, as you will see from Rolf's remark concerning a letter from Ruzicka. My understanding of the situation is that Teiling invented the term and used it in his papers a few years ago. Then I believe he proposed it for acceptance at the Botanical Congress in Stockholm, but the Committee did not accept it, for what reason I do not know. So legalistically the term is not a taxonomical unit, just as Ruzicka says. But Teiling and Grönblad and I, and I hope you and others, are going to use the term "facies" and make it a taxonomical unit. These terms, like "facies", "forma", "chamaera", etc., are not invented by the Congresses nor their Committees on Nomenclature. All they can do is to approve them, after they get into current use by a sufficient number of authors to compel their approval.

Formerly "facies" were named as varieties or formae, with the authors' names attached, so I can see no good reason why the authors' names should not be used with "facies". I must confess, however, that I have not much patience with all these legal rules and recommendations. No doubt they are necessary, but many of them are couched in such involved language that I cannot make head nor tail out of them.

Just received Jerry's latest paper in the Botanical Review, "Guide to Literature". A laborious piece of work, and I see that you had your hand in this also. You are giving so much assistance to others that I hardly see how you can get the time for your own research

Yes, my part in the new paper by Grönblad and myself is finished for the time being, but he still has a lot to do. I am now working on a short paper on Peruvian desmids which were worked up by Dr. Krieger from some samples that I sent him. After his death his son, Dr. Kurt Krieger, sent me his father's notes and sketches. The notes were on small scraps of paper, written in a minute German script, very difficult to decipher; in fact I had to ask Rolf's assistance with some words and phrases that I simply could not make out. Many of the sketches, also, are not quite suitable for illustrating, so I am now going over the material again and making my own sketches to a larger scale. Later I shall ask you to write the Latin diagnoses for the few new taxa. Krieger never gave Latin diagnoses; one of these days someone will declare a few hundred of his new names invalid on this account.

Sincerely,

Is Ruzicka on your mailing list? His address is Dr. Jiri Ruzicka, Biological Inst., Dept. of Hydrobiology, Trebon, Czechoslovakia. Please send him your papers.

May 24, 1956

Dear Hannah,

Thanks for your letter of May 9th, also the reprint of your paper from Trans. Am. Micros. Soc.

I was able to make the correction in the diagnosis for *Cosmarium vitiosum* which happened to be among the 14th batch. Yesterday I finished the last of the 36 (or perhaps 37) plates; I have lost count because I could not number them, since I was obliged to start drawing before all of the sketches and diagnoses came to hand. It is by far the largest job of illustrating that I have tackled, and it includes practically all of the new forms that I have accumulated during the 17 or 18 years that I have collected in southeastern USA. I had to omit a few taxa for one reason or another, - unsatisfactory or incomplete sketches, lack of time to search for additional specimens, apparent discrepancies in determinations, etc; but these can go in a future paper.

The paper was presented in an incomplete form to the Soc. Sci. Fennica at their meeting on May 14th, but I have not yet heard whether they accepted it for printing. If they insist upon the complete paper, we shall have to wait until the next meeting in the fall. I was able to get 22 plates of drawings with descriptions, some introductory pages, and a list of habitats, to Rolf before the meeting, but a second lot got there a few days too late, because I understood the meeting was to be on May 19th instead of the 14th.

Rolf did not say much about how the Finnish general strike affected him. A few days before the start of the strike I had written him that I proposed to have my plates inked over here, instead of letting his friend Miss Toina Tikkanen ink them in Helsingfors (or Karis?), as we had arranged last summer. I knew that he could not send any letters, so I tried to telephone him on a Sunday to take advantage of the lower rate. I got him on the phone all right, but the connection was so extremely poor that neither of us could understand what the other was saying. I could faintly hear him shouting "I can't understand, I can't understand", and the New York operator who was trying to get a better connection said that he was getting very excited. Finally I managed to make out that he wanted me to send him a telegram, which I did, and got his answer next day. The long distance operator cancelled the call and all the charges. I can easily imagine how excited he must have been, and I suspect that it's the first time a phone call from America ever went through the exchange in Karis.

It started getting warm a couple of weeks ago, and since then the temperature has ranged from 85 to 90, once hitting 94; today it is back down to about 90. Fortunately the nights have been fairly cool, 65 to 70. About June 1st it gets hot and stays that way until Oct 1st, with day temperatures 90 to 98 and nights from 80 to 85, and relative humidity 80 to 95%. I'm darn glad that the drawing job was finished before then; it is unpleasant trying to draw in such weather, for your arm sticks to the paper despite a fan blowing directly on you.

Probably Rolf has sent you a reprint of the enclosed paper on *St. bibrachiatum*, but the second copy may come in handy to cut up the plates for your iconograph. I did not want my name to appear as co-author, for all I did was to make some camera lucida sketches of some of his Italian specimens, but he insisted upon sharing the authorship.

A few days ago I got from Kossinskaja a few of her papers on desmids.
Her address is:

Mme. (?) or Dr. C. S. Kossinskaja,
Prof. Popov-str. 2, Ap. 20.
Leningrad, USSR.

Suggest you send her your reprints and enclose a slip asking for an exchange. The papers are in Russian, but there are Latin diagnoses of the comparatively few new taxa, and her drawings are good. I think Rolf sent you the first part of her *Flora Plantarum Cryptogamarum USSR*, and he sent me the second part recently. I bought a Russian dictionary (Dover Publications, \$2.98) thinking I might be able to translate some of her comments, but that crazy Russian alphabet is enough to drive anyone nuts, and anyway I've been too busy to make any serious attempt.

My next job is to tackle Telling's manuscript, which I shall do in the next couple of days, and return it to him by airmail.

So long, and best regards from Edith and myself.

Dear Scott,

May 9
Hanover

In Cosmarium vitiosum of your current mss., with Grönblad, he has used the Latin expression "Cellulae quartam partem longiores quam latae". My Latin prof., from Italy, tells me that it should be quarta parte (ablative degree? difference). Can you make this change, or am I too late? I don't believe it is very important, because Grönblad's Latin, though different from mine, is often better and very rarely ~~long~~ wrong.

You must be having a long siege of drawing with all those new forms! I hope for your sake that you are quite or nearly through. Did Grönblad suffer any hardship during the long Finnish strikes? and did it interfere seriously with your collaboration?

We are having a very cold May - up to 60° in the daytime, maybe, but down below freezing every night. The season is nearly a month behind.

Best wishes
Hauke

? apl
May 19

Dear Scott,

Thanks for the letter.

Yes, you are right about facies if it is an accepted subdivision, like forma (I hadn't realized it was) then "facies *triradiatum*" etc is OK. Facies is the ablative "case" of facies. I had thought we ought to say "triradate in facies" (like "6 in in thickness" etc), but I thought, too, that I was probably wrong.

I heard from Teeling today, and he seemed to accept the drawings the way I had made them. He has been more or less laid up with a transient eye injury and exema from a formalin sensitivity - poor guy! And he's being rushed by the Health Commission on his plankton of Stockholm lake survey.

He seems a little grieved that his geometry baffled us. Math always baffles me. I've never studied much.

I wasn't criticizing "eclecticis". It's a lovely word!

Best wish
Stannard

(copy from my iconograph)

Staurastrum diacanthum Lemaire

Pl. 1, Fig 15

30 μ long + proc.

20 μ " - "

37 μ lat + " a spines

9.1 μ with mes.



cf. *S. acrostrophum* v. *subgenium*
in Grönb. (Kew)

+ *S. paradox.* v. *diacanth* (Lem.) Hornfeld

+ *S. acrostroph.* v. *subgenium forma*
in Borze

Messikommer 1949, p. 245

Hochmoo
Schweizland.

Sunday night

Dear Scott,

Enclosed is the Ichthyodontum. My Latin prof is now in Madrid[±], but seems to like to have me send him Latin, so I have sent him copies to correct. It might come back in 2 or 3 weeks (he's moving about), and I'll send any corrections on to you at once. So hold up if you can, but if not, I think my version is accurate enough to be inconspicuous, since I had the old Bipolaris to refer to.

Digitized by Hunt Institute for Botanical Documentation

Enclosed also are tracings from Diakonoff, Wolle 1892 & my iconograph of species of these certain authors which I happened to notice in your notes (to Grisebald) were not available to you. If they are of no use just chuck them. The Wolle one is very unsatisfactory: the middle area is just cluttered with irregular stippling - impossible to tell whether he means it to be chloroplast or granules - probably he couldn't tell, as I often can't. The St. diacanthus is a copy of a copy & so not very dependable.

I filed your figures of Ichthyodontum but can return it if you wish.

Best wishes to you both

Harold

Apl 16 1956

Dear Hannah,

Many thanks for sending the final package of drawings and descriptions so quickly. It came this morning, and now I can proceed with the remaining plates.

In a number of cases you have queried "facie triradiatum" or "facies Triradiata"? My Latin dictionary does not list "Facie", so I don't know the difference between "facie" and "facies", except that they seem to be of different genders. But wouldn't both of them come under the same rule as "forma" and "varietas" and take the same gender as the genus name? I can't put my hands on the Rule Book just now, but I think it says that names in all subdivisions of a genus must conform to the gender of the generic name.

Jaeger's "Source Book of Biological Names and Terms" defines "eclectic" simply as "astounding", and this enormous *Arthrodesmus* certainly astounded me when I first found it. If I had known that its original meaning was "inspiring with terror" I might not have used it.

I can't answer your question as to whether Telling wanted the inked drawings on paper or cardboard; I have not seen any of his own originals. But he can easily mount your paper drawings on board if he wants to, in fact I think that many authors use that method. During my engineering work I got so used to tracing paper that it is by far the easiest method for me.

Telling has not answered my last letter yet, but in a previous one he said that if I returned his Ms. in May it would be OK. Already I have written up most of my comments on his taxonomical part, but am waiting for some sketches that I asked for before tackling the geometrical discussion.

With my best regards,

Sincerely,

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

April 10

Dear Scott,

Grönblads packet arrived and is about the same size as the other (3" high) and contains Arithodesmus (should be Staurodesmus!), the filamentous desmids codd & euds. In his attending letter he says this is the last part.

I have been snowed under with work since I got back so have not looked at them except to answer your query, but will try to get them

off to you next week.

We had a fine trip, luckily dodging all storms & bad roads. We got as far as Charleston, S.C. - did > 3000 miles, as much as possible on smaller roads - the blue roads on road maps.

I haven't heard from Teelis since I sent him his drawings inked on paper, not card board. He did not specify in time. Do you know whether he can use them or should I give him a cardboard set? I don't mind doing them again. It is just the time element

since I have this ms of yours & Rolfs as well as a set of 10 diagnoses to write for another author.

I don't know why the Micro. Soc. rushed ~~to~~ my paper through. I told them from the beginning that I was in no hurry - just wanted to get it off my hands. Yes, I became a member, obviously, only to have my paper eligible for consideration.

The *Cosmaria* are all my own identification. Of course I had shown my rough drawings to ~~him~~ *Finland* a couple of years ago but he made only a few suggestions, which I didn't always take. They are certainly baffling. I still do not feel at least at home in the genus.

We still have snow on the ground here

Best wish

Harold

Dear Scott,

March 12

The corrected Latin diagnoses of Ichthyodontium came back from Spain today! I mailed them on Mar. 5, so that is prompt too!

There weren't many corrections and I am here passing them on to you in red ink on the copies that I kept. I am sorry that 2 of them are so confused looking. (another time I'll make carbons looking for this emergency). Please disregard all the blue-ink corrections. And when you are through with them throw them away. I'm saving ^{destroyed 2/17/56} for my files the corrected versions that my prof. sent back, because of his notes on them.

He's just back from Fort Toledo, which he says is a wonderful town, and is now off to Lisbon and then to France. He says "the weather is bright and warm when the sun is out, but cold at night."

Our weather is pretty messy, with wet, icy streets - but lovely when the sun is bright

Sincerely
Hammel

DARTMOUTH COLLEGE
: Department of Zoology :
HANOVER · NEW HAMPSHIRE

Mar. 1

Dear Scott,

The Scott-Gronblad mss.
arrived safely. I am delighted
to have it and can start work on
it this evening and get it back
within a few days.

Also your letter arrived
asking for diagnoses for Steliodontium
I do always save copies of the letters
I write (primarily for the corrections)
so I have it, as of 1954, under the
name of Botanic ^{and I will be a}
great help. I am sorry that you
spent any of your precious time looking
for it. I can imagine how rushed
you must feel!

I'll do the Scott-Gronblad stuff
first. I can hardly wait to get a look
at it anyway.
Sincerely
Hannibal

Mch 6 1956

Dear Hannah,

Of course I should have told you that the duplicate slides were intended as a small gift, an insignificant return for the great amount of work you are doing for Rolf and myself. But the fact is that I have been so darn busy that I forgot to do so. Anyway the slides only cost two bits apiece, and I think they are quite good, much better than some enlargements of my English pictures in which the colors are rather dingy looking.

The package of drawings and descriptions arrived safely yesterday, and today came the Latin diagnosis of *Icthyodontum* in just over 24 hours after the postmark in Hanover, the quickest yet. Many thanks for all of them.

Also I appreciate very much the trouble you went to in copying the illustrations of *St. novae-caesarea* and *St. diacanthum*. Cushman's drawing shows a rather small clear space in the center of the apical surface, and thus corresponds more or less with my plants from southeast USA. But as I remember from once seeing some of Cushman's papers, his illustrations are not too good, and the granulation he shows does not check very well with what I see. I am glad to have his drawing, however, because I have never been able to make sure that his *St. pulcherrimum* was identical with *St. novae-caesarea*, and it was for that reason that I asked you to get some material from Fiddling Pond; unfortunately I did not find any specimens in the dozen tubes that you sent, though I searched them carefully.

Rolf seems to be correct in identifying my desmids as belonging to *St. diacanthum* Lemaire, but as usual there is considerable variation among them, and one at least I think should be separated as a variety because it consistently lacks the two prominent spines for which the species was named. I am calling this to his attention.

Sorry to hear that you have given up the idea of coming to New Orleans during the Easter vacation; but I thought when you suggested it that you would have to some long and hard driving, and would have little time to spend along the road. And I suppose that 2 weeks is as long as you get, except in summer, and you had better not visit New Orleans in the hot season from June to the end of September. The climate is quite oppressive, its both the heat and humidity. We manage to survive by not exerting ourselves any more than we have to, and we have plenty of table fans, and a 42" attic fan that runs all night.

Finland is cut off from the world by a general strike that started March 3 or 4. I hope it will be settled quickly, otherwise it will play heck with my correspondence with Rolf. There are many points to be discussed, and he will have a lot of work after I send him the plates.

With best regards,

Sincerely,

I gather that you only became a member last Fall, and it usually requires two years for printing. You have a remarkable assortment of Cosmaria, and I am curious to know if you identified all of them yourself, or if you had help. These temperate and sub-arctic forms are extremely puzzling, and I am glad that my subtropical ones show considerably more differentiation; even so, Cosmarium is the most troublesome of all the genera.

May 8 1956

Now that Jerry has taken on the editorship of the Transactions we stand a chance of getting more botanical papers, which will be a great relief from the steady Diet Hennings that the former editor has been feeding us for the last several years. But how the ~~editors can~~ ~~underbake~~ ~~the~~ ~~stated~~ ~~to~~ ~~be~~ ~~par~~ ~~jects~~ ~~with~~ ~~all~~ ~~the~~ ~~other~~ ~~in~~ ~~any~~ ~~that~~ ~~be~~ ~~has~~ ~~the~~ ~~there~~ ~~we~~ ~~can~~ ~~not~~ ~~im~~ ~~agine~~ ~~it~~ ~~if~~ ~~we~~ ~~see~~ ~~d~~ ~~to~~ ~~be~~ ~~any~~ ~~un~~ ~~like~~ ~~d~~ ~~has~~ ~~at~~ ~~all~~ ~~in~~ ~~work~~ ~~the~~ ~~roads~~ ~~in~~ ~~New~~ ~~York~~ ~~which~~ ~~must~~ ~~have~~ ~~been~~ ~~pretty~~ ~~well~~ ~~blocked~~ ~~with~~ ~~snow~~ ~~if~~ ~~you~~ ~~had~~ ~~managed~~ ~~to~~ ~~finish~~ ~~the~~ ~~plates~~ ~~on~~ ~~and~~ ~~get~~ ~~the~~ ~~books~~ ~~in~~ ~~the~~ ~~press~~ ~~is~~ ~~an~~ ~~amazing~~ ~~feat~~ ~~is~~ ~~not~~ ~~at~~ ~~all~~ ~~im~~ ~~probable~~ ~~Most~~ ~~of~~ ~~last~~ ~~week~~ ~~the~~ ~~temperature~~ ~~was~~ ~~in~~ ~~the~~ ~~80's~~ ~~one~~ ~~day~~ ~~it~~ ~~reached~~ ~~86~~ ~~rather~~ ~~warm~~ ~~for~~ ~~this~~ ~~time~~ ~~of~~ ~~year~~ ~~today~~ ~~is~~ ~~cooler~~ ~~about~~ ~~70~~.

Sincerely,

Thanks for the corrected Latin diagnosis of Ichthyodontum; I was able to make the few changes in my Ms.

Tellings's paper requires quite a lot of changes, not surprising since it is written in a foreign language that he is not too familiar with. I know French pretty well, but if I were to attempt to write a lengthy paper in it I should get just as much mixed up as he has. I don't wonder that you felt "dazed" after reading his geometrical discussion. I have read it a dozen times, and tried to figure it out, but still am unable to get a clear conception of his new terminology. So I wrote and told him that you had put that part of it up to me, and said that I also was unable to comprehend his system, and that in correcting his English I would have to go into a more or less detailed criticism, with a result that might not be to his liking, and asked his permission before proceeding. He came back saying that he would appreciate any ~~critic~~ criticism, so yesterday I wrote him a long letter, including other subjects, and made some preliminary remarks about his geometry and asked for a couple of rough sketches with the various planes identified, which would enable me to unravel the meaning of two sentences whose intent is very obscure.

I asked why he felt it necessary to introduce this new terminology, and said that I felt that the conventional three planes of ordinary geometry, the horizontal and two vertical planes, with which the most complicated crystal forms can be described, ought to be sufficient for the relatively simple symmetry and asymmetry of desmids. Also I remarked that I was quite surprised, and a little irritated, to find that after causing the reader to spend some time and effort in trying to assimilate the new terms, he makes no further use of them in all the rest of the paper, until he comes to the penultimate page, where the word 'interradial' is used just once.

Now I know he won't like my frankness, for which I asked his forgiveness.

But honest to goodness, I wouldn't like to see him publish the paper in its present form, even with the English corrected. The other points that you raised can be straightened out without too much trouble. 'Origin' is the correct mathematical word for 'origo' which I have never seen; it is the point of intersection of the three planes, or of the vertical axis with the horizontal plane. In the taxonomical part of his paper I can offer some additional information from my own observations and records that I believe he will find of interest.

Grönbjäl has sent direct to you the last of my drawings and his descriptions, but I am not sure if he sent one or two packages. The last one contained Arthrodesmus, the filamentous genera, and a few odds and ends in Cosmarium, Euastrum, etc. Please drop me a line and tell me if you have another package, so that I can form a better idea of what is still left to go on my plates. I have about 20 of them finished in pencil, and they are now being inked by my friend Mrs. Perine. I guess there will be 35 or 40 plates altogether.

Have seen the second installment of your paper in Trans. Am. Micr. Soc., and like it very much. How in the world did you wangle such a prompt publication?

Feb 26 1956

Dear Hannah,

Under separate cover I am sending you another batch of drawings and diagnoses just received by airmail from Grönblad. Will you be kind enough to check his Latin, as you did before?

Grönblad for some months has been trying to find out the size of the plates for our new paper, which he said would be different from that of his own papers on Brazil and Lapland as printed in the Acta Soc. Sci. Fenn. Now it turns out that the size will be the same as before, so I must get busy drawing at least 25 plates and get them to him by May 1st, so that he can present the finished paper at the next meeting of the Society on the 3rd Saturday in May. So I would appreciate anything you can do to get this stuff back to me promptly. And there is still more to come; the genus *Arthrodesmus*, and the filamentous genera at least. I don't like to ask you to rush, any more than I like being rushed myself; but that's the way it frequently happens.

About 18 months ago you made the Latin diagnosis for the new genus from Sumatra, and Jerry and I were all set to publish when it developed that the first 2 specimens seen were dichotomous combinations of two different forms. So we postponed publication, and I asked my friend in Java to try to get living material that could be cultivated. He visited Sumatra again last April and sent living material to Starr and to Killip, but both lots arrived in poor condition and neither of the men was able to induce specimens to grow in culture media. So now Jerry and I are going to publish, but we have had to revise the generic and specific diagnoses to correspond with the two different forms of the plant. I am enclosing the revised descriptions, which are pretty much the same as the first ones, with only such changes as were required to fit the new conditions. I am very sorry to say that I have mislaid your original Latin, and am unable to find it, though I have searched high and low. Perhaps you kept a carbon copy; I hope you did.

Any more news about your proposed trip South at the end of March? Jerry was thinking of visiting the Everglades in Florida about the same time, but I think he has changed his mind after I told him that collecting conditions are rather difficult and that he would probably not get many new desmids to repay for the trouble and expense. I had hoped to be able to go with him to Florida, but the deadline that Grönblad has set would prevent me from doing so. However if you can manage to get as far as New Orleans I shall be able to spare a couple of days to show you the sights, and both Edith and I would be very happy indeed to see you and your mother.

With best regards,

Sincerely,

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

Feb 28

Dear Scott,

Thanks very much for the duplicate slides, from your Finnish-Swedish pictures. Since I ordered them I'd like to pay for them, so I'm enclosing a check which, I think, covers it.

Mother and I have acquired faint hearts or cold feet, or something about trying to get all the way to Louisiana in this Spring Vacation. We are both slow drivers, with a highway-phobia, and we'd never get there and back by ambling leisurely about country roads. So we have given it up, and shall just drive southwards to no set destination, and probably get no further than Kentucky or No. Carolina. How sorry, for I'd love to have a visit with you, and see your 'lab'. But I'll have a look again at the photo you sent me, and maybe you'll come North once more.

I'm looking forward to a second lot of your Scott-Griehl manuscript but remember I'll be away from here between Mar. 24 & April 8/4.

Thanks again for the pictures!

Hansel

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

March 11

Dear Scott,

Thanks very much for the gift of the slides! And they certainly are beautiful reproductions.

I have always regretted that I drew a blank in Pudding Pond. Maybe I can try again some day at another season.

Teeling's paper on asymmetry has just arrived, for correcting English & inking a few figures. He tells me to send it on to you, which I am delighted to do because I'm glad to have another head in on this editing. Some of it is pretty tough going for me, and I realize that I am not following his thought well enough to correct the English accurately. I'll get it off to you in a week or less, when I finish the drawings, and you'll see what I mean. The more I read of Teeling the more I value his judgement and opinions - but I find it harder going than Ralf's latin!

Awful to have Fuland in this strike mess! I do wish we could get Ralf set up in this country!

Thanks again
Hansal

Feb 1

Dear Scott,

I sent all the manuscript
back to you yesterday - first class, but
not air-mail, in 2 packages, just as
you had sent it to me. I do hope it
arrives promptly and quite safely.

Thank you again, very much, for
entrusting me with "the works". It made
the whole job easier, and infinitely more
interesting! In fact I never enjoyed a
Latin job more, and shall look forward
eagerly to the next lot.

Grimblead Latin proved to be excellent!
My Latin prof., instead of being grumpy
about it, was adequately impressed, and
"passed" almost everything. As you can see,
I made very few changes, mostly the
same few over and over. Thanks again
for getting it to me so promptly, in time to get
this confirmation.

I am certainly impressed with the vast
number of novelties, and the beauty of your
drawings.

Sincerely

Harsh

Feb 3 1956

Dear Hannah,

The two packages of drawings and descriptions arrived safely this morning. Many thanks for the promptness with which you handled them. From the numerous small changes that you had to make in Rolf's Latin I can now understand your remark that you found checking his Latin was more troublesome than writing it yourself, but I have not written him anything about it. You might mention it yourself.

Thanks also for calling attention to Bill Wade's use of the name St. furcatum var. Taylorii. He showed me the mimeographed thesis when I was in East Lansing in the fall of 1954, but I was so busy that I did not have a chance to go through it properly. I did, however, notice another desmid that looked familiar, St. brachiatum var. robustum, which I believe is the same, or nearly so, as the Florida plant to which G. and I have applied the same name. I wrote him about it a year or so ago, because I knew that the question of priority would come up, but he did not answer. So I shall write him again next week and see if he can tell me when his thesis will be published. If it appears before our paper his names and authorship will naturally take precedence, even though I found the first plant and noted its probable identity with Taylor's in 1942, when Bill was probably more interested in girls than in desmids.

Friend Telling writes that you are checking his English in a Ms. on asymmetry in desmids, for which I sent him a number of sketches, and he suggested that I might like to look at it with a view to possibly commenting on some of the examples. So if he writes you about it, you can send it to me and I will look it over and return it directly to him.

If you were fascinated with these USA desmids I think you'll probably go nuts when you see some of the extravaganzas from the Sudan, Brazil and Indonesia, which you will get in due course. Some of them are almost unbelievable. Did you ever look at the tropical samples that I sent you? And I am glad if seeing "species in the making" has been of some help and inspiration to you. Try to imagine my fix when I started from scratch in 1938, knowing nothing about botany or any branch of biology, and with all my inclinations pointing towards engineering, mathematics, and the 'exact' sciences. I had played with a microscope and had even seen some desmids in 1920, but around New Orleans could find only plain and uninteresting forms of Closterium, Cosmarium, etc. Then about 1938 I picked up a second-hand copy of Conn & Webster's Algae of Connecticut, and in spite of the terrible drawings I got some idea of the beauty of the large and elaborate species, and then I found some Micrasterias about 50 miles from New Orleans, and started to draw them freehand for I had never seen a camera lucida. A man in the U.S. Forestry Service and another in the La. Dept. of Conservation (as it was then called) were very helpful, got me started by loaning me apparatus, and put me in touch with G.W. Smith, who passed me on to Taylor, who sent my sketches to Prescott. But I had to learn everything the hard way, how and where to collect, how to prepare and preserve them, how to manipulate and draw them, where to beg or borrow or buy literature. And I was 50 years old when I started; wish I had found those first Micrasterias in 1920. So I am gladd to pass along any of the things I have learned, and if at any time there is anything that I can help you with, all you have to do is to ask.

Sincerely,

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

January 23, 1956

Dear Scott,

Thanks for the air-mail letter which arrived today, answering all questions. I would not have bothered you if I had known that I was going to receive next day a letter explaining the manuscript and answering some of my questions. Don't tell Gronblad not to write latin, except to save him trouble. Actually his latin is wonderful, and I learn a lot by trying to check it. He expresses many things differently than I, but his way is often as good or better. My trouble comes when I try to check the things I am not sure of with my latin Prof. He seems to me unduly impatient with ways that are not his ways, and I don't know enough latin to know when he is right and when opinionated. But I shall take a lot of little questions to him tomorrow and hope that we can settle most of them amicably. I have been all through the first lot - 80+, and the second lot arrived today.

It is utterly fascinating! I can't keep to my latin job but must stop all the time to look up and see if I don't have one or the other of your novelties in my Alaska stuff or in my iconograph. Of course mostly I don't, but often close enough to be interesting. It is a great privilege to see species in the making this way; I learn a lot from your comments and discussions but particularly from your drawings and methods of observations. It would have been a very good thing for me if I had had such examples set before me when I first began to work on algae. But I do not feel that it is too late to learn.

I'm returning the slides tomorrow. I tagged about 10 with little stickers that can be easily pulled off, I hope.

Thanks for your cordial reception of our proposed visit. I'll let you know if it comes down out of the air.

Hauke

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

Jan 17

Dear Scott,

Thank you for the pictures from your trip! They are wonderful, and such fun for me to see, although they make me 'homesick' for those places you got better ones of the people than I did. And I was glad to see "Tebo". I shall send them back soon. Would it be asking too much to have copies made of one or two of them some day, to round out my series?

Thanks also for the letter which arrived today. I don't mean to inconvenience you about making the diagnoses to me. I just thought that it would be simpler to have a few soon if you happened to have some ready. It doesn't matter!

No, I have nothing to do with the recent Grinblad paper, of which he sent you proofs. I have never collaborated with him, merely sent him material now and then as he asked for it.

Mother and I are thinking of driving South during this coming spring vacation (March 25 - April 5th). If I could 'wangle' a little extra time we might get as far as New Orleans. Would you be home around then? I would like our families to meet, and I would like to see your set-up. It is just a thought, so far.

Best wils

Hansel

DARTMOUTH COLLEGE
∴ Department of Zoology ∴
HANOVER · NEW HAMPSHIRE

Jan 19
Hanover

Dear Scott,

The manuscript arrived safely but I am overwhelmed at the responsibility of having "the works". I'll take good care of it and try to get it back soon.

At the moment I am somewhat ~~baffled~~ baffled, since I find it harder to correct other folks' latin than to write my own. Another time I hope R.C. will write in English which you will correct and then send to be to be latinized. However, it is a good game this way, too.

Just a few questions:

Do you want me to send them back in small lots as I complete them, or wait until all are checked - maybe 2 weeks?

Is the order important? I could pencil-in numbers.

His latin is rarely a close translation of the English. Should I lengthen the latin to include more of his English?

In how much of a hurry are you to have it back?

Sincerely

Hansel

Jan 21 1956

Dear Hannah,

Your letters of the 17th and 19th just arrived, simultaneously.

Yes, I can easily imagine that it is more difficult for you to correct someone else's Latin than to write it yourself, and I shall pass your remarks on to R.G. and ask him to omit the Latin in future.

The only reason I rushed the drawings and diagnoses to you was so that you could correct the Latin before your Professor goes away. Yesterday I sent you the remainder of the first lot, by ordinary mail. There is still more to come from Finland for when I was there I counted something like 165 novelties, while there are only 130-odd in the present lot. My total I guess to be around 1000 taxa, but for the present G. and I are only working on the novelties.

There is no great rush about getting them back to me, so you may either send them in several lots, or keep them until all are finished, as you prefer. Also it is not necessary to number them, for they must be arranged alphabetically for publication, and this cannot be done until I know that I have all of them, and I am pretty sure that there are more *Staurastras*, for instance.

I don't think you should lengthen his Latin. He wrote "The Latin and English diagnoses are not always identical, but the English description is made to compensate and explain the Latin". However, if you think it desirable in certain cases I am sure he would have no objection.

Glad you liked the slides; I thought myself that I had remarkable good luck with nearly all that I took. If you will put a red or blue mark on those that you would like copied I shall be glad to have them made. I am going to get copies of some of my English ones anyway, to send to my sisters in Devonshire.

Yes, we shall be home at the time you mention, and it will be delightful if you and your mother can include New Orleans in your trip. The end of March

and early April is about the best time to visit here; the cold weather will be over and the hot weather starts in May. I hope you will be able to stay here for two or three days, so that we can show you some of the countryside and my favorite hunting grounds.

Sincerely,

Jan 9

Dear Scott,

A letter from Grönblad today says that he is sending you the bulk of your joint manuscript, including many diagnoses for me to correct or write.

I'm very glad to have them, as always, but I would be glad to have them as soon as possible.

My Latin prof, who checks my work is going away in mid-February. I can send them to him while he is abroad but that is less satisfactory for him, and slower. So if you can send me some soon that will be fine.

Sincerely
Hannal C



AIR MAIL-POSTAL CARD



Mr A. M. Scott
2824 Dante St.
New Orleans 18
Louisiana

Parorthins is all right
for "not quite straight"!

I have some Sodium CMC
thanks. You gave it to me.

Happy New Year

Stannal

Jan 18 1956

Dear Hannah,

The package from Grönblad arrived this afternoon, and I am sending you about two-thirds of the drawings and descriptions. I thought it best to include the drawings so that you may have a clear idea of what is being described.

He wrote that the English diagnoses are not always identical with the Latin, but are intended to complement and explain them. So the Latin will not be affected by the small changes that I shall have to make in his English.

I will forward the remainder of the present lot in a few days. There are still a good many more to come from Finland, all the filamentous genera, the Arthrodesmus, and a think there are more Staurostrums.

You do not need to return them by airmail, ordinary mail will be quick enough.

I think you will be surprised, not only at the number of novelties, but at many of the curious and elaborate forms.

Sincerely,

DARTMOUTH COLLEGE
HANOVER · NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

Dec 26

Dear Scott,

In the Greek dictionary there is a word $\pi\alpha\rho\acute{o}\sigma\theta\iota\omicron\varsigma$ which would come out parorthios (-a-um) meaning "tolerably straight". I think this would be exactly right, but my Greek-Latin prof is out of town so I haven't checked it yet. It is not in an English dictionary, nor do I know of it in any scientific word, but I figured it out myself and then looked it up and found it - so I think it's good. I'll check with Prof. Venial when I can, and write again.

Thanks for the fine long letter telling something of your trip to Sweden and Finland. I had wanted so much to hear! And I am so glad that you liked and admired Grönblad as much as I did. I was rather afraid that I had given him so much of a build-up that you might be somehow disappointed. I guess you would confirm my earlier sweeping statement that

"Karis had little to offer, but Grönbled had everything". And apparently you were just as much liked and esteemed by Teeling and Grönbled. So all was wonderful!

Did you know that another man is going over next year! Did Starr, to see Kallio principally, but also Teeling and Grönbled. He's a very nice person, too. I think this international visiting is fine - much more satisfactory than Congresses. I wish you could get Grönbled over here! I'd help in any way I could.

Thanks for your criticism of the Clostridium-Eurostroma paper. I agree with you for the most part, and have done more "evening-up" in my 2nd and 3rd papers. One reason I stopped looking at my collections and began to write up what I had was to find out whether my drawings were adequate. I always seem to have to learn things the hard way. When I finish this 3rd paper and start looking at algae again I'll hope to know how to make better drawings.

Certainly I would like to see your colored slides of Sweden and Finland!

You and Edith certainly got in a lot of sight-seeing! Mothé and I just drove miles and miles in rural north Scotland and western Ireland.

Please both of you come north again for a visit!

Happy New Year

Harvest

THE UNIVERSITY OF CONNECTICUT
STORRS, CONNECTICUT

Department of Botany
April 13, 1955

Mr. Arthur M. Scott
2824 Dante Street
New Orleans 18, La.

My dear Scott:

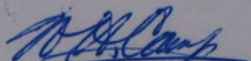
Glad to get your letter. I'm not backing down on the Latin, in principle, and you can call me all the names you wish! However, you mentioned an item which (let me say) has not been handled either with the proper tact on the Congress floor or in the proper manner regarding what I'm completely aware is a problem with phycologists. Looking back at things in the past, the principal proponents among the movement for dropping Latin descriptions for algae approached the matter primarily from this angle alone. And they got mulishly stubborn about it!

If you wish really to get rid of the Latin diagnosis then make a proposal similar to that of the paleobotanists. Today the paleobotanists stand in the really enviable position of not having to use a Latin diagnosis (Art. 45). And how did they get into this seventh heaven? By the simple expedient of first getting a special rule through making it mandatory that a satisfactory illustration be published. Having got this through, then it was a relatively simple matter to get a Congress to take the next step. The phycologists have never really attempted this in a sound and logical manner; and this is at the base of their troubles. Let the phycologists first push through a rule demanding a satisfactory illustration -- and at the same time set up criteria for what constitutes a "satisfactory illustration" and write it into the rules -- and it will be only a matter of time until they can officially drop the Latin diagnosis. It's just that simple. But I really doubt that you will get to first base trying to make any change merely on the basis that you "don't like Latin," for a broad principle ~~is~~ ^{involves} many groups of plants is involved. I'm being blunt, as my friends will tell you I can be. But I must say that it was a bit saddening to watch some of them, back as far as the Stockholm Congress, stubbornly butting their heads against a stone wall, trying to throw down the Latin diagnosis without first setting up the necessary mechanism requiring adequate illustration, labelling, etc. Just keep clearly in mind that the Code is not inflexible;

the paleobotanists have demonstrated this simple fact; and the Bacteria also are an exception. So spread the news, and get enough phycologists lined up for the next Congress who, ahead of time, have drafted a workable ruling regarding what must be done. This will demand a careful review of the starting dates for the various groups of algae -- based on the first published syllabi, etc., of these groups, and in which adequate illustrations were used. I'm willing to bet if, instead of spending time scrapping among themselves as they did at Stockholm, the phycologists would calmly review the situation and present a concerted proposal, with all the necessary safeguards, that they would be able to get things across.

Incidentally, I have a recent letter from Dr. L.H. Tiffany, Northwestern University, Evanston, Illinois, stating that a student of his was bumping into something even a little more complicated than dichotypy! You might wish to drop him a line and enter into correspondence.

Cordially yours,


Wendell H. Camp, Head
Botany Department

WHC:msw

Mme Paullette Gayral
Centre d'Etudes Supérieures
Lab. de Botanique
Rabat.
Marocco.

THE UNIVERSITY OF CONNECTICUT
STORRS, CONNECTICUT

Department of Botany
April 4, 1955

Mr. Arthur M. Scott
2824 Dante Street
New Orleans 18, La.

My dear Scott:

Thanks for sending the items. Sorry, but those papers dealing with biosystematic items seem to have been more popular than I had anticipated, and so I've scraped the bottom of the barrel.

The bifurcation between systematics and taxonomy goes back to the writings of A.P. DeCandolle, and specifically to his "Theorie élémentaire de la botanique," Paris, 1813. It was in this work where the word "taxonomy" was first used and defined. I'm just a little afraid that Teiling has misinterpreted things a bit. Taxonomy is a study of the laws underlying a system of classification. Systematics is concerned only with the classification of objects within a nomenclatural system. And Biosystematy (which was named and defined by Camp & Gilly, The Structure and Origin of Species, Brittonia 4: 323-385, 1943) "seeks to delimit the natural biotic units and to apply to these units a system of nomenclature adequate to the task of conveying precise information regarding their defined limits, relationships, variability, and dynamic structure." Now you have the precise original definition before you -- and one might say "right out of the horse's mouth." And I don't think that there could be any idea that its applications should be made solely at the species level.

Taxonomy is deciding the sorts of criteria which will be used to delimit species, genera, families, etc. Systematics is the classification of the material under some accepted taxonomic system. Biosystematy starts with the living population and (usually) by some cytogenetic means makes a pretty good stab at understanding the nature of the breeding community; from there it branches into the causes of variability, the differences within the geographical distribution -- in short, all pertinent items which will shed light on the nature of the units within the system which can and ought to be nomenclaturally recognized.

Biosystematics is a tough assignment. A student of mine and I have been working on several species in the local area for the last year -- and intensively, too. At long last we begin to see what sort of populations they have, how they "behave", and the sorts of variability they have, so that now we feel that we are ready to begin their study. A "systematist" would have "solved" this problem in about

fifteen minutes, but working from the biosystematic angle we have uncovered gross errors of interpretation in all former treatments, and what the books say about these several species just isn't so!

And now to your questions.

Art. 82 permits the correction of orthographic errors, and the wrong gender is an orthographic error. Personally -- since like Shakespeare, I have "little Latin and less Greek" I'm inclined to let the dern dogs lie, for there are a few tricky items in several places when words are transferred from Greek to Latin, or vice versa. When I'm really stuck I generally write to Dr. H. W. Rickett, New York Botanical Garden, New York 58, N. Y. Don't use generalizee cases, but actual examples, with full citations of original places of publication. As I say, some are a bit tricky, and a generalized answer might not fit a particular case.

The same principle holds for the endings of formae. Off-hand I'd say that a safe middle ground generally would be to correct orthographic errors, merely making note of the situation the first place where this is done for each taxon.

At the Stockholm Congress (1950) mandatory use of initial capitals for certain types of specific epithets was abolished. It now is "dealer's choice." The U.S.D.A. now regularly decapitalizes, as does the Kew Bulletin -- and others.

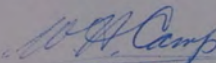
Regarding Latin diagnoses, I'll say this. They are a damned nuisance (and please don't stop your reading at this point and quote me!), but I voted for their continuance at Stockholm, it was continued mandatory at Paris last summer, and so long as a vote is taken on the matter I'll still vote for a Latin diagnosis as long as I live! And I'm not being a die-hard antiquarian, as you obliquely accuse me; I'm only practical about the matter.

It so happens that I've been working with a group (the Ericales) which are world-wide in distribution. Every year reprints of papers containing descriptions of new species and genera come to my desk. I have papers printed in the following languages:-- English, French, German, Swedish, Finnish, Latvian, Czech (Domin wrote voluminously in this language), Russian, Spanish, Portuguese, Italian, Chinese, Japanese, and a few I don't remember; also the Magyrs are beginning to publish in their own brand of Cyrillic, Irish botanists are starting a journal in Gaelic, the Pakistani group are trying out papers in their particular form of Arabic, which is very different from the official form of Pisthu now creeping into official Indian papers -- and so it goes. But, thanks to heaven, the latest one from Japan has me puzzled in the discussion, but I still can make something out of the descriptions of new material -- for by law, to be valid, they have to be written in some form of Latin. This is the only thing which keeps plant systematics from being a morass of slimy chaos.

I know Hustedt. I am extremely sympathetic with his views -- and yours. But I'm just enough of a realist to know what would happen. In fact, right now I'm up to my ears in this very situation regarding the description of horticultural materials. The Code for Cultivated Plants says exactly what you advocate -- either English, French, or German. And what has happened? There has already been a revolt by the Russians (using a Cyrillic script). The Oriental peoples can't see why they aren't on a par with others. And Spanish and Italian language horticulturists are protesting violently that "we're just as good as anybody, and intend to describe our new materials in our own language." What Hustedt and others forget is that Latin is a dead language and that its use cannot offend anybody, since it is neutral. Therefore, let's have a Lingua Franca for plant systematics; but it has to be non-partisan. Until a true international language is invented, I intend to stick to the principle of requiring Latin diagnoses, if only to save my own skin and to keep something of an even keel to my knowledge of my pet group of plants. I'm sure that when you consider the modern trend toward nationalism, which is slowly creeping across the world, and the actual revival of native tongues as official languages (as Gaelic was revived and made mandatory for Ireland and for official publications and documents), you will see that the only sane course is to hold steadfast to the Latin requirement. I venture to say that you'll become a quick convert the first time a paper hits your desk which follows the "Hustedt school" among algologists, and in which all new species are named in Latin, with sp. nov. attached, but are described in Russian or Japanese!

Good Luck! and I don't really wish that sort of mental misery on you. But this is exactly what Hustedt and the rest are asking for. And if they ever get it, the rise of nationalism in the world being what it is today, the chaos which will soon confront them will be their just deserts. The basic principle is this: Today, in this funny old world, if you abolish mandatory Latin descriptions, you then will have to open the doors to validity of description in any language. We might as well face this situation and quit arguing about it.

Most cordially yours,



Wendell H. Camp, Head
Botany Department

WHC:msw

Jan 13 1956

Dear Hannah,

I have your postcard and note regarding the Latin diagnoses for the new paper by Grönblad and myself. Yesterday I had a letter from Grönblad saying that he would send the package by airmail "in a few days", so I have no doubt it will arrive soon. He wants me to correct his English descriptions, and I shall get busy on them at once, and then forward the Latin to you, in one or more lots, depending on how many he sends, so that you may be able to consult your Latin professor.

Also he has sent me the printed proofs of the plates for a new paper (by Grönblad and you ?), inked by Miss Tikkanen; very nice work, though again I notice some of the irregularities in outline that I mentioned to you. Perhaps my eye is too darn sharp! or I am hypercritical. I am going to try to have Miss Tikkanen ink the plates for the next paper by Grönblad and myself.

Sincerely,

Dec 16 1955

Dear Hannah,

Thanks for sending me the reprint of the first part of your Alaskan paper. I had already seen it in Farlowia, but am glad to have the separate to keep on my microscope table instead of in the bookcase. Have you found a publisher for the remainder of the paper? It is a pity that Farlowia had to fold up; I should have thought that a rich institution like Harvard could easily have afforded to make up the deficit to keep it running.

I like your paper very much; it is well written and with plenty of ecological information of the kind that is all too frequently omitted, sometimes from necessity of course. The drawings are well done, and I admire particularly the smooth curves of your *Glosteria*. Since you invite criticism, I hope you will not mind a few remarks. In the *Eastra* I note that some of the figures are somewhat lopsided, or skewed as in Pl. 12, Fig. 15. The skewing no doubt was caused by the specimen not being quite level, and sometimes it is impossible to make them stay level because of their lenticular shape. When one of my camera lucida sketches comes out like this, and I cannot get another sketch, I straighten it up in the finished drawing, and this is allowable I think. The lopsidedness is another matter, and caused, I believe, by the impossibility of making the pencil point follow exactly the profile of the object. Not a single one of my camera lucida sketches is symmetrical, and often they require considerable 'fairing'; in doing this I make frequent visual reference to the actual specimen, after folding back the camera lucida prism, to make sure that the finished drawing is as exact a representation as I can make it. I know your opinion that desmids very frequently are not quite symmetrical, and I agree that in *Micrasterias*, for instance, there is often a difference in the lobulation of the right and left margins; in such cases I draw it that way. But it is my belief that the vast majority of desmids approach so closely to perfect symmetry that when I see a specimen in which the left and right sides are not alike, I regard it as imperfect, and I do not draw it if I can find others.

I don't know if I have told you about a material that I use sometimes, sodium carboxymethyl cellulose, or Sodium CMC in the trade. It is a white powder which when dissolved in water gives a solution of any desired viscosity, much higher than glycerine, and it has the great advantage over glycerine of a much lower refractive index, so that the objects stand out much more clearly and sharply. I used it this morning for the purpose of balancing a biradiate *Staurostrum* in order to get the top and side views, after cussing for several hours yesterday while trying to balance it in plain water. The is one trouble with such viscous solutions, - the specimens have a tendency to drift slowly after the coverglass has been disturbed. You just have to get used to this, and move the objects very very carefully and slowly. I can send you some of the Sodium CMC if you would like to try it.

There is a considerable number of desmids that exhibit what might be called 'regular' asymmetry. *Cosmarium obliquum*, for instance, is constitutionally asymmetrical, and there are one or two others. Another class, principally *Staurostra*, has processes that do not radiate from the exact center of the cell in top view, exemplified by *St. gyrans*, *subgracillimum*, *vestitum* var. *tortum*, etc. And still another class in which the furcate ends of the processes are twisted out of the vertical plane, as in *St. Clevei*, *leptacanthum*, *Rosei*, etc. Telling is going to write a paper on this subject, and I have recently send him a number of sketches that

will add considerably to his own list. It will be quite interesting to see what reason he can assign for this phenomenon, which seems inexplicable to me.

Teiling wrote me about your visit to Linköping, and no doubt he told you of my stay with him. He is just as kind and generous as you had described him, and as I had judged from his letters. We had some long talks about desmids, and I had considerable profit from them, but I must confess that I know far too little about biology to understand his rather advanced views on desmid evolution. He took Ruth out to his summer cottage one day, to stay with Mrs. Teiling and the two grandchildren, and I went along for the ride, which was very enjoyable and enabled me to see something of the countryside.

In Finland I stayed for three weeks in Karis, staying at THE hotel, and taking all my meals at Grönblad's house. He also is one of the finest men I have ever met, and I deem it a great privilege to be associated with him. He went to no end of trouble in getting foods that I liked, such as grapefruit and American corn flakes which constitute my breakfast, and such hothouse delicacies as tomatoes and cucumbers. But I regret to say that I did not much care for the rest of the food in Sweden and Finland; it is so vastly different from what we are accustomed to in New Orleans.

Grönblad and I went to Turku to see Dr. Kallio, who showed us his cultures and demonstrated his method of picking up an individual desmid, centrifuging it, and returning it alive to the culture solution. Seems like a magician's trick to me! I was specially interested in a shipment of living material that a friend in Indonesia had sent Kallio from Sumatra, containing a new genus of desmid, which I hoped he would be able to cultivate. But the tube arrived with the desmids in poor condition, and the two or three specimens of this unusual desmid failed to survive, though some others were growing nicely.

Dr. Hans Luther and his wife took us on their boat for an excursion through the Skerries, and to an outlying island with a lighthouse, I have forgotten the name though it is in my notes somewhere. There we had a wonderful al fresco tea seated on the granite rocks, several kinds of open-face sandwiches, small cakes, beer, tea, and coffee prepared specially for me, and all served as daintily as you could in your living room. I don't see how Mrs. Luther prepared it in the confined space of the small cabin on the boat, which, as you know, is so low that nobody can stand upright. Afterwards we proceeded to the Biological Station at Tvärminne, where we spent the night, and returned to Karis by train the next day. I met Dr. Palmén, Dr. Palmgren, and Dr. Luther's father, all wonderful people.

Almost all the other days I worked with Grönblad from noon (after he had finished his breakfast!) until 10 or 11 pm, going over my drawings of desmids from USA, Brazil and Sudan. From the Sudan we found about 211 taxa in 3 vials from a single lake, of which almost one-third are novelties. And in my USA collections we found about 160 new species and varieties, which Grönblad is now writing up and which will form the subject of our next paper. Our study of the Brazilian material is not yet finished, but it also is very rich.

After leaving Finland I returned to England and picked up my wife who had stayed at my sister's in Devonshire, and then we took one of the standardized tours of Western Europe, visiting parts of Holland, Belgium, Switzerland, Italy and France, and cutting through some corners of Luxemburg, Austria and Germany. It was a very wonderful experience, but we found that touring under these conditions was very hard work, and that we were too old to enjoy it properly. Like many Americans we had put the European trip off too long, though it was impossible prior to my retirement. I have some good colored slides from Sweden and Finland, and would be glad to send them if you would like to see them.

Can you give me a single Greek word meaning "almost straight", or a Latin word, something like "paenerectum" or "subrectum"?

With kind regards, sincerely,

DARTMOUTH COLLEGE
HANOVER · NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

Dear Scott,

Here is the latin. It was very simple.

I have only a couple of questions: in the second variety I would suggest changing unispinum to unispiniferum, since the former is not an adjective. Also, I have not translated "Habitat..." The latin "habitatio" and "habitus" do not have the scientific meaning of habitat. I would suggest

saying "In loco dicto Borneo (X et 38); Sumatra (110)" and "In loco dicto Sumatra (10F)" as Taylor does, or, better, omitting it, as you have done before. Or you could beg the issue by writing "Hab."

I have not heard from Grönbald for many months but in his last letter he spoke with great enthusiasm of the Sudan desmids. You certainly have a gold mine of interest and excitement there. I am so glad that you will be together for three weeks this summer.

Your itinerary sounds wonderful! What a lot you will see! Mother and I may go again but it

will be a very conservative trip in comparison. We will
be there only in July and August, and practically all of
that time in Scotland. Maybe we will get across to
Ireland too, and maybe I'll make a quick dash to
see Teeling - just because I am so fond of him & his
wife. I'd like just as much to see Grönbled again
but it would mean too much more time and money.

My 1st paper on Alaskan algae was supposed
to come out ~~next~~ ^{last} month, but no sign of it yet.
I'm struggling to finish a second - practically all
Cosmarium - before I leave this summer. - if.

Digitized by Hunt Institute for Botanical Documentation

My best regards to Edith, and I hope you both
have a fine trip.

Sincerely,
Haustral

April 25 1955

Dear Hannah,

Many thanks for doing the Latin so quickly, and for your suggestion as to "unispiniferum" which I have adopted. The drawings and paper are now on the way to Java (\$6.35 airmail postage) where it will be published in Reinwardtia, the new name of the former Bull. Jardin Botanique de Buitenzorg. The Botanical Garden is now called Kebun Raya Indonesia.

Teiling sent me the enclosed steamer schedules, thinking I was going by steamer to Sweden and Finland, but I am flying instead. They might be of some service to you if you go over this summer, though I suppose you could sail from one of the northern ports in England instead of returning all the way to London. I shall be with Teiling from June 20th to 25th, and then with Grönblad until July 14th. It would be wonderful if you should drop in unexpectedly while I am there!

We leave one week from today, and already Edith is getting excited. By next Sunday she'll be almost unmanageable.

Best regards to you from both us.

Sincerely,

April 8 1955

Dr. Wendell H. Camp, Head,
Department of Botany,
University of Connecticut,
Storrs, Conn.

Dear Dr. Camp,

It is extremely kind of you to write at such length in answer to my questions, some of which must have appeared rather foolish to you. But such freely given advice is of great help to amateurs like myself, who do not have the advantage of personal instruction in a new and difficult subject.

You have made clear to me the difference between taxonomy and systematics, on which I was somewhat confused. It appears, however, that some botanists use the term taxonomy rather loosely. For example, yesterday I received two issues of *Chronica Botanica*, and in glancing through them I noted that such big-shots as Frans Verdoorn, Theodor Just, and Merrill use the word in the evident sense of classification. Teiling will be surprised to learn that he has misinterpreted your term biosystematy. I am going to spend a few days with him in Sweden at the end of June and shall take your letter along; then I am going to Finland for a 3-weeks visit with Rolf Grönblad, whom you may have met at the Congress in Stockholm. He also has quoted you, in a joint paper for which I have just corrected the proof, in connection with your statement that a species is not merely a type specimen, but a living population subject to variations from several causes. This agrees exactly with his views and mine. I have just completed a paper, and sent it to Prescott for approval, concerning some very curious cases of dichotomy in a Staurostrum, in which I think I have succeeded in proving that two forms, hitherto classified as two distinct species, actually belong to one species, because they form dichotypical cells with one semicell of each of the two forms. For this paper I have been able to supply illustrations of many differing forms from Borneo, Java, Sumatra, North Australia, Sudan and Finland, all of them exhibiting the feature of dichotomy, or with both forms occurring in the same collection.

I must confess that your attitude toward Latin diagnoses astonishes me. If many persons in similar influential positions follow your policy of appeasement it is no wonder that the Rule stays on the books. The zoologists have abolished Latin, and I suppose they are more numerous than the botanists, so their problem could have been no simpler. But if botanists cannot abolish it, at least make the three major modern languages permissible as a substitute; if the minor nations protest too vociferously, outvote 'em, and let 'em publish in Gaelic, or Magyar, or Swahili, but declare such publications invalid, as you now do with publications without Latin. If I were able to write me own papers completely, without assistance from Prescott or Grönblad, I would most certainly ignore the Rule, as many other and much more able workers are doing, and I would take my chance on the names being declared invalid at some future time.

I, too, am receiving papers printed in most of the languages you mention, and I am corresponding with a number of persons living in countries whose languages I do not know, Sweden, Finland, Holland, Czechoslovakia, India, Indonesia and Japan. They write in English, French, or German, and I reply in English or French, and we get along very nicely. Sometimes their English is quaint, as is doubtless my French, but there is no difficulty about understanding each other.

You say that if I received a paper with new species named in Latin, but the formal description in some incomprehensible language, I should change my mind. That hasn't happened so far, but if it did I don't think it would make much difference, because with these microscopic forms, as Hustedt has pointed out in his remarks which I quoted, it is the drawing that counts. A dozen pages of description would not enable even an expert to visualize correctly, let alone draw, even a moderately complicated desmid or diatom, but a good drawing conveys an exact image instantly. And that is where I come in. Even Wm. Randolph Taylor says my drawings are good, and since you probably know him you'll appreciate that this is a high compliment. Recently I sent him some photomicrographs of new desmids, and he came back quickly expressing the hope that I was not going to abandon drawing for photography; there is no danger of that because photos are useless for identification.

The only way of identifying a desmid or diatom is by comparison with drawings of other authors. In the final determination the formal description must be taken into consideration, of course, but in the case of a difference between the drawing and the description it is the drawing that governs, in the large majority of cases. Undoubtedly the same is true for higher plants, but there you have the possibility, theoretically at least, of examining a preserved specimen. Permanent mounts of desmids are difficult to make, and their permanence so uncertain, that few workers are bothering to make them. I have had the opportunity of examining some slides made 50 to 75 years ago, made by some of the best workers of that time; very few had any value as references and many of them were so badly deteriorated that they are mere souvenirs of the famous names of Nordstedt, West, and Lütkenüller.

So as Hustedt pointed out, it would be perfectly possible to make an exception to the Latin requirement in the case of microscopic plants where the picture is all that matters. But from your remarks I can see that there is little chance of this being done.

With renewed thanks for your kindness,

Sincerely yours,

Mon 25 1955

Dr. W. H. Camp,
Academy of Natural Sciences,
Philadelphia, Pa.

Dear Dr. Camp,

Here are a few items for the Taxonomic Index:

Bourrelly, P., and E. Manguin. 1952. Algues d'eau douce de la Guadeloupe et Dependances. 277 pp, 31 pl. Societe d'Edition d'Enseignement Superieur, 99 Boulevard Saint-Michel, Paris. Price Fr. 1800.00

Though this was published in 1952 I do not recall seeing it listed in the Index, possibly ^{because} it was issued as a book, not in a journal.

Grönblad, Rolf, and Paavo Kallio. 1954. A new Genus and a new Species among the Desmids. Bot. Not. 1954:2, 167-178, and correction in Bot. Not. 1954:4.

This describes a highly unusual desmid genus from Brazil. It was first named Scottia mira Grönbl., but after publication it was found that Scottia was already occupied, so the name was changed to Amscottia mira.

Teiling, Einar. 1954. Actinotaenium, genus Desmidiacearum resuscitatum. Bot. Not. 1954:4, 376-426.

Though this does not deal specifically with plants of the Western Hemisphere, there are many American plants mentioned and American authors cited. It is an important work of revision, and I believe should be listed.

In the last named paper, my friend Einar Teiling quotes you (1951) as saying that the term 'taxonomy' is used in the sense of distinguishing genera and higher taxa, and the term 'biosystematy' should be used when dealing with species and lower taxa. I have not encountered this concept before, and would like to know the reason for using two different words for what seems to me one integral study. So if you can spare a reprint of your 1951 paper I should be grateful if you would send it to me; also I could use any other papers that you may have written on biosystematy, which would help me to a better understanding of the subject. When I first started 18 years ago on the collection of desmids as an amateur's hobby, I did not imagine that I should ever become involved in their systematics, but it appears that I must take a hand in it, though it is unlikely that I shall have to deal with families or higher groups.

I wonder if you would be kind enough to give me your opinion on the following points of nomenclature:

1. In the literature you sometimes find cases where the wrong gender has been used for a specific name, e.g., Phymatodocis irregulare Schm. Should this be cited as Phy. irregularis Schm.?
2. Many of the older writers used feminine endings for names of formae. Should these names be changed to the masculine or neuter forms, where appropriate?

3. Glosterium venus and Cl. cynthia seem to have been named for mythological Greek goddesses who symbolized the planet Venus and the Moon, respectively; both plants are crescent-shaped. These named therefore are not names of real persons. Some authors insist on capitalizing them; others don't, though they capitalize others that are evidently derived from actual persons. What is your opinion?
4. I understand that at one of the recent Botanical Congresses a Rule or Recommendation was approved permitting, though not requiring, the discontinuance of capitalization of patronymics. What is the concensus of opinion regarding this? Are many botanists ceasing to capitalize?
5. Was any action taken at Paris last summer regarding the abolition of the requirement for Latin diagnoses? or is any progress being made toward this end? I would like to add my mite; ~~to me it appears an~~ antiquated, obsolete rule, maintained only by some die-hard antiquarians. (Maybe you're one of 'em). Since any serious worker nowadays must be able to read one or more of the three major modern languages, English, French and German, a diagnosis in any one of them ought to be sufficient. I think that few students take a Latin course, and those who do forget most of it as quickly as possible. I never studied Latin, so I have to pay \$1.00 each for the Latin translations. That's not an unreasonable price, and the lady who does them will never get rich on it. But for a paper now in press I had to cough up \$45.00 for 45 diagnoses, and that ain't hay! Several prominent algologists disregard the rule entirely; they provide no Latin diagnosis. Here's what Dr. Friedrich Hustedt, probably the world's foremost diatomist, wrote about it, 1952: "Was die Diagnosen der neuen Arten betrifft, so bin ich bereits im 2. Teil dieser Serie zu lateinischen Diagnosen übergegangen. Ich bin aber grundsätzlich der Ansicht, dass Art. 38 der Int. Regeln der bot. Nomenklatur wenigstens für die einzelligen Pflanzen zu streichen ist. Statt lateinischen Diagnosen sind einwandfreie Abbildungen die einzige Bedingung, die gefordert werden muss, wenn eine neue Art anerkannt werden soll! Die Entscheidung über derartige Fragen sollte man Forschern überlassen, die jahrzehntelang in praktischer Arbeit mit dieser Organismen stehen, aber keine Debatten darüber zulassen von Botanikern, die nie etwas mit diesen Dingen zu tun hatten. In artenreichen Gattungen sagen lateinischen Diagnosen nichts - gute Abbildungen sagen alles. Die zoologischen Nomenklaturregeln verlangen keine lateinischen Duagnosen, obgleich die Beschreibungen hier mesitens wesentlich komplizierter und gute Abbildungen vielfach schwieriger sind, was aber in der Zoologie möglich ist, sollte in der Botanik nicht unmöglich sein! Um zu verhüten, dass irgend jemand, dem ein sklavische Bindung an nicht mehr zeitgemässe Nomenklaturregeln das Endziel botanischer Wissenschaft zu sein scheint, meine neue Arten als "not valid" erklärt, sehe ich mich zu lateinischen Diagnosen gezwungen, erkläre aber, dass ich auch in Zukunft jede Art ohne Rücksicht auf die Sprache, in der die Veröffentlichung erfolgt ist, anerkennen werde, unter die Voraussetzung, dass die Beschreibung von einwandfreien Abbildungen begleitet wird".

Hope I haven't bored you too much with this rigmarole, and I should be grateful for any advice that you can give me.

Sincerely yours,

April 2, 1955
McComb, Miss.

Dear Sir;;

Recently purchased your Bel Air Chevrolet from the New Orleans Auto Sales Company on Canal street and was advised by local dealer in McComb to request from you the Owner's Service Policy for the 5000 miles check up, if available.

Would greatly appreciate you forwarding this policy to me and thanking you in advance for your trouble. Your car has been kept in perfect shape and would like to keep it that way for a long time, it is a pleasure to drive.

yours truly,

Ashton G Cousins

213 Fourth Street
McComb, Mississippi

Apl 4 1955

Mr. Ashton G. Cousins,
213 Fourth St.
McCamb, Miss.

Dear Mr. Cousins,

I bought the Chevrolet from the New Orleans Auto Sales Co. last November. When I asked for the Owner's Service Policy they informed me that they could not give me one, as they are not authorized dealers. Sorry that I cannot help you, therefore.

I sold the car back to them because I am used to driving a much larger one, and could not get accustomed to the small car. There is nothing wrong with it.

Yours truly,

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

Mr. Arthur M. Scott,
2824 Dante Street,
New Orleans 18, Louisiana.

February 25, 1955.

Dear Mr. Scott:-

I must again ask your pardon for delay; it has taken longer than I expected to get to look at all the things you sent. I thank you for the samples, and the interest and effort to obtain for me material with *Terpsinoë musica* from Mobile Bay. Though please do not feel obligated to pursue this because of my mention some years ago, unless it anytime becomes easily convenient for you to do so. I had almost forgotten the thought, but always do have in mind the unusual forms of that Genus found there.

I am returning the pictures you sent, assuming that you wished them back, and with some few notations in pencil on the back, I hope in such position as not to deface them for your purpose. I like your method of drawing on this tracing paper, which I suspect has a number of adaptable advantages.

About the "mechanical micromanipulator" -- I decided not to draw mine which is very oddly shaped, but mainly because knowing it, I did not feel it would be very well suited to the purpose you mention, and think I can suggest something simpler and better. It should not be at all difficult for you with your facilities and ability to make yourself a device for this purpose, and I would certainly urge your doing so, for I think if you do you will be immediately gratified and relieved by the results in comfort and assuredness of keeping your specimens in right position. There is nothing so disconcerting as starting to draw an especially fine specimen and have it tilt or move out of favorable position. And to me moving my cover with my finger tip or with a dissecting needle as I sometimes do is entirely too hazardous and uncertain. Probably a device of your own designing would suit you best if you feel like such. Since you are a member of The American Microscopical Society and were when I published a small article I suggest that you refer to Vol. 63, No. 4, October, 1944 of the Transactions, page 358. It is illustrated. I do not refer you to this with the idea that it is just what you want, but rather suggestive. It is simple and you can probably improve on it and make it more adaptable to attach and adjust for your purpose. It is not even the best device for the purpose for which it is illustrated but was drawn to indicate something that anyone might prepare, or use as a basis for a better instrument. Your particular problem is really easy and should not be troublesome to solve.

At least your need for such a device should be satisfied for a very small amount of effort and money, in contrast to the device you mention as having seen advertised for \$ 80. or \$ 130. which as well as I can visualize the device from your description is to me a preposterous amount to ask for it, a conclusion I take it you also drew.

To return to the subject of *Terpsinoë musica* -- your drawings I take to be it; it has quite a range of size and shape, and the markings I take to be of the general pattern. I'm not very familiar with the habitat likeings of this species from personal experience, but I'm inclined to think that it tolerated quite a range of brackish water and would expect it to be found attached to plant growth in river or creek mouths with shade and rich organic matter content in the water, probably relatively quiet waters. I would not think your causeway where the earth had been worked over and bottoms disturbed with a lot of free expanse for agitation and muddiness, might be so favorable.

I find the pulling up of clumps of eel-grass or seaweed and wringing them into an open pail a very productive way of collecting, and easy too. I'd incline to look for *Terpsinoe* on rocks or plants in quiet protected waters, supplied with silica rich, cool, spring water, if such spots avail. There should be lots of it if the right place can be located, as it is a common Gulf area form, and the Mobile Bay form is especially interesting, at least that pictured years ago. If every/ you should strike it I could use a lot of the material. But, again, forget the whole matter unless ~~some~~ it seems thrust at you. I have talked at length merely to give you all I know about it, just in case.

Best of wishes,

Sincerely yours,

Paul S. Conger

Paul S. Conger

Mch 25 1955

Dear Hannah,

I suppose that friend Grönblad has told you about the wonderful new desmids from the Sudan collected by Dr. Gerald A. Prowse. He sent me some of the material last December, and I have been working on it, off and on, since then, and now have something like 170 different ones. Some of them are truly extraordinary; there are two *Micrasterias* with unlike semicells, one of which he is going to name *M. incredibilis*, and it is really almost incredible. There are a lot of other new species and many other little-known ones of which rather poor illustrations can be found in the African literature. Grönblad has very kindly invited me to collaborate with him and Prowse, and it will be a real pleasure to illustrate all these strange forms.

This desmid business is getting more and more complicated, it seems. From Indonesia I have specimens of *Staurastrum Wildemani*, a well-known species, that forms dichotypical combinations with three other forms, two of which are new. I have written a short paper on them and have sent it to Jerry for approval; also I need Latin translations of the two diagnoses, as shown on the enclosed sheet. Will you please do them for me, and return as soon as convenient? The rough sketches enclosed will show you what you are describing; my originals have all gone to Jerry.

Edith and I are getting ready for the postponed trip to Europe that we were supposed to take last year. We leave here May 2nd, sail from New York May 3rd on the S/S Ryndam, arrive Southampton May 10th. We shall spend a few days in London, then take one of the coach tours through England and into Scotland as far as the Trossachs. Then we go to Devonshire to spend a few weeks with my sisters, and about June 20th I shall go by air to Stockholm to visit Teiling for a few days, and then to Finland for a 3-week stay with Grönblad. After returning to England to pick up Edith, we shall go on one of the standardized European tours for 28 days, taking in parts of Belgium, Holland, Switzerland, Italy and France. Then we shall have a week or so in Paris (wish I were 30 years younger), and so back by air to New York. By that time I expect we shall have had quite enough sightseeing, but it is the last long trip that we shall ever be able to make.

How is your work coming? I am looking forward to seeing your Alaskan paper, but I suppose like everyone else you are experiencing the usual delays in publishing. It is more than two years since I sent to Australia the long paper by Prescott and myself on algae from Arnhem Land, and now I learn that it may be two years more before it appears in print!

With best regards from Edith and myself,
Sincerely,

Jan 20 1955

Dear Mr. Conger,

I thoroughly enjoy such letters as yours, so there is no need for any apology. As a matter of fact it contains something very interesting to me, your home-made micromanipulator. I have often felt the need for such a device, not for picking up objects, but for communicating small pressures or movements to the floating cover glass of my preparations, in order to manipulate the desmids into the various positions required for drawing them. At present, indeed for many years, I have been doing this with my finger tips. But frequently I can balance a desmid in the correct position only by maintaining a steady pressure, and then the pulsation of the blood in the veins causes the object to oscillate to and fro, perhaps by only a few microns, but sufficient to prevent my drawing or even measuring it. Some years ago I saw an advertisement of a "simple" micromanipulator, consisting merely of two dovetailed slides at right angles, actuated by rack and pinion. For this they wanted \$80.00, or \$130 with fine motion! So if you would be kind enough to give me a rough sketch of your contraption, perhaps I can adapt it to my needs and build one myself, for I have a fairly well equipped home workshop.

I have not forgotten your request for specimens of *B. mobiliensis* and *T. musica* from Mobile Bay. Each time I have crossed the causeway over the Bay I have thought of you, but there is a steady stream of highspeed traffic, and in the one or two places where you can pull out of line and stop, there is a wide expanse of uninviting mud, and usually it has been my lot to get there at low water. On my last trip a couple of weeks ago, I found that they are doubling the width of the causeway, which will be a vast improvement. The sand fill for the new roadway was in place, and this enabled me to get a sample for you, but alas, the two diatoms are not in it. I am sending the sample under separate cover; it consists of a little mud scraped from the surface just above waterline, at about low tide, and some fragments of the leaves of the only aquatic plant in sight. I got the impression, from some of the protozoa that I saw swimming around, and from some of the diatoms, that the water may have been brackish instead of really salt; no doubt you can tell this from the diatom species. Don't try to test for salinity, for I had to add tap water to wash the mud out of the collecting jar. The causeway crosses near the head of the bay, and the mouths of the Mobile and Tensas rivers are only a short distance away. When opportunity offers I will try to get some material near the mouth of the bay, where the water would be truly salt.

Also I am sending a sample from Midder Bayou, Fla., with a sketch of a *Terpsinoë* that has the general shape of *T. musica*, but differs sufficiently to make me doubt if it is that species, or a variety. A description of the habitat is on the sketch.

The box also contains four samples from Brazil. No. 54 contains a few very rare specimens of *B. mobiliensis*, with a multitude of other marine diatoms, and a few examples of what Müller-Melchers says is the resting spore of *Chaetoceras lorenzianus*. No. 61 has a few specimens of another *Terpsinoë*, which has four septae shaped like a music note in optical section. Nos. 15 and 16 have several species of *Actinella*, which look unusual to me, though probably familiar to you. This Brazilian material cannot be published, for duplicates have been sent to Dr. Husted for study. The American stuff is yours, if it is of any use.

With best regards, sincerely,

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

January 4, 1955.

Mr. Arthur M. Scott,
2824 Dante Street,
New Orleans 18, Louisiana.

Dear Mr. Scott:-

I appreciated your good letter. With you, I feel that the cost of \$20.00 for microfilm copy of Schmidt's Atlas is quite reasonable, considering the large number of folio plates and the cost of the original of several hundred dollars, not to mention its rarity and difficulty of obtaining. Like you, also, I should not care to have to locate and compare single specific diatoms with a reader. I do not have, and have never used, bibliofilm or microfilm personally so do not know from experience how practicable this is, but it would seem to me somewhat time consuming and nerve wracking to be jumping about from place to place reeling off long strips of film to find desired forms. The cost of prints runs it up high, but may be as you say cheaper in Uruguay, though I wonder if they do not import photographic materials and have to pay a good price. It will of course be cheaper if he does the work himself, and I might mention one more important saving feature, namely, that many of the plates and forms are ones he would never have occasion to deal with, such as rare, Arctic or fossil ones he would never run across. Making enlarged prints of only those sections that might concern him would doubtless cut the work and expense appreciably.

As you request, I shall not mention you to Dr. R.N. Darnell of the Tulane Zoology Dept., for I can see where if you are not collecting about your region it would be only a nuisance to you. What you say about your findings in the Sudan are most interesting and it must be exciting material to work on. I was surprised to hear that this is so new and different, for I would think that, as in the case of the diatoms, the distribution of desmid flora would be inclined toward the cosmopolitan in aspect with many same and similar forms widely spread.

Thank you much for the folder on metal-working tools which I am indeed pleased to see. It gives me ideas, and whether I shall invest or not I have not yet had time to consider. I had done nothing with the other, nor with the metal jobs I have in mind, having been busy with routine things, and not being equipped with these tools to make it easy. The small "Di-Acro" No. 1. Brake (6 inch capacity) adequate for my jobs, in the folder you sent me before appealed to me as a beautiful tool and the one best suited to my need, but the cost of \$65.00 was beyond me with my many demands personally, and since it is not strictly essential or applicable to my ordinary work I could not ask the Institution to get it for me, so I just didn't; but that was the ideal machine and I almost wish I had bought it personally, for I feel I'd have done a lot of things with it beside just the boxes I had in mind. But with three children, two girls at home, a boy going to college, and one girl wanting to go next year it has been all I could do to think of bare necessities, and have been confronted with many interruptions. I do thank you greatly though, as these folders, and seeing pictures of these tools are very suggestive to me for someday when I do find means for going ahead with such plans.

In the meantime, a year or so ago, I have designed and built an entirely

new type micro-manipulator, having no relation to anything I had seen before, and of really excellent qualities, if I do take the liberty to say so myself. I said "built", but you will have reason to smile when you hear what it was "built" of, in my clumsy way. It is crude, but works. It is made of a large spool cut to form needed pieces, tin from a tin can, a piece of dowel stick, a "lollypop" stick, and a bent metal part from a confiscated slot machine on a scrap heap. Very simple you see, and easy for anyone to make. It works on the cam principle for raising and lowering the armature. But it has precision, speed, delicacy of movement, flexibility, and several mechanical advantages over the nicely machine made one that I have used for many years, which is of course the reason I designed it. It should be made of metal, in smaller scale size, but again I did not have the tools, and that will have to wait till some later time.

Also, currently on my bench, and lingering there for some time past for the same reasons of inadequacy, is a new design Camera Lucida of very superior qualities, suggested to me in principle by a friend, but considerably redesigned and improved by me, which I badly need and am trying to finish, to supplant the old standard commercial article of five times the cost and half the efficiency.

So, again I appreciate your thought in acquainting me with these type tools which in time will repay the effort you have gone to to do so. I probably should apologize also for rambling along so; I had never intended to write at such length. With all good wishes to you and Mrs. Scott for the New Year.

Sincerely,

Paul S. Conger

Paul S. Conger

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

Mr. Arthur M. Scott,
2824 Dante Street,
New Orleans 18, Louisiana.

December 8, 1954.

Dear Mr. Scott:-

I must apologize most humbly for not having written you long ago and having kept up with you better, but many things seem to interfere, and I guess I'm not a natural as a letter writer. Also am tremendously disappointed to learn that you have been up in this part of the country and I didn't get to see you, since you are so far away and come so seldom and talking together is so much better than by letter. I remember so pleasantly your previous visit here, and would like to discuss many things with you. Incidentally those fine Stauroneis you sent me from Australia still remain unmounted, or I should have sent you one, for press of other things since I am not my own boss.

To get to your inquiry, my correspondence with Mr. Miller-Melchers is also as sadly in arrears. He is an ardent worker in a fine location, and a nice person to correspond with. I am surprised to realize that he did not have Schmidt's Atlas of Diatoms, and can help in answer to your questions. It of course contains plates on fossil, freshwater, and very miscellaneous diatoms, and not too much on strict plankton forms, but these will be interspersed throughout. The situation is as follows to the best of my information as just obtained:

Microfilm copies have been made several times of the Atlas copy you saw when here, by the Department of Agriculture Library, but they have since turned it over to the American Documentation Institute at the Library of Congress, from whom it should be ordered. The person in charge and to whom attention should be directed is Mr. Heath (I do not know his initials). The cost of microfilm, like everything has gone up; it is now \$ 1.00 for each 50 pages or part of 50 pages (35 mm. film). The Atlas was copied in 9 series, listed by the Documentation Institute as Documents 1101 to 1111. There are some 448 plates in all, and a page of text for each. Plates 77-80 were not issued at time of copying and may not be in the set (I don't know) Whether the microfilm copy is complete to date I do not know. They list as given to me plates 1-416 at least. I understand that Doc. 1111 comprises the complete film copy, cost of which is \$ 9.80. The same on 6 X 8 inch prints is \$ 91.40. These are positive copies (black figures on white background) as in the original. I hope to receive some of their standard order forms to include before mailing this.

Since I have not written Mr. Miller-Melchers for some time and since the inquiry has come through you I am sending you this information to relay to him, and suggest that the order be placed directly to the American Documentation Institute, Library of Congress, attention of Mr. Heath.

In the same connection I am taking on my own initiative to suggest that you mention also to Mr. Miller-Melchers another book which I think it likely he would not have and which he might be very happy to know about, of which microfilm has also been made and is available. It is Peragallo, H. & M. "Diatomees Marines de France." This was copied as Doc. 1098 (text) at \$ 2.00 and Doc. 1099 (plates) at \$ 3.00. The work complete is Doc. 1100 at \$ 5.00.

I see I have forgotten to include in my discussion above of microfilm of The

Schmidt's Atlas, that the price of \$ 9.80, as you can readily figure, covers the plates only. The text of as many pages to go with them is another \$ 9.00, and then it is very desirable to have a copy of the Index ("Verzeichnis der in A. Schmidt's Atlas der Diatomaceenkunde" Plates 1-240) to go with it. Later index has not been published. A copy of this would cost another \$ 2.00, making the total about \$ 20.00. It is doubtless understood that a microfilm reader is necessary in the use of this. I think that gives you all the information. Please remember me in writing to Mr. M-M.

You must have had a most enjoyable trip and visit enroute to the various places and persons you visited. I am glad you were able to make it and wish you could do so more often. My coming down your way has small prospects, at present none, but I remember your visit with much pleasure.

Congratulations on the most remarkable find of your new desmid of unlike semi-cells.

I have been looking at some material for, and having consequent correspondence with a very energetic and fine young fellow, Dr. Reznat M. Darnell, Zoology Dept., Tulane University, who, together with his equally nice and accomplished young wife, is making a rather full survey of Lake Ponchartrain and adjacent waters. They are primarily zoologists (instructor) but attempting to make a thorough investigation of the lake. I wonder if you might like to know them, if so I will mention you to them or I think you would find them very interested in personal touch. I am taking the liberty of mentioning them to you as above, but I am not mentioning you to them, not knowing whether you would wish to make such further contacts, and not wanting to involve you unless you so desire.

Please remember me kindly to Mrs. Scott, and with all good wishes to you both. I hope I have adequately covered the subject of your letter.

Sincerely yours,

Paul S. Conger
Paul S. Conger

P.S. I enclose a couple of the order blanks mentioned, but they would not be useful in ordering the above mentioned books (films), since the Atlas films are obtainable from the Library of Congress. The Dept. of Agriculture Library would copy the work and fill the order, but it would be only a negative copy. Since I have no order blanks from the Library of Congress it would be best just to order from them by letter direct. --- P.S.01

REQUEST FOR PHOTOCOPYING SERVICE

Author(s)				<input type="checkbox"/> Microfilm
Title				<input type="checkbox"/> Photoprint
Periodical title				\$ _____
Volume				<input type="checkbox"/> Remittance
No.				<input type="checkbox"/> Cash
Date				<input type="checkbox"/> Check
Pages inclusive				<input type="checkbox"/> Money Order
				<input type="checkbox"/> Lib. Coupon

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Dec 21 1954

Mr. Paul S. Conger,
Washington, D.C.

Dear Mr. Conger,

Many thanks for your very complete information regarding the microfilm of Schmidt's Atlas, which I have passed on to Mr. Müller-Wetters. It seems to me that \$20.00 is a very reasonable price, though I should not care for the job of looking up a certain diatom on the film, even with the help of a reader. I should imagine that if he buys the film, he will have enlarged prints made, or make them himself, which probably can be done considerably cheaper in Uruguay than in this country.

I think it would be better if you do not mention my name to Dr. Reznat M. Darnell. Since he and his wife are zoologists I could not speak their language, and probably they would have no interest in my desmids. I have practically stopped collecting in this country, because for the last five years I have been getting much more interesting stuff from many foreign countries. The latest is from Uganda and the Sudan, sent me by Dr. Rolf Grönblad, with whom I am going to collaborate in working it up. In one collection from the Sudan, a few mm² of sediment, I have already found 106 desmids of 16 genera, and the end is not yet, for every new slide that I examine has something different. There are some weird desmids to be found in the reference works, and I have seen many others, but this Sudan material beats anything I could possibly have imagined.

Enclosed is a folder describing some inexpensive metal-working tools that might be of interest to you, if you have not already bought the ones you were thinking of. The little bending brake ought to be just what you are looking for, if you don't want to make boxes more than 1" deep. Please keep the folder, I have no use for it.

With best wishes for the holiday season,
Sincerely yours,

Nov 27 1954

Mr. Paul Conger,
Smithsonian Institution,
Washington, D.C.

Dear Mr. Conger,

For the last three years or so I have been corresponding with a Mr. F. C. Müller-Melchers, Atlántida, Uruguay, who has been kind enough to send me some desmid collections from his country. He is interested in marine plankton diatoms, and says that he exchanged a few letters with you a long time ago.

In one of my recent letters I mentioned that I had seen Schmidt's Atlas in your office, and he immediately wrote back rather excitedly, asking me to find out if he can purchase a microfilm of the Atlas. Does the Institute have a microfilm service? If not, perhaps the Dept. of Agriculture Library has a copy of the Atlas, and could make the film. Other possibilities are the Farlow Library at Harvard, the John Crerar Library in Chicago, and the Univ. of Michigan. No doubt you can suggest others, like the Acad. of Nat. Sciences at Philadelphia.

It would be helpful if you could give me an idea of the cost of such a microfilm, which you could ascertain by phoning the Dept. of Agriculture Library and telling them the title, number of pages, etc. etc.

My wife and I have just returned from a long automobile trip, on which we visited Jerry Prescott at East Lansing, Dr. Taylor at Ann Arbor, Jules Brunel at Montreal, and Hannah Croasdale at Dartmouth College. Also I called on Dr. Lamb at the Farlow Herbarium, and if I had known about this request then, I could have obtained the information myself.

A year ago I had the great good fortune to discover a new genus of desmids from Brazil, having the unique feature of unlike semicells, previously quite unknown and unsuspected in the Desmidiaceae. It was published by Rolf Grönblad under the name Scottia mira, but it turned out that the name Scottia had been used way back in 1829 for a genus of phanerogams, so that our name will be changed to Amscottia. I will send you a reprint as soon as the correction is made.

Also a few months ago I found another new genus, this time from Sumatra, which presents a curious problem. There are two species (or a species and a variety), of which we have seen only specimen of each, while we have seen 24 ~~specimens~~ dichotypical specimens combining semicells of both forms. So now Prescott and I have to wait for more material from Sumatra, in which we hope to find additional and more abundant specimens that will enable us to determine which of the two forms to designate as the prototype.

With my best regards, and thanks in advance for whatever help you can give me about the microfilm,

Sincerely yours,

DARTMOUTH COLLEGE
HANOVER · NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

Aug 16

Dear Mr. Scott,

Thank you for the check, which was an overpayment! You must let me do a few for nothing next time, to catch up. I think you overpaid me last time too.

Also thank you for the sample of algae which arrived safely in spite of the fact that the end plug was very loose, and around under a loose wrapping of string. It is an entrancing mailing tube! perhaps the postal clerks played with it too much.

Following your warning I have not dared look at the algae yet. My manuscript is dis-patched but I am deep in another job - making illustrations for the second edition of Wilson's Bot. I. text. I hope to finish most of the drawings by Sept 5th or so and get down to Wood Hole for a week of library work.

What a tragedy about Kræge! Dr Grönblad had told me in a letter preceding yours by a couple of days but he spoke of it as a

"sudden and unexpected death" - no more detail.
Surely the editor will find someone to go on with
the work - at least to put out the nearly finished
Cosmarium. Couldn't Grönbled do it, or must it be a
German? We need the Cosmarium number so badly.

I hope Prescott gets to New Orleans. I know that
he often doesn't manage all he plans on - but
he does get around!

Thank you again for the algae, and the
generous check.

I think Saccharina heteropolare - is? is the
best yet.

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Hamul

Aug 9 1954

Dear Miss Crossdale,

Thanks for the Latin diagnoses, and the suggestions on the nomenclature. In Prescott's last letter from Montana he said that he is not one of the 'fromers' on patronymics, and doesn't say who they may be. So I think I shall go back to *Sachlania* for the generic name. Teiling also has called attention to the fact that 'bipolare' simply means two-poled, and has suggested 'heteropolare' which I think I like better than your 'allopolare', especially with the pronunciation that you say should be given the latter, rhyming (more or less) with 'metropolis'. The English rule of accenting the antepenultimate syllable frequently results in what appear to me monstrous pronunciations, like 'micROscopy', and 'therMOmeter'. If the ancient Greeks had an instrument for measuring temperatures I believe they must have pronounced it 'THERmoMeter'.

Last week I sent you three samples, one each from North Australia, Brazil, and Japan. The last one came from Dr. Minoru Hirano of Kyoto, and the bamboo tube is one of a bunch in which his samples were packed. A very neat and easy way of shipping. I would advise you not to start looking at the material until you have despatched your manuscript, for once you start I think you'll have a hard time stopping. The Australian and Brazilian samples are among the richest I have ever seen, and the Australian in particular seems to have an endless assortment of desmids; after examining notes from 20 slides from it I am sure that it contains occasional new species or variety, even though I have several other rich collections from the same neighborhood. In the Brazilian one you will find many of the strange desmids shown in Grönblad's 'De Algis Brasiliensibus'.

I suppose you have heard of the sudden death of Dr. Krieger, on July 15th. I had a letter from him written just two weeks before, giving his opinion on the new Sumatran genus. The announcement does not give the cause of death, but it would seem to have been a heart attack or something equally as quick and disastrous. It is a great blow to desmidiology, and I hope that someone will be able to publish the next installment of his Monograph, dealing with *Cosmarium*, which he told me a year or so ago was nearly finished.

Prescott is now in Mexico, and says he will try to return via New Orleans and pay me a visit, and perhaps go with me to the AIBS convention in Gainesville. But I'm not raising my hopes too high, for his expectations frequently do not materialize!

With my best regards,

Sincerely,

July 19 1954

Dear Miss Croasdale,

Enclosed is a copy of Prescott's diagnosis of the new demid, in which I have made some minor revisions (underlined). I have sent a copy to him and asked him to let you know by airmail if he concurs in the changes; I see no reason why he should not.

Since neither Prescott, Grönblad, nor Krieger liked my name Docideuastrum I have decided to use Prescott's suggestion of Bipolaris Sachlanii, which ought to suit everybody. I had it turned the other way around, Sachlania bipolaris, but Jerry tells me something of which I had no previous inkling, that some persons frown upon the creation of generic names from personal names. This is not a matter of great importance to me, and I must justify myself for doing this. The trouble is that it is an artificial convention dating way back into the nineteenth century, though I note that Mougeotia was created by Agardh in 1824. In the last fifty years there have been a number of such 'personal' generic names created by such authorities as West & West, DeFoni, Iyengar, Teiling and Grönblad, and those authorities are good enough for me.

The cast comes off my foot tomorrow and it will be a great relief to get rid of that horrible dead weight. I shall have to use the crutches for another two weeks at least, and even after that I shall have to be very careful with the ankle, for I can tell that it is far from being healed.

Are you going to the AIBS and Phycological Soc. Convention at Gainesville, Fla., in September? Jerry says he has it under consideration, but since he is going to Chihuahua in August it will probably end up by his being unable to attend.

With best regards,

Sincerely,

July 11

Dear Mr. Scott,

Thanks for the letter. I am awfully sorry I made you all that trouble about the slide of Microsteris! I don't know how it happened. I don't usually do things like that.

Congratulations on the new genes! How do you do it! I'll bet there are new things in my Alaska stuff that I am just not bright enough to see.

I wrote to Jerry Prescott telling him to send me the diagnosis ~~of the same~~ ^{of the same} my latex prep. was leaving on vacation soon. Actually, he could check it by mail, but it seemed like a reasonable excuse for hurrying Jerry. He might have delayed, knowing I was rushed trying to get my first installment of Alaska ready for Fialouia by Aug. 10

(I don't think I'll make it, but
I shall keep trying for a while,
One later diagnosis now & then
makes little difference. I enjoy them.

Thanks for telling me about
the phrase book. I shall certainly
get one or more if I can ever
go again.

And I am very sorry about
that slide!

Sincerely

Harold Crossdal

Jul 26

Dear Mr Scott,

I have done the latest
diagnosis of the new genus,
but am waiting a day or 2
before typing it for you, to
see if I hear from Jerry.

The enclosed letter is not
important, but I am trying
again, just on general principles
I don't think your P.O. is
very bright! I wasn't so far
off on the address.

I'm glad you have your
cast off at last.

The latest will follow soon.

Stanford

June 29

Dear Mr. Scott,

To my embarrassment,

I just found the ~~file~~ enclosed slide among my own. I think it must be one of yours that I failed to return with the others you lent me. I'm very sorry!

You will be off soon for Europe if you have not left already. I never heard whether or not you got your grant, so that you could attend the Congress. I do hope so.

Anyway, I'm sure you will have as wonderful a time with

DEPTFORTH COLLEGE
HARRIS - KEMMERS
UNIVERSITY OF TORONTO

Grönblad and Teeling as I
did. I am certainly going
back if I can ever manage
it.

Please give them my best.
I'd love to hear from you -
how it all works out - if
you ever find time to
write. I shall be in Hanover
all summer.

Sincerely

Stanval Croasdale

July 6 1954

Dear Miss Croasdale.

Today my wife and I were scheduled to fly from New York to London, the start of a three months vacation in Europe. Sorrowfully, as Teiling says, the trip has had to be postponed, because three weeks ago I fell and broke one of the bones in my ankle, which is now in a plaster cast. It is a bitter disappointment for me, and an even greater one for my wife, for we had been looking forward to and planning the trip since last winter.

No, I did not get the NSF grant to go to the Congress in Paris, and if they had given, and if they had given the complete details in the first announcement I should never have gone to the trouble of applying. A second press release, long after the applications were in, stated that there would be "between 12 and 15" grants available, each for \$400 plus return coach fare from home to port of embarkation, or considerably less than half the total cost. Further it was stated that preference would be given to younger applicants, which let me out at once, because I am 66 years old.

Last December

At Dr. Taylor's suggestion I sent to Bourrelly a synopsis of a short paper that I proposed to read at the Congress, in case I obtained the grant, on a bunch of new and little-known desmids from North Australia and Indonesia, illustrated with slides. When I wrote him that I could not attend, he said that my synopsis had already been printed in the preliminary programme, and that he must have the slides and would get some else to show them. So I have sent him 70 slides, partly photos and partly reduced drawings, and managed to get them off last week by airmail, after I was able to hobble around the house on crutches.

Grönblad has sent me an excellent pocket phrase-book, Sohlman Conversation Guide, with some 5000 words and phrases in four languages, English, French, German and Finnish. It is one of a series of 12 books, with various combinations of 12 languages, all starting with English, and comprising French, Danish, German, Dutch, Norwegian, Swedish, Finnish, Russian, Italian, Portuguese and Spanish. It is published in Sweden, and distributed in New York by Irving Rabin, street address not given. The price in Sweden is 8 Kr., and in Finland 380 Mk., so I suppose it sells over here for \$2 or \$3, and it really is well worth the price. If you can't pronounce the foreign words, there are 1800 small sketches, numbered to correspond with the text, to which you can point!

Would you believe that I have discovered a second new desmid genus? And that this one also had unlike semicells? In case you are incredulous I am enclosing a sketch to prove it. Please keep the sketch for use when I prepare the Latin diagnosis, which will be whenever Prescott gets around to writing it up. He thinks it should be placed in *Ichthyocercus*, which it somewhat resembles, though he admits that the strange combination of characters is sufficient justification for the creation of a new genus. Grönblad and Krieger, who have seen my sketches and a single specimen, also say that a new genus is justified.

Thanks for returning the slide of *Micrasterias Torreyi*. It happened that this was one that I wanted to send to Paris, and I hunted high and low for it. When I could not find it I substituted a slide made from one of my drawings, which will be just as satisfactory.

With my best regards, sincerely,

DARTMOUTH COLLEGE
HANOVER · NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

March 25

Dear Mr Scott,

Thanks for the fine letter, and for the diatom slides. The color is amazing! I have never done any photomicrography, myself, scared off principally by the expense, but I think that I shall have to try it some day. I have returned all the slides. One of the diatom slides jammed a little in the projector, and so got a kink in it. I hope that I have it flattened again, to stay. I'm very sorry.

Nellie Carter is Mrs. Montford

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Guildford, Surrey

(Telephone: Guildford 62034)

She is married, with two nearly grown sons. They live in a beautiful spot, high above Guildford, which is an old and most interesting town. We came in from the South-of-London direction, and had to drive straight through the town to get to their place. They were very hospitable - kept us for lunch, and the younger son (Guy) went with us to show us where the station was (whence I embarked for London).

She has stopped desmid work entirely, I think, but is doing something with flagellates, in the culture line. She has some sort of teaching

job in the local Academy, but seems to have no space or opportunity to do algal research there, but had her algae in jam-jars among her potted plants at home. I know too little about flagellates to be very intelligent about it, and would consider my visit there the least profitable of all scientifically - but very pleasant. Mr. Montford is a geologist (I think)

I would earnestly recommend that you see Prutsch, in Cambridge. He is working on desmids - grouping of species with genera, etc, has an iconograph, etc. He is very approachable. I did not make an appointment, and caught him when he was very busy, so I did not stay long, but I think that I missed a lot. Teeling thinks his ideas are old-fashioned, but it would be fun to hear them, for comparison with Teelings'.

Yes. I would enjoy seeing some real tropical desmids, particularly since I am now steeped in nearly-arctic ones.

This morning I leave for Michigan. When I come back it will be spring. At the present we still have patches of ^{snow} ~~ground~~, frozen ground and sub-freezing temperatures at night. - good sugaring weather, and bulbs are pushing through

Excuse the scrawl.

Harriet Crossland

DARTMOUTH COLLEGE
HANOVER · NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

March 11

Dear Mr. Scott,

Thanks for the fine letter, and the loan of the algae slides, and the gift of the beautiful flower pictures! I am sending herewith my whole lot of slides from my trip last summer. (I am not returning yours at this time because I have not had time to enjoy them properly, and show them off to my friend, but I will send them back soon.) I am sending my pictures at once because I do not want to rush you but I would like to have them back during the first weeks in April. During our spring vacation I am using up the last of my grant money on a trip to Michigan, to check my algae with Prescott's iconograph. I would rather like to have my pictures available there, so perhaps you will be willing to mail them directly to Jerry Prescott, to arrive some time before or during the first week of April.

I must give the customary apology for the pictures: I never took color pictures before this trip, and never saw any of my results until I got home. I'm not picture-minded, and took them only in spurts (alternating color- and black-and-white in my camera). And it was always too early or too late, or from a moving vehicle. My results are better than I expected, but still not very good.

Dr Grönblad showed me that ceremonial picture
- proudly and sheepishly. No, he is not at all "portly
and dignified" - he is chunky and "easy" (don't quote
me!). He is jolly, and kindly, and friendly,
with a fine sense of humor. I never at all had
the feeling that he - or I - was a foreigner.

I don't believe that there is another small-
town - dentist like him in the world! He
is widely read in four languages, knows
music and flowers, and is interested in
everything. And he has the most phenomenal
alphabetical memory! He looked over my drawings
of unidentified algae, and could very often say

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"Borge figured a form like that from Siberia"
and produce it from his separate collection.
(He calls Borge "Borrey" if you know Swedish
you'd know that but it had me baffled
for a little while).

He showed me that "Kosserkaya Desmid
of Russia" you spoke of, and bought vol 1 for
me. - very cheap compared to Ravenhorst! I had not
thought of asking our Library to buy it, but I
will.

His microscope set-up will make you
shudder. He has an old-fashioned monoc. scope
with a small camera lucida and one lamp. It
consoled me, who also has poor equipment - but I
have a homemade version of your disattached camera
lucida, & 2 lamps. And I know that you have
the best.

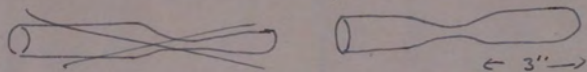
As to sending things to Kallis: He acknowledged this arrival but made no further comment and I have had a feeling that they arrived broken, or that he could not find the specimens. I sent them as he told me to.

- ① I did not isolate the *Micrasteris* - just sent material that contained some specimens
- ② I used the pond water in which I collected it
- ③ I used a non-pyrex test tube, about 5" long and $\frac{1}{2}$ " inside diameter.
- ④ I sent it in a mailing ~~test~~ tube.

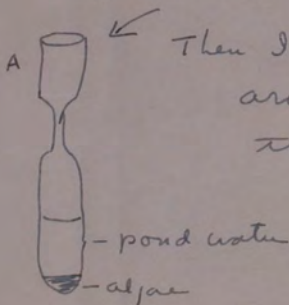
(When I sent to Teeling broke. he said I had over heated the glass. He doesn't like them that way, but Kallis does.)

Here is the way I did it.

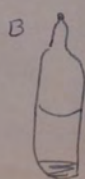
I took a dry tube and pulled out a neck (over an ordinary bunsen flame



When it was cool I dribbled the algae in. (A)



Then I wrapped a cold wet towel around the lower half, reheated the neck, & pulled it again (B)



It sealed very easily without heating the algae or water at all.

Next time I make up a batch of picture frames (which I must do quite often because my mother is an artist) I shall frame some or all of those flower pictures to hang on the wall of my lab. I already have some Audubon birds, and the flowers will be a wonderful addition. I do thank you!

Please excuse the poor handwriting. I can type but I'd always rather write letters.

Best wishes

Hannah Crossdale

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Mch 22 1954

Dear Miss Crossdale,

Thanks very much for the loan of your colored slides. My wife and I had a "showing" last night, and enjoyed them greatly. They give an excellent idea of the countryside over there, and I was especially glad to see the pictures of some of the people whom you met, particularly Skuja and Kallio, whom I have not seen before. Another surprising one was that of Nellie Carter. I have not seen her name mentioned in the literature for many years; the last paper of hers that I know of was published in 1925, and somehow I got the impression that she must have died. Is she now doing any work on desmids? If she is still interested in algae, I might call on her, because Guildford is not too far from where I am going, Paignton, near Torquay in Devonshire. Can you give me her street address, and is it Miss or Mrs.? I have sent the slides to Prescott as you requested.

Your color photos are quite good, for a first attempt. Many of them are excellent, like the Changing of the Guard at Buckingham Palace. Others are either under- or overexposed, and strange to say the overexposed ones are weak and washed-out looking, just the reverse of black and white photos. Like everything else, photography is a matter of practice and a considerable percentage of failures is to be expected at first. I don't do enough of it to keep in practice, and in photomicrography I always make 3 or 4 exposures of varying times on each subject, to make sure that one of them will be correct.

The description and sketches of your methods of sending algal material to Kallio are very clear, and I shall follow them, though I cannot see any great advantage in sealing the tubes for a preliminary sending of the mixed natural material, which will naturally contain bacteria, molds and fungi, though I admit it is probably better for his cultured desmids. I bought some culture test tubes the other day, both the usual kind, and also some that I found with screw caps. The latter ought to be just as good, and easier to use, though they are more costly.

Tomorrow I am going *Micrasterias* hunting for Kallio. To get them I must go around Lake Pontchartrain to the northern side, because the waters in the immediate vicinity of New Orleans are not favorable for desmids and only the common or garden varieties are to be found. But in St. Tammany Parish, on the other side of the lake, the soil is sandy and acid, and there are many handsome and rare *Micrasterias* to be captured, like *M. foliacea*, *arcuata* var. *gracilis*, *triangularis*, *denticulata* var. *Taylorii*, *radiata* var. *dichotoma*, etc., etc. I can get many more species in Florida, but it will not be easy to bring 'em back alive from there, because it is a 3-day trip by car to southern Florida, and most of the collections will not keep in good condition for that length of time in our hot climate.

Would you like to see some real tropical desmids, from Brazil, Australia and the East Indies? I would be glad to send you some the next time I make up a batch of samples. You have seen my drawings of some of the Australians, but some of those from Brazil, Java and Borneo are even more strange.

With my best wishes,

Sincerely,

P.S. Enclosed are a couple of slides that I found in the projector yesterday, of some diatoms from Jewel, Md. The beautiful coloring is caused by diffraction of light through the tiny and closely spaced holes in the shell.

Feb 24

Dear Mr Scott,

Thanks for the nice letter. I do congratulate you on Scottia mira! and thanks for sending me a photo. I don't wonder that you did not recognize it as a desmid in your Florida material, when it was partially obscured; in front & side view it is very animal-like with its appendages all headed one way, and with one-sided serrations. I've known about it since November, when Prescott told me, at Woods Hole, and drew picture of it; then Grönbald told me about it, and finally sent me the Latin diagnosis to check. Its discovery certainly removes you from the amateur class (though I have considered you removed from that for a long time) you must have looked at an awful lot of desmids by now!

It is fun to be asked to give you tips on your proposed visits. As a start, I am sending you the photographs that I took while I was in Finland. Would you like to borrow my colored ones also? (I alternated color & black and-white in my cameras) they are of standard small size (c. 2"). They include one of Dr Teeling.

The only Finnish phrase book (or grammar) that I know of is "Finnish, Self-Taught" (phonetic)
Thermin's Septem
E. Marlborough & Co.
51 & 52 Old Bailey London E.C. 4

We have this in our College Library but I could not find it - or anything, in bookstores in Boston or Charing Cross in London. I was so sure that I could find something that I did not 'swipe' the library book for the summer - and regretted it bitterly.

I found a Swedish phrase-book very useful. Of course most of the people you'll meet will know English, or German, but while I was travelling around Sweden alone, using cheap hotels & restaurants, I had to try to use Swedish. And I didn't know anything at all to start with - and I'm slow at language.

Dr Grönbled and Dr Teeling can both 'put you up' on a sort of couch-in-the-living-room arrangement, and they'll want to, but I found it very satisfactory to live at a hotel and eat meals at their houses.

Uppsala has plenty of hotels, and a good one. Grönbled engaged my room for me - and he'll probably get the same one for you. It was very pleasant: flooded with sun in the morning. Every where, of course, the plumbing is primitive according to our standards, but what they have is adequate, if funny at times. Dr G's house is most attractive: comfortably cluttered with books, and flowers, music and algae - but no plumbing and no central heating. Dr Teeling lives in an apartment, - much more modern.

Both men are delightful: kind, hospitable, stimulating - I enjoyed every minute of my

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DEPARTMENT OF ZOOLOGY

visit to both of them. Dr G. has a jolly, buxom housekeeper, Aili, Dr Teelin, has a charming wife - I really love her! - and two nice little grandsons - whom I barely saw. They are very quiet, and kept apart, like English children. There is a housekeeper there, too, because Mrs Teelin teaches school.

In both households I felt immediately "at home", and enjoyed myself. Probably I pulled boxes which I still never know about, so I really have no 'tips' to give.

You may find it convenient to go the way I did: by plane directly from London to Helsingfors - a beautiful and easy trip, a bus takes you into the city from the airport, and then I took a taxi to a hotel ^{where} ~~that~~ ^{which} ~~grubbed~~ had engaged ^{a room} for me.

Next morning I went out to Karis by bus - about a 2-hour ride. The hotel porter put me on the wrong bus, but I figured it out in

time, and an English-speaking passer-by (someone always turns up in a crisis) got me on the right one. I found it safer to have my destination written on a piece of paper I could show people - "Karis-Karyaa".

When I left Grötblad I went by train (2 hrs.) to Åbo - Turku, to see Kallio (who has written "a very interesting cytological-theoretical appendix" (quote R.G.) to the description of Scottia) and from there by boat to Stockholm ^{overnight} - a beautiful trip (R.G. arranged all that for me.)

Digitized by Herbarium Institute for Botanical Documentation
 In Åbo I had good luck buying algae reprints at the Scientific Bookstore ^{Järsson} Björnson - or some such name - easy to find. From there it is an easy trip by train to ~~Låncho~~ Linköping (It is safer to have that written on a piece of paper - they sold me a ticket to Enköpung - there are lots of --köpings.)

I don't know how you intend to return to England, but I recommend the Oslo-Bergen railroad trip - all day, and very scenic - you see the lakes where Ström collected. (I sailed from Bergen to Newcastle to join my mother in Scotland - then we drove down through England.)

But maybe you'll go south, to Krieger. Let me know if you want to see my colored slides.

Sincerely
 Harold C.

Mch 8 1953

Dear Miss Croasdale,

My wife and I have greatly enjoyed reading your long, chatty, and informative letter, and looking at your excellent photos, which I am returning herewith. Your pictures of Grönblad show him in such a different aspect that I should not have recognized him if you had not labelled them. The only other photo of him that I have seen shows him in a graduation procession at the University of Helsingfors, on the occasion of his receiving the honorary degree of Dr. Phil. a couple of years ago. Then he was wearing evening clothes (tails), a white tie, top hat, a wartime decoration, and a sword!, and gave me the impression of being a rather portly and very dignified college professor, not at all like the informal pictures that you took.

Of course I knew that Karis was a small place, but I had not visualized it as being quite so countrified as you depict. It is just as well that I had not contemplated taking my wife there, for she is apt to be rather critical and expects bathroom arrangements, even in Central America, to be equal to those in the good old USA. (They should have been at the prices the hotels charged!). For a man such things do not matter much, and I have ^{had} experience in the army, where you learn to put up with lots of funny things.

Digitized by Himmler Institute for Biological Documentation

Both Teiling and Grönblad offered to put me up in their homes, but I expect to stay at a hotel as you did, and probably have breakfast at the hotel, taking only lunch and dinner with my hosts. I am sure this will be more satisfactory on both sides. Even though I have not yet met either of these men, I am quite ready to agree with you that they are charming. Teiling, especially, writes the most delightfully informal, chatty letters. Just half-an-hour ago, while writing this letter, another arrived from him, acknowledging the South Australian reprint, and gently reproving me for misidentifications of St. gracile and fa. minimum, which he says are St. planctonicum and St. pingue respectively. However, this slap on the wrist should be administered to Prescott, who was responsible for these determinations. I did not agree with them, though I could not tell exactly where they should be assigned in this confusing group, and I remember writing to Prescott that "Teiling will not like this", and sure enough he doesn't.

Yes, I should like very much to have the loan of your colored pictures, and I promise to take good care of them. Have you ever tried your hand at photomicrographs of desmids on color film? Its not harder than black-and-white after you have wasted a few frames in finding the correct exposure. Of course, it is only a few of the flatter species that are suitable, principally Microasterias and Eunastrum, because of the extremely small depth of focus of microscope lenses. I'm enclosing a few of my first attempts, which you may return with your own slides.

I'am glad that you met Kallio, who has done some remarkable experimental work in culturing desmids. His feat of establishing a permanent clone of tri-radiate M. Thomasiana is a wonderful combination of luck and skill, but I am ~~was~~ astonished at the delicacy of the manipulations involved in selecting an individual cell at a certain stage of development, placing it in a given position, centrifuging it to displace the nucleus, then recovering it and placing it in culture again. That seems almost incredible to me; it is quite a struggle for me to capture a single desmid and place it on a slide for examination under high power.

Just last week I received from Kallio four sealed test-tubes containing living specimens of the 3-radiate form, and also haploid and diploid specimens of the biradiate var. notata. Two of the tubes were broken in transit, because he had used a weak cardboard box, but fortunately they were duplicates of the others. He tells me that you have sent him some samples, and I wish you would let me know your procedure. Did you send him selected specimens of Micrasterias, or the mixture of algae as collected? Did you use an artificial culture solution, or the natural water from the habitat? What size test-tubes, 4x1/2", 5x5/8", or 6x3/4", and did you fuse the end, or use paraffined corks? He wants me to send him some living Micrasterias from this territory, and I shall try my hand at it a little later. He is anxious to get living examples of "Scottia mira", but at the present it seems hopeless, because my Brazilian friend has left the Amazon region and is now located in southeastern Brazil, at Belo Horizonte.

Also last week I received from an unknown one of my several correspondents in Czechoslovakia a valuable new book, entitled

ФЛОРА СПОРОВЫХ РАСТЕНИЙ СССР

In case your Russian is rusty, I hasten to add that this translates into Latin as Flora Plantarum Cryptogamarum URSS. The only reason I know this is that they have thoughtfully provided two title pages, one in Russian and the other in Latin. It is Part I of Vol. III, Conjugatae, and this first part covers Mesotaeniales and Gonatozygales. Evidently it is the first of a series that will attempt to include all the Conjugatae of the USSR. Quite an ambitious project, and one that seems to me to be premature by one or two centuries, for it is obvious that only a minute fraction of this enormous territory has been explored for algae. The author is G.G. Kossinskaja, and the book seems to be patterned more or less after Krieger's monograph; in fact many of the illustrations are copied from K. and other writers. The only languages in the book besides Russian are the plant-names and the references to non-Russian literature. Nevertheless it is valuable; the illustrations are good, and there are a number of species and varieties that I have not seen described elsewhere, because I have almost no literature on Russian deserts. You should ask your library to try to get it from Biblioteka Akademii Nauk SSSR, Bargevaia Linia 1, Leningrad 164, USSR.

Sincerely,

I am sending you some beautiful paintings and photos of wild flowers from West Australia, for which I have no further use after having admired them several times. They are so unusual that I want to pass them on to someone who can utilize them.

Feb 20 1953

Dear Miss Croasdale,

It was nice to get your letter of the 15th, with your complimentary remarks on the South Australian desmid paper. This was re-set in type and reprinted with larger plates, because as originally published the plates had been reduced to such a small size that they appeared ludicrous. Also the paper had never been proof-read, and there were literally hundreds of misspellings and errors in punctuation. I had quite a fuss with the editor about it, and eventually had to pay for the reprinting.

Yes, my wife and I expect to go to Europe this summer, with several things in mind. Perhaps I shall attend the Botanical Congress in Paris, provided that the National Science Foundation comes across with a grant that I have applied for, but this looks rather doubtful at the moment. Anyway we shall go to England to see my sisters in Devonshire, and then I intend to go alone to Finland and stay in Karis for a couple of weeks, to discuss the American and Brazilian collections that Grönblad and I are collaborating on. Then I shall go to Sweden to see Teiling, with whom I have been corresponding for several years. Possibly also I shall visit Krieger in Berlin, if conditions are propitious when I get over there.

Your suggestion about getting a Finnish phrase-book is a good one, and I wonder if you know the title and publisher of any. I can read French and German fairly well, and have a smattering of some other European languages, but nothing whatever of any of the Slavic tongues. Finnish seems especially barbaric to me; many of the words seem unpronounceable, and the only ones that are at all recognizable are a few scientific terms of Latin or Greek origin that have similar forms in many languages.

Grönblad suggested that I might stay with him, or alternatively that I could stay at a hotel and take all meals at his house, which apparently is what you did, and I think I should prefer it. If you could give me any tips about my visit with him and Teiling, I should appreciate them very much.

I have just sent to Prescott a batch of 72 collections from Indonesia and Australia. The former will be the first lot to be worked up, and of course I shall ask you to do the Latin diagnoses, possibly late this year, IF Prescott can sandwich them in between his own stuff from Alaska, Ecuador, and a new lot that somebody has sent him from Fiji.

My latest and biggest news is that I have discovered a new GENUS of desmids in one of the collections sent to me from Brazil; enclosed are a couple of photos. In addition to the elaborate branching, the unique feature is that the two semicells are different, something quite unknown in the Desmidiaceae hitherto. The "upper" semicell has a crown of 8 (sometimes 9) apical lobules or teeth, while the apex of the "lower" semicell is quite smooth. There are 6 processes in the upper whorl and 10 in the lower whorl, on each semicell, and the processes of the "lower" semicell are curved in the wrong direction. Grönblad has written it up, and will publish it this year (I hope) in Botaniska Notiser. Isn't it an astounding piece of luck for an amateur like me to make such a remarkable find? But there's an even more surprising coincidence. I am convinced that a few years ago I saw

a single example of the same plant in one of my Florida collections. Unfortunately I did not recognize it as a desmid because it was badly obscured by adherent mucus and debris, and it was quite impossible to make a drawing, so I made no record of it and now I have not the faintest idea of what part of Florida it came from. But it will turn up again one of these days.

With my best regards,

Sincerely yours,

2-15-54

Dear Mr Scott

Thank you for the separate
on So. Australian desmids. It is
beautiful as all of yours are!
Jerry told me of the difficulty you
had about the plates. That was a raw
deal!

I like the present format very much,
and the way you give references that is
just what I decided to do, if permitted
on my Alaskan algae. I still don't know
where I'll get it published

Rolf Grönblad tells me that you
are going to Karis next summer. I am
so glad. It will be fine for both of
you. I wish I were going again, too.

Karis doesn't have much to offer
but Dr G. has everything! I
hope you enjoy the Saunas
as much as I did. If I were
going, again I'd get hold of a
Finnish phrase book (they are
hard to come by), so that I
could communicate with his
Finnish housekeeper, Aili, she
is very nice and jolly but knows
only Finnish. I never got beyond
"Good morning", "Thank you" and
"I like it!". which is pretty slim
conversation.

You'll eat all your meals there,
and the food is wonderful!

Best wishes

Stanford Crossdale

Mch 12 1953

Dr. W. H. Camp,
Academy of Natural Sciences,
Philadelphia, Pa.

Dear Dr. Camp,

Since you ask to be notified of errors in the Taxonomic Index I call your attention to the following in the Jan-Feb 1953 issue:

Under ALGAE the 7th item should read:

Prescott, Gerald W., and Scott, Arthur M. The algal flora of southeastern United States V. Additions to our knowledge of the desmid genus *Mictasterias* 2. *Trans. Am. Micr. Soc.* 71:229-252. J1 (Au) 1952.

Here are a couple more citations that you might miss:

Prescott, Gerald W., and Scott, Arthur M. Some South Australian desmids. *Trans. Roy. Soc. So. Australia.* 75:1952, 55-69. 5 Pls. (Jan 1953).

Scott, Arthur M., and Prescott, Gerald W. The algal flora of southeastern United States VI. Additions to our knowledge of the desmid genus *Euastrum* 2. *Hydrobiologia* IV:4, 377-398. 3 Pls. Sept (Nov?) 1952.

How come the ALGAE are so poorly represented in the Index? Must be because of insufficient covering. In the current issue there are eight items, of which five are from *Lillea*. Surely there must have been more than three papers published in American journals, during the period, in the very large field of algae.

Sincerely yours,

Jan 18 1953

C. A. R. E.
New York.

Gentlemen,

For the last ten years or so I have been sending CARE food parcels to my relatives in England, and these have always reached their destinations safely and promptly. My sisters write that the parcels are extremely valuable and welcome additions to the very limited and monotonous food supplies that they are able to purchase.

Since the war I have also been sending CARE parcels to an acquaintance who lives in a place named Hohen Neuendorf bei Berlin, Germany. This seems to be a suburb of Berlin and is located in the Soviet Zone. Here's an extract from a letter received from him a couple of days ago:

"Herzlichen Dank für die freundliche Uebersendung des Care-Paketes. Hier in der Sowjet-Zone ist alles, was das Paket enthält, auch für Geld nicht zu haben. Es wird immer schwieriger, den Inhalt der Sendung herzubekommen, da alles Wertvolle an der Grenze beschlagnahmt wird. Man muss alles Mögliche tun, was sonst nur Schmuggler unternehmen, um Waren über die Grenze zu bekommen, denn ich muss alles einzeln aus West-Berlin hertschaffen. Desto besser schmeckt es naphher".

Most of the packages that I have ordered for this man have been the Standard Food Parcels at \$10.00 each, because I think they contain a better selection than the parcels that are designated for the Eastern Zone of Germany. According to your literature the Standard parcels are available for Western Germany and all of Berlin, but seemingly the parcels are not delivered in the Soviet sector of Berlin, so that a consignee living in that sector must cross the border into West Berlin in order to claim his parcel; then must open it and arrange for transporting the individual items across the border. Judging from newspaper reports this must be rather a risky business and I would like to find a way of getting food parcels to my friend without subjecting him to this danger.

Please understand that I am not reproaching you with these difficulties, which I am aware are quite beyond your control. But doubtless you have exact information on the situation in Berlin and can give me some advice. If I order the parcels which are designated for the Eastern Zone of Germany, will they be delivered intact, either to my friend's address in Hohen Neuendorf, or else to some central distributing point in the Soviet sector, which would be easier and less risky for him to visit?

Thanking you in advance for your reply,

Very truly yours,

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C.

Mr. Arthur M. Scott,
2824 Dante Street,
New Orleans 18, Louisiana.

June 24, 1952.

Dear Mr. Scott:-

I have your two postcards and have been a little slow in replying because of many things to do. Thanks for the catalogue of sheet metal working machinery which I am perusing from time to time planning ideas for what I want to make. I was talking with a musical instrument repairman to whom we took my boy's French horn for some work, and he says "Popular Mechanics" carries an ad of a sheet metal "brake" for four dollars and something, a small one. Very reasonable, but I haven't yet had time to look for it.

The enclosed copy of my letter to Dr. Rufus Thompson will be self explanatory. Of course it is possible Dr. Thompson is away somewhere for some summer work in which case we may not hear immediately.

Too bad Dr. Womersley could not have gotten around more in this country while he was over here so far from home, and I wish he could. I know he has had some contact with botanists here and should think he would have wished to see as many such centers as possible while here, but no doubt there were good reasons why he couldn't.

I have to report a little more experience with your Chlorox-Hydrogen peroxide method which may be of interest to you, as it all adds up. I received some small fragments of seaweed from a lady in California, with attached diatoms which I wished to remove. There were not many and it was desirable to get them off and save all I could. Short treatment with your method seemed to do the work simply and very satisfactorily, cleaning them at the same time.

But more strikingly and somewhat along a different line than we had previously considered — recently a friend brought me some diatomaceous earth from a deposit in Richmond, Virginia. I broke it up as usual in reasonably small lumps by gentle picking and splitting, put in enough water to cover in a beaker, and added a small quantity of Chlorox. I might say my reason to start with was that there were impurities and some bit of organic matter in the material which I thought your treatment would bleach. Then it occurred to me the violent activity might help to break up the material further without injury to the diatoms, and some materials like this are not easy to disintegrate. The idea is an old and conventional method, but not with the above chemicals. I let the material stand a few minutes with the Chlorox in, with the idea that it would diffuse with the water into the interior of the lumps of earth (the lumps being all less than the size of a pea). When I thought they might be well infiltrated I added the Hydrogen-peroxide with the usual reaction. After it had subsided the material seemed to be very well separated. My assumption is that the action has two effects, first to bleach and oxidize the binding material that holds the lumps together thus allowing separation of the particles, and secondly to create small explosions and pressures within the lump which force the particles to separate. To me this seems logical and if true a very practical advantage of your treatment, but it requires further testing and experiment to prove the validity of these conclusions. Someday when we have more of these experiences you should put all these things together and publish this method. It has many uses and advantages, and I for one feel you have benefited me no end by suggesting it.

I am advising it to a few of my friends for field work, concentration, and for preservation of field material in place of formalin, because of the mild reaction and properties, and because of the ease of getting it. But it must be used with discretion, for there are some kinds of material where it should not be used as in delicate plankton diatom materials with forms of delicate complicated shells, where it might disrupt the shells themselves. I have recently had such a material on which I hope to test it, but have not as yet because of the intense heat here, which is one reason for the delay of this letter. Humidity has also been high, and I consequently don't do much technique work in the summer. Your method is a short cut and solution to many troublesome little problems of the past.

I am unhappily still holding my glass ring manuscript because of the discouragement of waiting two years for Trans. Amer. Mic. Soc. to publish it, and not knowing where else to turn. It is too bad printing is so costly and there are so few outlets. The old microscopic journals used to publish gadgets, tricks, and simple hints and techniques awaited eagerly by all workers, but now the journals scorn anything but profound technical papers. I know several persons with likely manuscripts in the same position.

Best regards,

Sincerely,

Paul S. Conger

Paul S. Conger

June 24, 1952.

Dr. Rufus Thompson,
Department of Botany,
University of Kansas,
Lawrence, Kansas.

Dear Rufus:-

In recent correspondence with Mr. Arthur M. Scott of 2824 Dante Street, New Orleans 18, Louisiana, concerning varied matters I happened to mention to him the low-power Camerallucida apparatus you constructed for yourself several years ago while at Solomons, Md. for making drawings from which 2 to 4 times reductions could be made for publication.

Mr. Scott expressed quite an interest in this, saying he could use such an apparatus at times, and wished I would give him details. Since my memory of it is somewhat vague except on general principle, I wonder if you would mind writing a brief description of it for him with perhaps rough sketch. You can send it to him directly at the above address or if you wish to me and I will transmit it to him. If you send it directly to him, may I beg you to also make a copy for me, as I have always thought to build myself one too, perhaps not the elegantly machined job you did but at least a functional one.

In fact, as we can all appreciate, your device would be useful to many in our type of work -- why not write it up sometime and have it published.

In case you are not acquainted with him, you may recall Mr. Scott as a specialist on Desmids, co-author with Prescott on a number of papers, and an active and beneficent member of the Phycological Society of America.

Mr. Scott and I will be very grateful to you for this, and I hope it will not burden you unduly.

With my best regards,

Sincerely,

Paul S. Conger

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C.

Mr. Arthur M. Scott,
2324 Dante Street,
New Orleans 18, Louisiana.

August 8, 1952.

Dear Mr. Scott:-

I am somewhat chagrined to write you that I have heard nothing further from Dr. Rufus Thompson and am unable to report to you on his drawing apparatus. I am not familiar with his correspondence habits and I do not correspond with him but would think from knowing him he'd be very dependable. Perhaps he did not receive my letter, was away in the field, busy with summer teaching, in process of writing it up, or something of the sort. Unless you are quite anxious I am reluctant to write him again quite yet but would rather give him more time to reply. I will write again in early Fall when above reasons should have been invalidated and I can do so without offense.

My own memory is almost too vague to describe the apparatus, as I saw it only in construction several years ago when we were both at the Chesapeake Biological Lab. one summer. As I do remember it it was simply and essentially a low-power camera lucida, with an upright carrying 2 to 3 inch diameter double-convex reading glass lens in place of the microscope optical system (good lenses of other powers could be used also as desired for magnification). And above this at proper focal distance was mounted the variable eyepiece of a commercial camera lucida, then out on an extended adjustable arm the tilting mirror of the camera lucida. Under this apparatus a leaf stem of grass, or small rough sketch could be placed and drawn to two to four times enlargement. Dimensions, details, and use of the apparatus was worked out nicely and that is what I wish to obtain for you from Dr. Thompson in due time.

Some more notes on use of Chlorox: I gained the impression after treating some stuff containing very light, delicate diatoms with Chlorox and H_2O_2 that many of the light forms did not settle out readily on subsequent washing and the supernatant fluid remained milky with them. It occurred to me that perhaps following the frothing treatment many minute bubbles remained in these diatoms to buoy them up, so I followed up with some hydrochloric acid and boiled the material to drive out any such air inclusions. I do not know if this is a right explanation, but since I do not use a centrifuge it was important to me and a thing I had not thought of before. I have trouble this way and a centrifuge is probably the solution. If true this is an adverse effect of the Chlorox treatment alone and it should be followed with boiling + acidification.

A friend to whom I recommended the Chlorox method informed me lately that in some material that clumped in sizable clumps after cleaning by the usual methods he was able to disperse these clumps readily by adding a little Chlorox and swears by it as a cheap and handy reagent.

We both use it for preservation of diatom crude material, but still have no idea what is the minimum percentage of Chlorox needed to preserve any sample against fermentation, and we still need to run some experiments on this. Do you have any experience or ideas regarding it? I hope it is small for then Chlorox will be an ideal preservative for our type of material where what is desired is the inert shells of the diatoms and there is no concern about bleaching or destruction of other

organic substance. If you have used this for any preservation I shall be glad to know your thoughts.

We have had a most uncomfortably hot summer in my experience, with many days in the upper nineties, and it has slowed down my work tremendously and not helped some of my materials I fear. But I hope to be away the rest of the month with my family and personally miss the discomfort. There is however a change toward rain now.

I wonder what the long steel strike and resultant shortages have done to you and your business. It must be a considerable trial and I hope has not affected you too adversely.

With kind regards and good wishes,

Sincerely yours,

Paul S. Conger

Paul S. Conger

Aug 13 1952

Dear Mr. Conger,

This is an answer to your two recent letters; the reason I have not written sooner is that I have been very busy for several weeks on the MS of a long paper on FW algae from North Australia. The rough draft of this is now finished and I sent it off a few days ago to friend Prescott, who is now at Flathead Lake, Montana, for the summer. He will leave there in a few days, and in 24 hours will be in Point Barrow, Alaska! There he will remain until near Christmas, investigating the FW algae of the region on a Navy assignment.

I have not heard from Dr. Rufus Thompson, but that is easily explainable on the assumption that he may be away for the summer, as so many college professors make a practice of doing, combining a vacation with the opportunity of realizing some money by teaching a summer course, and getting the opportunity of collecting in new places. From your description I am sure that I could rig up my camera lucida to make low power enlargements. It is not often that I need to do this, but occasionally I wish to copy illustrations from other works and enlarge them to the same scale as my own drawings, which would usually be about 3x or 4x. Thompson's device would be very good for this, and simpler than the way I have done it in the past, by making a pencil tracing on thin paper and putting it in a photographic enlarger, projecting it on a wall and adjusting the set-up to give the required enlargement, and then tracing the image. But I have frequently needed slight enlargements, or reductions, say 10% or 20%, of my own original drawings, to make them fit into the available space on a plate with other figures. This I have accomplished by using a cheap, toy pantograph costing \$2.00. This instrument has wooden arms, with holes at various intervals into which pins can be inserted, and gives magnifications or reductions from 1:1 to 10:1. I have drilled additional holes to give me fractional powers of 1.2:1 and 1.1:1. There is so much friction with the wooden arms that the resulting drawing is jerky, but I smooth it up by eye after the outline is completed.

I am much interested in your experiments with Chlorox and peroxide. Your method of disintegrating solid diatom deposits with these reagents ought to be much simpler and gentler than the old way of using sodium allopate or photographer's "hypo", and would not require so much washing to get rid of the unwanted salts. The phenomenon of delicate diatoms remaining in suspension because of included gas bubbles after the frothing reaction probably was annoying in the case you mention, but it might turn out to be a convenient way of separating such small forms from larger ones and from sand particles. Your method of boiling the suspension ought to remove the bubbles pretty quickly, by expelling the dissolved gases in the liquid, which on cooling would redissolve the bubbles held by the diatom valves. I don't see what effect the acidification would have.

There is another possibly explanation that occurs to me for the diatoms remaining in suspension. Diatom shells, as of course you know, are not pure silica, but compounds (?) or impregnations of organic materials by the silica. Now, if the organic matter were not perfectly dissolved and removed by the chemical action, it might be put into a colloidal condition similar to swollen gelatin, which would reduce the rate of settling of the suspended particles. Perhaps the addition of a small quantity of one of the new detergents, such as "Alconox" or "Dreft", might accelerate the settling, by greatly reducing the surface tension of the liquid.

I have not tried to use Chlorox as a preservative, but I should imagine that the recommendation on the bottle label for a germicide, namely 1 part Chlorox to 10 parts of water, would be suitable. They say that this gives a solution of

sodium hypochlorite that is equal in disinfecting value to Dakin's solution. It would be approximately an 8.5% solution of NaClO . The label gives many other recommendations of solution strengths for various purposes.

There are many interesting observations to be made in experimenting with Chlorox and HgCl_2 , and with KOH . One lot of material that I treated with the first two chemicals contained a lot of dinoflagellates, possibly Peridinium sp. After treatment nearly all of the shells had disintegrated into their dozen or so individual angular plates, which were otherwise undamaged, and apparently had been held together by some cementing substance. But I find this difficult of comprehension, because the little animal (or plant?) certainly does not fashion the plates one by one and then stick them together with glue along the edges.

The direct opposite of this was noted in another lot of stuff that I boiled in dilute KOH . A fragment of the sheath of a tube-building rotifer, Melicerta sp., was seen that was quite undamaged by the abusive treatment. Perhaps you may know that this rotifer actually does build up its sheath of individual spheroidal pellets, which are stuck together in a quincunxial or hexagonal arrangement to form a hollow slightly tapering tube in which the animal lives. I have seen a living specimen of this genus making the pellets, though I was unable to see by what mechanism they were placed and arranged in position. They are formed in a hollow on the animal's back, surrounded by cilia which by their beating create a miniature whirlpool. Into this whirlpool the animal apparently exudes a mucous substance which is formed by the rotating water into a spherical or spheroidal pellet containing specks of detritus that are sucked into the whirlpool. I don't suppose any adhesive is used between the pellets; probably the mucous secretion is sufficiently sticky to make them adhere to one another. But the fact of such a delicate structure being resistant to boiling in caustic potash, even though very dilute, is amazing!

I have a number of unrelated observations that I wish I could discuss with someone who was interested and could explain them. For instance, an amoeba containing hundreds of perfectly formed brown crystals, truncate bipyramids on square base. And a large soft-bodied rotifer that had swallowed 45 desmids, some of them the spiniest species that you could imagine. I counted them and identified most of them, as they were expelled from the animal's cloaca when it was dying. It would be something like a man swallowing 45 chestnut burrs each as large as a baseball, except that on the desmids the spines were proportionately much longer.

Did I tell you that Mr. Womersley went from Michigan to Canada, and thence to England where he now is? When he returns to Australia I shall not forget to write and ask him to get more of the material that you are interested in.

I suppose you noticed the announcement by the Am. Microsc. Soc. that they would publish articles on new methods and laboratory devices. Also that if an author is able to pay the entire cost of publishing a paper, he can get preferential treatment and have his paper published in the next issue instead of having to wait two years! But the editor did not say how much it would cost per page.

With kind regards from Mrs. Scott and myself,

Yours sincerely,



Dept. of Botany,
THE UNIVERSITY OF QUEENSLAND

BRISBANE.

4/6/52.

Dear Dr. Scott,

Thank you
very much indeed for the algal
reprints which you have sent. I
am very pleased to have them.

I have recently returned
to Qld. to lecture in Botany at
University of Qld. so should
now have more opportunities
to collect desmids for you.

Yours sincerely,
Alan B. Crabb

26 June
Hanover

Dear Mr Scott,

Enclosed is the letter, to date.

I'm leaving tomorrow on a rush collecting trip (flowers, tho') to the Gaspe' Peninsula, to be gone until July 7. I hope this won't hold up the other letter too much. If it had arrived today I would have taken it with me.

Thanks very much for your thoughtful two letters about my camera lucida arrangements. I never thought of the idea of raising my scope an inch - I'll try that. I considered the extra taped-on mirror and discarded it as additional clutter - also I suspect distortion at the extremities.

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I just wondered how you got such big pictures. My method of no attaining bilateral symmetry is to trace a final figure from my "smoothed-up" camera lucida one, turning the copied-from fig. upside down for the other half. I don't do this with algae, tho' (only in diagrams, etc). I haven't thought nature itself was that symmetrical.

I didn't mean to say I got the Acualaena ref. from the Clust. volume; I used the "Bluegreen Ravenhorst - ~~the~~ Geitler" ^{library's} My Microasterias vol. goes from plate 97-142. If the copy that you have for sale goes on from 142 I'll gladly buy it for 5⁰⁰ (from the way our library has them bound I'm not sure about the installments.)

Thanks again for your interest & help

Sincerely
Harold C.

DARTMOUTH COLLEGE
HANOVER · NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

Dear Mr Scott,

I think the Scenedesmus carinatus reference is as follows:

"S. carinatus (Lemm.) Chod. Monographies d'algues en culture pure, (1913) 23, 69." This is the way Chodat gives it in his paper "Scenedesmus" in the Zeitsch. f. Hydrolog. 3: 71-258. 1926.

When I asked for this paper I hoped I was getting the original description of S. carinatus - but I missed.

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gives the citation more completely:

"Chodat, R. Monographies d'algues en culture pure, in Matériaux pour la Flore cryptogamique de la Suisse, IV (1913) 13 à 84, fig. 1 à 78 Plaque I, II" (he also lists the species illustrated on the plate, but S. carinatus is not there)

I missed altogether on the Anabaena oscillarioides f. globosa Playfair. As far as I can guess it it might be in any one of about 6 vols of Proc. Linn. Soc. N. So. Wales - or possibly somewhere else. Would you like me to keep on trying? Have you any clues - or have you already solved it?

Best wishes

Harold Crossland

June 23 1952

Dear Miss Crossdale,

The letter I wrote you earlier today was done at the office, and I was interrupted several times. First our stenographer returned from lunch and ran me away from her desk. Then I started on another machine and the phone rang for me. I had to make a hurry-up trip to another office, and when I came back and resumed your letter, I forgot one item which might be of value to you.

When you "run off" your present mirror, it would be quite easy to attach a larger mirror temporarily. The new mirror should be about $3\frac{1}{2}$ " x $5\frac{1}{4}$ ", (L = 1.5 W), which you could have made by your local glazier. Tell him you want "single weight" picture glass, which is supposed to be flatter than window glass. This could be attached temporarily to the present mirror by smearing both of them with vaseline, or if this is objectionable, by a couple of thin but strong rubber bands. If the bands do not hold the larger mirror in contact with the smaller one, put a thin piece of wood or stiff cardboard on top of the small one, and place the rubber bands around all three pieces. Probably you would not be able to center the larger mirror exactly with the smaller one, because of the hub attachment to the arm. In that case it would be necessary to push the whole arrangement back from the edge of the table by $1/2$ " or so, to center it with the beam of light.

When I was in Washington last year, Paul Conger showed me a useful trick for drawing symmetrical objects like diatoms and desmids. With such specimens as *Euastrum oblongum*, *E. pinnatum*, or the undulate *Pleurotaenia*, such as *Pl. constrictum* or *Pl. burnsi*, it is frequently difficult to make the left and right sides of the drawing exactly symmetrical, as they should be. Here's the trick. After drawing the profile in light lines (pencil), finish the left-hand side of the drawing as exactly as possible and with a fairly heavy line. Establish a center line, and on the right-hand side mark off with a scale a few prominent points through which the right-hand profile ought to pass. Then a transparent piece of glass, the picture glass mentioned above, is supported exactly at right angles to the plane of the paper, and on the center line of the drawing. By looking down at an acute angle with the left-hand surface of the glass, you can see the left-hand profile of the drawing reflected in the glass, and apparently projected through the glass to the right-hand side. By moving the glass slightly, the reflection can be made to coincide with the marked-off points, and then the right-hand profile can be traced by following the line apparently projected through the glass. For supporting the glass I use a block of wood $1\frac{1}{2}$ " thick, with a groove about $3/32$ " wide by $1/2$ " deep cut exactly at right angles to the bottom edge, into which the glass fits tightly. I'll gladly send you such a block if you haven't the means of making one. My glass is $4\frac{1}{2}$ " x $8\frac{1}{2}$ ", about half the size of my drawing paper, but a wider glass, $5\frac{1}{2}$ " x $8\frac{1}{2}$ " or $6\frac{1}{2}$ " x $8\frac{1}{2}$ " would be useful occasionally with the very large *Microsterias*. If the glass should not fit tightly in the groove in the wood, fold a strip of paper over the edge of glass, and force it into place.

Conger has another cute trick for making shallow cells on microscope slides, but he is going to publish it, so I won't anticipate him.

Sincerely,

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

June 20, 1952

Dear Mr Scott,

The latex arrived safely. I will try to do it promptly. It looks as though I might go off on a 10-day collecting trip from June 27 to July 4. I'll try to finish it before I leave.

I've been struggling with your 'original description' request, and got some of them, which I am sending. I ran the *Quabana* and *Scenedesmus* down to pretty good possibilities, and have asked the library to borrow the books for me. So I may have an answer on them soon. I'm stuck on the *Printz*. In Engler & Prantl 9 (1927),^{2nd Ed., 3rd Vol., p 103} there is a *Dispora crucigeroides* Printz which I guess is the same plant but I can't get beyond that, and have drawn a blank on other Printz references. I'll keep trying.

I've adopted your remote camera-lucida' technique, with certain modifications necessary to my different equipment. I have only a 17x for highest ocular so I put my camera l. 10 1/2" away, with magnification less than yours, but a useful compromise. When I move the c.l. still further away I 'run off' my mirror with too many spectra - Do you have a mirror larger than the standard 2 1/2" x 4 1/2", or do you draw your big ~~z~~ babies in many

sections?

I still use my old straight, monocular 'scope - the one binoc available to me here seems less good.

I make my measurements directly from my drawing, having made myself a ruler from the eyepiece micrometer and a calibrated slide. I've always preferred that method but it has its drawbacks ^{when} applied to your technique because it requires a dependable stability of camera lucida, and I keep knocking mine out of exact position as I turn my light on or off. But I'll lick that problem eventually.

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On the whole I like your system very much. I get bigger drawings, and, having better light and more room, I am getting better ones too. Thanks very much for your careful description - and willingness to share your invention with me.

Do you not have Rabenhorst's *Kryptogamenflora* -- available? (That's what I got the *Analsena* reference from). If not I could lend you the *Closterium* volume I managed to buy a battered copy. Our library has the set, fortunately - as far as it goes - so I don't need my own *Closterium* one. Let me know.

Sincerely

Harold Crossland

July 22 1950

Dr. Hannah M. Crossdale,
Marine Biological Laboratory,
Woods Hole, Mass.

Dear Dr. Crossdale,

I am enclosing herewith a copy of descriptions written by Dr. Prescott for a paper on Desmids from South Australia, together with blueprints of my plates illustrating. Would you be kind enough to do the Latin translations of the diagnoses for the new species, varieties, and formae, which I have marked in red pencil?

Friend Prescott has let me in on something that both he and you have been keeping secret from me, namely that if it is sufficiently insisted upon, you will accept some remuneration for this work. This makes me feel less hesitant about sending the stuff to you, because I know that it must take a lot of time and effort. So please remember that I do insist, and that I am perfectly able and willing, and shall be glad to pay you whatever you may ask for the work. I have two other papers almost ready, waiting on replies from Prescott to some questions that I asked, and shall send them on to you when I get them rewritten.

When you return the South Australian paper I am going to add some introductory remarks, with a history of the collection, then rewrite it and submit for publication. I had thought of sending it to the editor of Acta Hydrobiologica, the new journal published in Holland, who Prescott says is looking for contributions and will publish them more promptly than American journals. I note that Dr. Wm. Randolph Taylor is a member of the editorial board, and if he is at Woods Hole would you please show him the descriptions and plates, and ask him for his recommendations. Perhaps he could put in a good word with the editor, Dr. W. Junk.

Are you going to the meeting in Columbus next September? If so, I hope to see you there, but it is not quite certain yet that I shall be able to get away.

With my best regards,

Yours sincerely,

June 23 1952

Dear Miss Croasdale,

Prescott sent the remainder of my desmid descriptions, and in his letter he asks me to delete *Crucigenia crucigenoides* Prints from his list; evidently something wrong with it, but he doesn't say what. So you don't need to bother any more with this one. As to the *Anabaena oscillaroides* f. *globosa* Playf., I cannot find it in any of Playfair's works, of which I think I have the complete set, though there are several other *Anabaenas*.

The only part of Rabenhorst's *Kryptogamenflora* that I possess is the five installments of Krieger's monograph on desmids. I have not studied any of the other freshwater algae, and know very little about them; consequently I have not tried to acquire any literature on them. I don't quite understand your statement that you found the *Anabaena* reference in the *Closterium* volume, because in my *Closterium* part of Krieger there is nothing else but desmids.

By the way, I have an extra copy, brand new, of the 5th installment of Krieger's monograph on desmids, dealing with *Micrasterias*, that I'll sell for \$5.00, the same as I paid for it. Krieger wrote me some time ago that he has finished his next installment, on *Cosmarium*, and hopes to get it to the printer this summer. Perhaps we shall see it next year.

The mirror on my camera lucida is about the same size as yours, and so far I have not found it too small, but the mirror is only about $6\frac{1}{2}$ " from the optical axis of the scope. I think your distance of $10\frac{1}{2}$ " is too great, so that the mirror subtends too small an angle. If it is practicable for you to raise your microscope 1", and place the mirror at $9\frac{1}{2}$ ", you would get the same magnification on the drawing, but the mirror would subtend an angle $12\frac{1}{2}\%$ greater, and would accommodate a larger specimen.

All my drawings are made in "one piece", not in sections. Sometimes with large *Micrasterias*, or long *Closteria* or *Pleurotaenia*, the image is too large for my paper. If it is only slightly too large I sometimes raise the paper by placing a 2" thick block of wood under it; otherwise I have to use a lower power eyepiece.

My measurements are made directly with the disc type of eyepiece micrometer, perhaps not quite so accurate as yours, but near enough for all practical purposes. The dimensions which some authors give, to 0.1 or even 0.01 micron, are pure illusory, and the decimals are merely the result of the arithmetical computations involved in the calibration of the eyepiece micrometer. The wavelength of white light is about half a micron, and anyone who thinks he can measure closer than that, even my friend Irene-Marie, is simply kidding himself.

Will send the rest of the desmid descriptions, with prints of the plates, in a week or so. Good hunting on your collecting trip.

Sincerely,

June 15 1952

Dear Dr. Crossdale,

I am enclosing Prescott's descriptions of 9 new species, varieties and forms of algae from North Australia, which are the only novelties in his list of 71 algae exclusive of Desmids. He has drawn illustrations for them, but has not yet sent them to me. He omitted to give references to the original descriptions of any of the algae. I have managed to dig up all of them except the seven listed on sheet #3, and would appreciate it very much if you would look them up and insert them. Prescott won't get time to do it now; he is up to his neck (or maybe his ears) in preparations for his departure, next Wednesday, for Montana, where he will remain until about the end of July, and then fly directly to Point Barrow in Alaska, without returning to Lansing.

Last week I phoned him, to make sure that he would send me all the remainder of the dope for this paper before he left, and he promised that he would. So I expect to get the rest of the desmids and my original drawings sometime next week, and after giving them a rough check I will send his descriptions to you, with prints of my plates.

In the meantime, if you can do the Latin translations for the nine novelties and return them to me without waiting for the desmids, it will enable me to write up the first part of the paper dealing with the Cyanophyta and Chlorophyta, exclusive of the Desmidiaceae which will form a separate section.

Sincerely yours,

DARTMOUTH COLLEGE
HANOVER · NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

June 4, 1952

Dear Mr Scott,

I'm not going off
anywhere, this summer. I must
work full-time on my last summer's
collections and can do that
here most efficiently and cheaply.

So send the latin here,
as soon as you can conveniently.

Sincerely

Harold Crossland

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C.

Mr. Arthur M. Scott,
2824 Dante Street,
New Orleans 18, Louisiana.

May 12, 1952.

Dear Mr. Scott:-

I enjoyed your long letter which is very helpful, and the catalogue of metal sheet bending machines has also come. Since I have previously had no contact or familiarity with such equipment, the latter proved very interesting to me. Do you wish this returned to you, or not? The brakes you recommend for smaller than 6 inch work would be quite useful to me at times, but I question the people who pass on my requests seeing any justification in my ordering such a piece of equipment. Best that I study the pictures and descriptions and apply some of the principles in devising some homemade equipment of my own. This I am doing with interest and benefit, thanks to your kind thought of its use to me.

Since our previous letters my manuscript on the making of small glass rings has returned from our editorial committee with approval to publish. I appreciate your suggestions and comments regarding places of publication, but I am discouraged in the matter and am holding my paper a short while till I can have time to consider best means. I had known the Amer. Soc. of Microscopists (rather Amer. Microscopical Soc.) had some backlog but thought they had caught up some in recent years and had no idea they are so far behind. It is indeed discouraging to wait as long as two years, yet there are so few places for this type of information and all are having printing problems these days. Micro-Notes is a fine little paper, very interesting, but correspondence with several friends indicates it is practically at a standstill for the time being. I don't think Science is quite the medium, or rather my simple method paper is the type for them; though I should like to see them diversify away from the predominantly biochemical trend of recent years. Since the war I have not known what is the status of getting things published in the English journals. What you say of the long backlog of the Amer. Micro. Soc. leaves me sort of at a loss just what to do. It seems, but for that, the best medium, although even there I agree with some others that there has been a dominant flavor of intestinal parasites in recent years. Would that we had one of the old time microscopical journals, or preferably several of them, to which Micro-Notes lately has come closest. I shall digest the matter a bit, and any further ideas you have will be welcome.

About using a fine file to finish the inside edges of the glass rings --- that I have done all along too, being careful not to injure the sharp edges of the brass template.

The other little device for copying symmetrical halves of organisms has several adaptations and I have long used it; am glad you find it helpful. It was published by someone in Science I think in the 1920's or early 30's. I probably can find the reference sometime, but do not know just where to go at the moment.

Another instrument that ought to be published and should be useful to you, as to me when I get around to making one, is that devised by a friend of mine and probably acquaintance of yours also, Dr. Rufus Thompson. It is a low power camera lucida, using a reading glass, which magnifies two to four times, for making drawings to be subsequently reduced to half or quarter for publication. There are many useful "gadgets" here and there if we only knew them. There should be more "gadget journals," or columns in some of our learned journals.

Your experiments with various media for removal of organic matter from samples are interesting, and it looks as though you might be getting some results helpful to your studies, but I am hesitant about using the hot alkalis for this in connection with diatoms, because of some danger of dissolving their shells, especially the small ones, a trouble that you probably do not need to be concerned about with the desmids.

I question that I will be able to do any more ~~with~~ the Stauroneis Fulmen until next Fall, as I have a lot of things on hand and the warm weather and humidity are setting in which make fine microscopic manipulation impractical. I hope Dr. Womersley will get more of that material sometime when he is back, so that there will be enough to clean it in bulk, then I can work so much more easily and much faster. This handling of individual cells is very slow and trying, but with the little quantity of that fine stuff I am reluctant to handle (clean) it by bulk methods which are bound to involve a certain percentage of loss. However with plenty of time I can eventually get out some nice specimens by the individual treatment. I wonder when Dr. Womersley is returning to Australia and if he will go through here on his way to New York and thence to Europe. If so perhaps I might get to see him, if it is at a time when I am not away myself.

To go back again to your cleaning methods --- I think the Chlorox-Peroxide one because of cheapness, availability, and reaction on certain materials will have some use for me, but otherwise I better not stray too far from conventional methods for my type material. I wonder that the hot alkali does not hurt your specimens, but if you control conditions apparently it is O.K. I should think because of their character it might be theoretically impossible to expect to remove much of the extraneous matter present with desmids, is that correct? Of course, anything is a help.

Thanks again for the catalogue and for your helpful suggestions.
With my kind regards,

Sincerely yours,

Paul S. Conger

Paul S. Conger

P.S. Last Fall when you sent the several small vials of sample to me, I did not formally "accession" or record their receipt for our collections which I will do shortly, and as of a date about now. I mention this for you will probably receive formal acknowledgment and had I not told you this might wonder what it was all about. I delayed for several reasons, and guess you will not mind my doing it this way. -- P.S.C.

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

May 6

Dear Mr Scott,

Thank you very much for your careful description of how you draw! I have a far inferior set of optical equipment to work with but I shall give it a try. Stupid that I never thought of separating the parts of a camera lucida.

To answer your later questions

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1. *Microstema* ~~*Vallicularia*~~ is a typo of *Parhelia* on my part, for which I humbly apologize. It should be W. A course

2. I changed *Arthrodesmus stauroidesformis* to *formis* because -forme is a neuter ending and formis is masculine-feminine (3rd decl. adj.) *Desmus* is masculine; all the other species names have masculine endings.

3. "Tanfurcatum" is a hybrid but is probably better than the word you would get by using the Greek equivalent which is "dixous". This would come into Latin as dixo-us, which would seem like an ous ending unless you wrote it dixōos.
dixōus
dixōum

My Greek prof says that sounds worse to him than Taufurcation. He suggests "T"-furation (that is what your "tau" is, isn't it?), but I don't think that would be acceptable. I would use "Taufurcation" if I were you - there are lots of hybrid words in current use.

Thanks for sending me the material from Barnes, etc. It is fun to have them: I've never had material out of N. Am. before. However, if you want some one to help you look for M. Tooreyi v. Doveri you'd better send the material elsewhere. I am frankly surprised under my Alaskan collection, with a deadline on publication, so I shalln't be looking at anything else for a while.

I am glad to have the news about Prescott. I've not heard from him since Christmas. How does he ever get time to work over his collections when he desks about so!

Thank you again, very much, for the detailed, illustrated account of your drawing methods. I'm returning your figures, which are beautiful! I draw on thin paper, too, but my drawings aren't so handsome.

Sincerely

Harold Crossdal

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C.

Mr. Arthur M. Scott,
2824 Dante Street,
New Orleans 18, Louisiana.

April 22, 1952.

Dear Mr. Scott:-

It was good to hear from you again; in fact I had not heard since my letter to you last Fall which I hope and assume reached you O.K. I should have written you again long before this and had intended to but so many things have come up to divert me.

As to small glass rings - your experiences interest me. I believe I made my first 50 before I broke one, but I believe they were 3 mm. holes in 12 mm. covers. Since, I have made many sizes mostly large holes in large covers, but my breakage is negligible. I was surprised to hear you say your covers are dished, for I do not recall ever having come across such.

About your writing up the method for publication. I am embarrassed to say this, and sorry to disappoint you, but I had a paper written on it even before I saw you last Fall and it is already in the hands of our editorial committee for approval. It is entitled a "Method for making small glass rings, and their use," 8 pages type. The method is not mine, nor do I know whose it was originally, though I have greatly expanded and perfected it. Dr. Mann told me of it, though I never knew of his using it, nor where he got it. I don't think it original with him. All this is carefully explained in my paper to give true idea of its history. I suspect it was published in a note in some old journal, though might not have been. It has been my expectation to offer it to Transactions of American Microscopical Society, though I am open to suggestion if you will be so kind, since you say you subscribe to three journals. I wonder what they are, as I only take the above? I have made several hundred of the rings to date, and my current techniques if continued will call for the making of quantities more. In fact I use so many that it is too bad we cannot buy them ready made, that is somewhat thicker more perfect rings such as used to be available to the older microscopists, but there are many materials they used which I could well use but can't get.

I am developing a lot of such ideas, devices and materials, and often wish I lived closer to such a person as you, equipped and trained in engineering and machine work. My latest problem, in which I plod along laboriously with hand tools, is the folding of small metal forms, and I hope someday to construct some crude machines to do the job. I often think of you and feel the combination of a diatomist and steel manufacturer would be a good one.

You will have no reason for knowing, and may be surprised to know, that I have done very lengthy and extensive work on both the material you sent me last Fall, Stauroneis Fulmen sample, and on your Chlorox - Peroxide method. I had hoped to be able to send you a mount of Stauroneis Fulmen but to date have not made any. However, strange as it may seem I have spent several weeks last Fall picking out and cleaning a dozen or so specimens individually which is a very trying and tedious process I have yet to perfect. I followed this course, rather than cleaning in bulk, because the material was so fine and so little of it, that I did not want to lose any specimens of that elegant form, and furthermore I wanted to get some of the complete single and also double frustules which would all break apart if I followed the bulk cleaning procedure. It is such fine stuff that we should have more, and if you ever write to Professor Womersley again you might suggest that he go back to the same place and

get a larger quantity. It is beautiful stuff, and I shall eventually work further on it.

I also did very extensive and critical study of your method of Chlorox and Peroxide to determine its merits, and was somewhat disappointed in my first hope that it would take care of much of our trouble with organic matter simply. It has its value and plenty but it is not as efficient as I had first suspected. In fact I found that even hot nitric did not fully oxidize some materials, but they required hot sulphuric with oxidizing agent. My studies of these were on individual specimens, examined under the microscope during the course of treatment, which is difficult and hard on the instruments, but gives definite results. Probably by now you have had even more experience than I have with it. And incidentally that is a method of great simplicity, cheapness and ease, which I think you should write up as deserving to be well known also. There are many cases in which it will be of great use to me, others where it will not. But I shall have great use for it and it is now a standard procedure to me.

I was glad to have your citation of other instances of occurrence of S. Fulmen.

Do not particularly concern yourself about any collections from Mobile Bay -- if you get any, well and good, if not there are millions of places we have not been or will be in this busy life and big world. I think I probably told you at the time why I was more interested in the materials from that particular area, besides seeing specimens from typical source. There was a very peculiar and interesting abnormal form of the Terpsinæ there of which I should like to get good material (don't know if I have any at all); and the Biddulphia Mobiliensis often occurs there or in many Gulf areas in great abundance when it would be useful to get a concentrated gathering of it. The former (Terpsinæ) is of the most interest to me however, somewhat more than the other. Very few collections have come from Gulf Coast waters in general and well may yield interesting materials.

You did not say whether you wanted identifications on your blueprint of Eunotia and your other drawings, or wanted them returned. I have not had time yet but will attempt to check them if you wish and return. Your drawings are nice.

With kindest regards to you and Mrs. Scott.

Sincerely yours,

Paul S. Conger

Paul S. Conger

April 23 1952

Dear Mr. Conger,

I am by no means disappointed, but rather pleased, that you have written up your method of making shallow cells from cover glasses, because you have had vastly more experience with the process than I have. There is one point I might mention; after cracking the glass in the hole, and breaking out as many as possible of the jagged points,

I smoothed up the perimeter of the hole by filing with a very fine jeweler's rat-tail file, about 3/16" diameter. This worked better than the smoothest abrasive paper wrapped around a small stick. Concerning a medium for publication, the Trans. Am. Microsc. Soc. has a backlog of papers that will fill the journal for two years or more, and they publish strictly in the chronological order of receipt and acceptance. A paper by Prescott and myself was accepted by Prof. Engleton in October 1950, and the new editor writes me that he hopes to publish it in the October 1952 issue, which will be mailed about next Christmas. The other two journals that I used to take are the English "The Microscope and Entomological Monthly", and the German "Mikrokosmos". The latter was suspended during the war, and I have only recently heard that it has started up again.

I dropped the English paper a couple of years ago, because it had little of interest to me, though it published many articles on microscope gadgets and mounting methods similar to yours. Then there is "Miconotes", published in Chicago, with a very small subscriber list, I believe. Why don't you submit it to "Science"? Recently they announced that they were going to try to get away from the predominantly medical and biochemical aspect of the papers that they publish (and I hope they succeed). Further you ought to know some of their personnel, since they need to be located in one of the

Because your cover-glass stunt worked so well, I tried also your method of using the reflection from a piece of glass for completing symmetrical drawings, and find that this, too, is excellent. Like everything else, it has its tricks. First I obtained a piece of glass 4" x 8" (4" vertical). This worked fine for drawings of narrow desmids, up to say 4" wide. But for the large circular forms of Microsterias, which I drew 6" or 7" in diameter, I shall need a glass about 8" high, because with the lower glass, the angle of sight forms such a large angle with the glass that little light is reflected, and it is hard to see the line apparently projected through the glass on to the paper.

Glad to know that you found Stauroneis Fulmen so interesting. When you make slides of it, I should be glad to have one, if you can spare it. And I know for sure that Prof. Womersley would greatly appreciate getting one; he wrote me that algal literature and permanent mounts are extremely scarce in Australia. At present Womersley is in the U.S.; I had a letter from recently from California, where he has been spending the last three months with Dr. Fensholt at Stanford University, working on marine algae. He is going to visit Prescott, and thence to New York and Europe, on his way home to Australia. I had hoped that he could visit New Orleans, but it is too far out of his way.

Like you, I have been disappointed in the Chlorox-Peroxide reaction. Sometimes it works, but more often it doesn't. So I have been doing some rather haphazard experimenting. First I tried H_2O_2 on the theory that its greater oxygen content might be more efficient than NaClO . There is very little reaction with H_2O_2 at room temperature, but a brisk one at the boiling point; however it has little effect on the cell-contents of either desmids or diatoms. Next I tried KOH with peroxide. Again no visible reaction, and though the chloroplast of desmids is partly dissolved the experiment does not hold out much promise. I had better luck with KOH and Chlorox. I first treated some material with about 5% KOH for an hour, which disintegrated the

desmid chloroplast, and filled the desmid cell with a pale greyish-green substance, apparently fluid. Then I added 2 drops of Chlorox to the material on the slide, and added a cover-glass. In a few minutes I located a desmid that was worth drawing, so I examined it carefully. The liquid surrounding the cell was clear with almost no visible particles. The interior of the cell was filled with a multitude of tiny particles, probably 1 to 2 microns diameter, in rapid Brownian movement. By the time I had finished the drawing, about half-an-hour, the number of moving particles had greatly decreased, and the cell was getting more transparent. At that time I looked at my watch and found that it was 1 a.m., so I decided to go to bed. I sealed the mount with Nujol oil, and left it overnight. The next morning almost all of the particles in the desmid cell had disappeared, and for my purposes the cell was completely cleared of its contents. So then I inspected all the other desmids and diatoms (mostly Pinnularis sp.) on the slide, and found that almost without exception they were perfectly cleaned.

Of course I was elated, and decided to test the process on some valuable material from Sumatra that I am working on. So I placed a small quantity in a test tube with 5% KOH, and examined it from time to time, until the chloroplasts had disintegrated, then added enough Chlorox to make about 5% of the total, and again examined samples at various intervals. To my surprise there was no clearing action. I added another 5% of Chlorox; still no clearing. Then I got mad, added another 15% Chlorox and boiled the whole mess. After cooling, lo and behold, everything was perfectly cleared. I don't know whether it was the extra Chlorox or the boiling that did the trick, but I suspect that it was the best. That's as far as I have got up to date. The method is based on a hint by W. & G. S. West (1902) to try "an alcoholic solution of potash", though I don't know just what this could mean. Also Einar Teiling recommends caustic soda and a hypochlorite; and one of the Czechoslovakian algologists has something similar in one of his papers that I cannot locate just now.

I think it would be worth your while to try this, using NaOH and Chlorox; I used KOH simply because I had it on hand. But note that it has little or no effect on anything but the cell contents of desmids and diatoms; it does not dissolve what I call "lacous debris", consisting of the gelatinous amorphous substances resulting from the natural break-down of vegetable matter, and which I imagine are largely composed of pectinous compounds. I even noted fragments of the cases of tube-building rotifers, made of spherical pellets fashioned and assembled by these little animals. The pellets even adhered together after this rather drastic treatment with hydroxide and boiling.

I know very little about sheet metal working, but I happened to have in the office a catalogue of the O'Neill-Irwin Co., who make a line of small hand machines that are very good and I believe would suit your purposes. Under separate cover I have sent the catalogue and a 1943 price-list. The prices have probably increased by 50% or 75% since then, but Uncle Sam ought to be able to buy some of them for you. The #1 brake ought to be just what you want, if your work is not more than 6" wide, otherwise the #2. There is another metal brake advertised in Popular Mechanics and similar magazines at about \$35, but it is probably not so good nor accurate as the Di-Acro line.

Thanks for the diatom identifications. Sometimes I make sketches of diatoms when I see something that looks unusual to me. No doubt they are commonplace to you with your knowledge of the whole world of diatoms; but maybe I can run across another case similar to St. Fulmen.

With my best regards,

Sincerely yours,

April 26 1952

Dear Dr. Crossdale,

Thanks for the Latin diagnoses, which arrived yesterday. I count 54 of them, so I am enclosing my check for \$34.00. Prescott has not yet sent me the balance of the descriptions; as usual he is busy with a multitude of things. I certainly hope that he is able to get to them before he starts on his travels again. Probably you know that he is going to Mohsana for summer school; then to Point Barrow in Alaska, where he will remain until near Christmas; then next Spring he hopes to go to Ecuador again. Quite a traveller, eh what?

There are a couple of foolish questions that I wish to ask about the Latin. You have changed Arthrodesmus steurodesmiformis to -formis. This seems peculiar to me, though I have already told you that I know nothing about Latin grammar. Also Micrasterias ceylonica var. Vallichiana. There is no letter W in Latin, of course, but to me it appears somewhat pedantic to change the spelling of a proper name.

I don't enlarge my camera lucida drawings. They are made to the same size that you see on my plates, which are traced directly from the originals. There is no trick to making large camera lucida drawings; all you need to do is to use a higher power eyepiece and/or move the mirror further away from the microscope. Two or three people have asked me about my method, and I have explained it to Prescott, Teiling, and Grönbald, but they have not adopted it, and seem to be satisfied with their old methods. But I find it very much easier to make a correct outline and to locate and show the small details or ornamentation on a large drawing than on a small one. When I first started making drawings, I used a 10x eyepiece and 10x objective for searching, and then switched to a 45x or 60x objective for examination and drawing. But I found that it was very easy to overlook many of the small desmids with the 10x eyepiece, so I bought and 20x and have been using that power ever since, both for searching and examination and drawing. Even with this power and a 10x objective there are some tiny Cosmaria, down to 6 μ long, that can be seen only as minute double green specks; you can't even tell whether they are desmids until you turn in the higher objective. Of course, the 20x eyepiece is too strong for achromatic objectives, and the definition is somewhat impaired, but I used the combination for a number of years successfully. Where definition is important I use a 15x eyepiece and 60x dry objective; the 90x immersion I use very seldom, because the viscosity of the immersion oil moves the loose cover glass and disturbs the specimen.

I am enclosing a couple of photos showing my set-up. The scope is a new one that I bought about 18 months ago. It is a Spencer research type, Model 5 LXX, with apochromatic objectives and compensating eyepieces. I bought it because I thought it was the best American scope, and it is certainly about the most expensive, but the design in many details is poor, and I could improve it in a dozen ways. In fact I have already made some changes on it to suit myself. The apochromatic objectives are not much better than achromats for work on algae, while the correction collars on the 45x and 60x objectives are a nuisance; in fact on the 45x which I use for most observation and measuring, I have set the correction collar at a ^{position} ~~value~~ that gives a value of exactly 3 μ per division of the eyepiece micrometer disc, though this setting is not the best for definition.

From the photos you will see that the mirror of the camera lucida is not attached to the microscope, but is carried on a separate stand, with a distance of about 6.5 inches from the center of the mirror to the optical axis of the scope. This separation of the mirror from the scope accomplishes several purposes. It enables you to get a greater distance, with a resulting larger drawing. Also it gets the

paper further away from the base of the scope, so that there is no interference from the edge of the mechanical stage or the control knobs, and the paper can be turned into any convenient position to suit the orientation of the specimen being drawn.

The real purpose of the separation, however, is to enable me to draw on a horizontal surface with the inclined binocular tubes, or with the scope in an inclined position. Many workers are unaware of this trick, and have expressed surprise that it can be done. I "invented" the trick myself, but I am quite sure that others used it before me; in fact I think that some scope manufacturers are now offering a camera lucida incorporating some device for making drawings on a horizontal surface with an inclined instrument, or the modern type with vertical body but with inclined ocular tubes. Just how they do it I don't know; I have never seen one.

There is one peculiar and surprising result from this combination of inclined scope and horizontal drawing. Suppose that you have oriented a specimen of *Pleurotaenium* in an exactly vertical, or North-South, position in the field of view of the microscope, and then draw it. After the drawing is made you will find that the long axis of the ~~specimen~~ drawing is not vertical on the paper, but has been rotated counter-clockwise through an angle corresponding to the angle of inclination of the scope. I can understand why this happens, but don't know enough optics to explain it. The first attempt at drawing with this set-up is most disconcerting. The muscles of the hand and fingers refuse to obey the commands of the brain, and insist on trying to draw the object in the vertical position, as they are accustomed to doing. It is like trying for the first time to manipulate a dissecting ~~man's~~ needle under a reversing microscope. But a few hours or days practice eliminates the difficulty, and thereafter there is no trouble.

In the pictures you will notice a large lens directly under the mirror. This is a supplementary negative (concave) lens of about 6" focus, carried on a separate support, that I sometimes use for drawing very small specimens. Its use causes the drawing to be made about one-third larger than would be the case without the supplementary lens.

Also you will see another lens carried on a jointed horizontal arm. This is an ordinary reading glass, magnifying about $2\frac{1}{2}$ times, which I used for completing the drawing after I have traced the outlines with the camera lucida, and for filling in the small details. It can be swung out of the way when not required. I need it because my eyesight is not so good as it used to be, and I use a similar magnifier for making my finished plates.

The lamp is a Leitz Monla, 6 volt, run from a transformer controlled by a rheostat. This enables you to regulate the light for both observation and for drawing much more exactly, so that I no longer use the graduated neutral filters in the head of the camera lucida. Also I have fitted the lamp with an iris diaphragm so that I can reduce the size of the illuminated spot in the field of view to little more than the diameter of the specimen under observation, while still using the condenser diaphragm at its full opening which is necessary for the best resolution.

Note that the position of the mirror is the same as if the scope were vertical. The plane of the mirror is at 45° to the table top, with the upper and lower short edges of the mirror parallel with the table top, i.e. horizontal.

I am enclosing a few of my original sketches to give you an idea of what they look like. They show some of the more spectacular details that I am finding in the Indonesian material that I am now working on. Please return them because I have no copies.

If you are thinking of trying my methods I should be only too happy to answer any questions that may occur to you. And as a slight return for your kindness in getting these collections for me from Pudding Pond, I am sending you a few samples of the material from Borneo, Java and Sumatra. You may keep these since my friend sent me plenty.

Sincerely yours,

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

April 21

Dear Mr Scott,

Here is the latin, at last,

I am sorry to have been so slow with it,
but since the second batch hadn't come
along I gathered that there was no hurry.

I hope it sounds all right to you; I've

Digitized by Hunt Institute for Botanical Documentation

~~made suggestions for changes in species~~
endings here and there.

They are certainly beautiful desmids.

The \pm arctic stuff I am working on now—
are nearly all *Cosmaria*.

Do you have a device for magnifying
camera lucida drawings? I like your
large figures, and would like to copy
your technique.

Sincerely

Harold Crossland

April 7 1952

Mr. Paul S. Conger,
Smithsonian Institution,
Washington, D.C.

Dear Mr. Conger,

A few days ago I tried out your method of making shallow cells from cover glasses, and somewhat to my surprise succeeded in first attempt, making a 12 mm hole in an 18mm #1 cover glass. Then I got ambitious and tried to make 14 mm holes, with the result that I broke three in succession before getting a perfect one. My fingers are rather clumsy for handling such very delicate objects, but part of the trouble was that all my circular cover-glasses are considerably dished; I have not found a single one that is flat.

The method is so simple, quick, and easy that it deserves to be better known. I have read quite a lot of books on microscopy, and subscribe to three journals, but have never run across it before; no doubt a lot of microscopists never have either. I have in mind writing it up, either for publication if it has not appeared in print before, or if it has I can mimeograph it for circulation to my friends and correspondents. So I would like you to tell me whether you originated the stunt, or if not, do you know who did? Also has it been published before, and if so where? Would you have any objection to my publishing it, giving you due credit of course?

I have not forgotten your *Terpsinoe musica* and *Eiddulphia mobilensis*, but the only time I have been through Mobile since seeing you, it was raining heavily, and I could not attempt to get any collections. I note that both these distans seem to be well known, and from many parts of the world; I wondered why you were desirous of getting them from Mobile bay. Perhaps to check the original description and compare with exotic forms. By accident I ran across a record of *T. musica* from a fresh-water(!) habitat in Java, in *Protococcaceae et Desmidiaceae d'Eau Douce*, by Ch. Bernard, *Departemente de l'Agriculture aux Indes Neerlandaises, Batavia 1908*. He gives a poor figure of the girde view only, with the internal septae represented as invaginations of the cell-wall!

Also I found a record of *Stauroneis Fulmen*, in *Freshwater Algae of the Lismore District*, *Proc. Linn. Soc. N.S.W.*, Vol. XL, Pt.2., July 28th 1915, by G. I. Playfair. He gives a rather sketchy but recognizable illustration. It occurred in 3 collections from Lismore, N.S.W.

Enclosed is a blueprint of a drawing that I made nearly twelve years ago, when I was just getting started on desmids, showing 14 different forms and species of *Eunotia* that I saw in one collection. It struck me as remarkable, so I made sketches and sent them to Prescott, who forwarded them to Miss Ruth Patrick, who characteristically did not seem to be much interested. No doubt all of them are familiar to you. I don't have this collection any more, and though I have collected many times from this pond I have never seen at large an assemblage of one genus.

Sincerely yours,

Mch 30 1952

Dr. Alan B. Cribb,
Marine Biological Laboratories,
Cronulla, N.S.W.

Dear Dr. Cribb,

The five bottles of sigal samples arrived a few days ago, taking more than two months in transit. Please accept my sincere thanks for the trouble you went to in collecting and sending them.

A preliminary examination shows that only one of them is rich in desmids, the one marked "Pools in creek at Springfield. This contains immense quantities of *Staurastrum furcatum*, *St. apiculatum*, a fair number of *Euastrum Turneri* and *E. ensatum* var., with a scattering of other forms. The other samples are rather poor in desmids, but some of them are interesting, and undoubtedly I shall find more when I get time for a systematic examination. Already I have noted a couple that may be new. In any event your collections will add a number of records for Australia.

One of the samples was collected between Harrisville and Ipawich, and the latter town is the only one that I can locate on my small map. I assume, therefore, that the three samples from Queensland were ~~xxx~~ gathered in the vicinity of Brisbane. The desmid-flora differs greatly from that in the collections obtained by Ray Specht from Birmah Land, which belongs to the Indo-Malayan-Indonesian flora, while yours show a much closer resemblance to the desmid-flora of South Australia, as shown in material sent to me by Ivan Ophel and H.B.S. Womersley of the University of Adelaide. So far I have seen only one tropical desmid in your bottles, *Cosmarium suriculatum*, which occurs fairly frequently in material that I am now studying, from Borneo, Java and Sumatra.

But anything from Australia is sure to add to our knowledge, because while there is a list of something like one hundred papers published on Australian fresh-water algae, most of them are from Victoria and New South Wales. So whenever you have a chance to pick up some more collections, please be assured that I shall appreciate them very highly.

I am sending you a package containing half-a-dozen papers that are of no value to me because they deal mostly with marine algae. I hope that they will be of some use to you; if not you can perhaps pass them on to someone else.

With my best regards,

Sincerely yours,



COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

DIVISION OF FISHERIES

TELEPHONE: LB 5311

MARINE BIOLOGICAL LABORATORY,
CRONULLA, N.S.W.

18/1/1952.

Dear Dr. Scott,

Thank you very much for the reprint of one of Yonerveld's papers which you sent some time ago. I am very pleased to have it, and have acknowledged it to him as you suggested. Since writing to you last I have had hardly any opportunity for collecting desmids in Queensland, but have just posted off to you the small collection I have made. If all goes well I hope to get up to Qld. later in the year and hope I shall have opportunity then to do some collecting.

With best wishes,
Yours sincerely,
Alan B. Gibb.

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
DEPARTMENT OF ZOOLOGY

1 Feb 1952

Dear Mr Scott,

The manuscript arrived safely. Thank you for sending it to me. I have started work on the diagnoses and shall hope to have them finished by the time the next batch arrives. I agree with you that the plates are beautiful! I am considering papering the ceiling of my bedroom with all the blueprints you have sent me so that I can lie in bed and admire them - and play guessing games. Above the beauty of the algae I think I admire your ability to draw them. I'd like to watch you in action and see your technique.

It is a great help to have the illustrations at hand when writing the diagnoses and I do appreciate your thoughtfulness in sending them. No one of my other clients ever does so.

Congratulations on the many new forms and their beautiful execution.

Sincerely

Hannal Crossland

Sorry not to see you at the AAAS ~~next~~ meetings.

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C.

September 27, 1951.

Mr. Arthur M. Scott,
2324 Dante Street,
New Orleans 18, Louisiana.

Dear Mr. Scott:-

I am glad to know you are back home after a good trip. It was indeed a pleasure to make your acquaintance and that of Mrs. Scott, and to have so good a visit with you. We will hope for even better occasions in the future, when perhaps our time can be freer of other distracting business matters.

This is in acknowledgment of your good letter, and to advise you also that the cigar box of ten small vials has reached me safely and in good condition. I was glad too, to see the drawings, which are being returned to you herewith, and my comments given below. First, while on the subject of your letter, let me mention that I do not have a PhD degree, and consequently do not merit the prefix "Dr.", which has come into such overwhelming precedence, as to need such mention.

The Gyrosigma fascicola, I think without studying the actual material extensively, probably warrants naming as a new variety, for it is definitely long and narrow form of the species fascicola with beautifully extended and curved ends.

The Nitzschia Closterium form I think is that species, which is considerably variable; at least I would not want to separate it from that, without study of specimens. There are one or two forms of Nitzschia of similar shape but larger size. I think you should have no trouble deciding from your specimens if it is N. Closterium.

The other form you picture, and question as a probable Pinnularia is indeed one, and a beautiful one, which I happened to know immediately because it is unusual and has long been a favorite of mine. It is Pinnularia polyonca (Bréb.)^{u.s.p.} I put these in Navicula. You will find it figured in Schönfeldt, plate 4, fig. 382. (not too good a drawing). Your drawing of it is perfect, far better than his, and if inked and photographically reduced about half would make a very nice illustration. I have good slides of this. Dr. Mann called it Nav. peripunctata, a nice and appropriate name. There is really no need to send me material of these, as I have specimens, unless you should sometime find material in which they are abundant, and then I would always like it. I do not know what diatom literature you have and so will not cite other figures, but you will be able to follow it down easily under the name polyonca, and perhaps will find some better figures, though none to surpass your own.

October 2, 1951.

You will think I am slow in my acknowledgment, and I am, but many things interrupt, and I wanted to try your cleaning method which I have now done. In the meantime your second good letter has come so I will answer it now also.

I was much interested in the Chlorox cleaning method, though I wish it were somewhat more effective than it is. I think it a very useful method, especially with small amounts of material and where the organic matter content is not too heavy or too resistant. I feel I shall use it a great deal. It has the advantages of being so

quick and easy to perform, and of utilizing such commonly procurable and relatively cheap materials. You have done me a great favor in acquainting me with this process. It occurs to me also that it affords a simple and readily available method for persons in places or circumstances where they cannot practicably use the more drastic and troublesome methods of cleaning with acids and other chemicals.

I have not had opportunity as yet to mount the Stauroneis Fulmen as that is a time-taking job, but I hope to have a try at it within a few days if I can steal a bit of time.

Thank you for the citation of the two articles in your second letter. I am sure I can procure them in the Library despite their deficiencies. There are times when I could use the micro-pipette method to advantage, and have done with a crude hand instrument which of course lacks the precise control so necessary with a capillary tube.

I do not have the paper by Helmcke and Krieger, and it impresses me as one I should have and would like to own for my library. If you are writing him and would not mind mentioning to him that I would be glad to have a copy, I would appreciate it, or if you prefer not and would rather send me his address I can write him myself. I have always been particularly interested in the shell structure of various diatoms from a number of standpoints, physiological, evolutionary, and industrial, and especially since the electron microscope has made it possible to gain better ideas of it.

We continue to have very warm and dry weather, and the country is badly in need of rain around here. Hope it does not mean you are suffering with heat.

With kind regards,

Sincerely yours,

Paul S. Conger
Paul S. Conger

Sept 23 1951

Dear Dr. Conger,

Nygaard's simple micromanipulator, for picking up minute objects in a liquid mount, is described and figured in:

Nygaard, Gunnar. 1949. Hydrobiological Studies on some Danish Ponds and Lakes. Kong. Danske Vidensk. Selsk. Biologiske Skrifter, VII No. 1, 1-293.

There are few diatoms mentioned in this paper, but he describes and illustrates a very curious new form of *Cyclotella Meneghiniana* Kg., with extremely long silicified bristles or setae. I imagine you can get this paper from the Dept. of Agriculture. If not I can lend it to you.

A couple of weeks ago I received from Dr. Krieger a reprint of the following paper:

Helmske, J.G. und W. Krieger. 1951. Feinbau von Diatomeenschalen in Einzeldarstellungen. 2. Die Gattung *Achnanthes* Bory. Zeitschr. f. wissensch. Mikrosk. und mikrosk. Technik. Band 60., Heft 3/4.

This has some nice electron microscope photos at magnifications up to 12700x, and some very clear schematic diagrams of the valve structure. I can also lend you this if you do not have it.

Sincerely yours,

Sept 16 1951

Dr. Paul S. Conger,
Smithsonian Institute,
Washington, D.C.

Dear Dr. Conger,

My wife and I thank you very sincerely for the great courtesy that you extended to us yesterday in Washington. When you come to New Orleans it will be a pleasure to show you some of the sights of our city, though we have nothing to compare with the magnificent buildings of the Nation's Capital.

This morning I tried again the experiment with Chlorox and hydrogen peroxide, on a different lot of material that contains a large proportion of a brownish gelatinous substance that I assume results from the breakdown of vegetable matter. Apparently my statement that the reaction destroys all inorganic matter is much too broad, because this gelatinous substance seemed to be entirely unaffected, even the brown color remained unbleached, though the reaction liberates a large quantity of free chlorine. However, the reaction does dissolve or destroy the cell contents of both diatoms and desmids, completely in most cases, and partially in the case of large desmids. This is valuable for me, and I think it will be for you, since it enables the ornamentation of the cell wall to be seen without obstruction. Anyway the experiment is very easy to try, and it might be of help to you.

I am sending you a box containing 10 vials of material, as follows:

- Peru #1 & #2. Collected by Felix Woytkowski from a pool in the Botanical Garden at Lima, Peru. Associated aquatics: Nymphaea, Ceratophyllum, ~~Typha, Sagittaria, Juncus, Eichhornia, etc.~~
- Peru #3. Coll. Woytkowski. Laguna Villa, 15 km south of Lima. Abundant Eichhornia, Sagittaria, Typha (domingensis?), Utricularia, etc.
- Peru #4. Coll. Woytkowski. Pampa del Sacramento (on the way to Pucallpa on the shore of the River Ucayali, Dept. of Loreto. About 150 meters above sea-level; tropical jungle; about 800 km from Lima. Reeds, rushes, Ceratophyllum, etc.

Woytkowski is a professional collector of entomological specimens, and I have paid for these collections, and expect to get more from him. I sent samples of these Peruvian collections to Dr. Ruth Patrick more than a month ago, but she has not acknowledged them.

A. B. Gribb #118, 119 and 120. Lake Dobson, Tasmania. Coll. Miss H. Shields. No other information available. These samples were sent to me by Dr. Alan B. Gribb, of Cronulla, N.S.W.

South Australia. Waterfall Gully, 6 miles SW of Adelaide. Coll. H. B. S. Womersley Oct 20 1950.

South Australia. Mount Compass, 30 miles S. of Adelaide. Coll. H. B. S. Womersley and I. L. Ophel, Oct 10 1950.

South Australia. Mount Compass, Coll. H. B. S. Womersley Apr 22 1951. This is the sample containing Staurozois Fulmen. Womersley is head of the Dept. of Botany, University of Adelaide

I am enclosing sketches of three unusual diatoms that I have run across during my search for desmids. The first is *Gyrodinium fascicula*, which I think has been named as a new variety by Ruth Setrick. There is also a photo of this diatom, showing the rectangular system of striae or rather punctae, taken by an associate of mine; I do not remember his name. Habitat: Bayou Chevreuil, near Vacherie, St. James Parish, La.

The next is probably a *Nitzschia*, similar to *N. Glosterium* Ehrbg., as shown in Schönfeldt's *Diatomeaceae Germanicae*. From a swamp $4\frac{1}{2}$ miles south of Ponchatoula, Tangipahoa Parish, La.

The third probably belongs to the *Pinnularia* group. I have not been able to find anything like it in my very limited literature on diatoms. From a swamp 2 miles north of Converse, Sabine Parish, La.

If any of these are of interest to you, let me know, and I shall gladly send you some of the material. Please return the sketches after you have finished with them.

When I get more time I will make up samples of some 250 collections from Florida. These were taken from soft, acid waters, since my object in collecting is to get desmids, and I avoid hard waters which are more favorable for diatoms. Nevertheless you might find something of interest in them. Also I will send you about 60 samples from Japan, which were sent to me by Minoru Hirano, Dept. of Botany, Univ. of Kyoto. These are richer in diatoms than desmids, though most of them seem to have been taken from acid waters, such as peat-bogs. There is no obligation on your part to write up the diatoms in these collections, though I should be very glad for you to do so, if you ever get the time for it. For the Japanese stuff I would have to get Hirano's permission, which I am sure he would be glad to give, provided nobody else has worked on the diatoms.

Sincerely yours,

Aug 29 1951

Chronica Botanica Co.
Waltham 54, Mass.

Gentlemen,

The collection of books that you are publishing in the Chronica Botanica series comprises such a heterogeneous assortment of subjects that I am puzzled as to what kind of a botanist could possibly be interested in all of them.

The books that you have sent me so far have been of little value to me, but I have accepted them, and after having glanced through them, I have sent them to my friends in other parts of the world who might have more use for them.

But the last one you sent, the translation of a Russian work on plant genetics and cultivation, is completely valueless to me. My only interest in Triticum is when it is set before me, toasted, on the breakfast table. Since all my botanist friends are algologists, the book would be of no value to them. So I have taken the liberty of returning it to you for credit.

Please discontinue my subscription to the Chronica Botanica series. If there is any balance that I owe you, I shall be glad to pay it upon receipt of your bill.

Very truly yours,

COMMONWEALTH



OF AUSTRALIA

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

DIVISION OF FISHERIES

TELEPHONE: LB 5311

MARINE BIOLOGICAL LABORATORY,
CRONULLA, N.S.W.

19/3/51.

Dear Dr. Scott,

I have just received from the
Government Botanist in Brisbane three parts, the
only ones they have left, of the "Contributions to the
Queensland Flora." I am posting them to you by
ordinary mail, and hope that they are at least
part of what you require.

Yours sincerely,
Alan B. Critt

April 19 1951

Dear Dr. Gribb,

I have just received the three parts of Bailey's Contributions to the Queensland Flora, and wish to thank you sincerely for the trouble you went to in getting them for me. They are most interesting, and I have found many of Bailey's plants in the collections from Arnhem Land which I am now working up. There is something puzzling about these papers, however, since Bailey apparently identified very few of the algae himself, yet published a number of them as "Sp. Nov.", followed by Borge's or Nordstedt's name as author, and a number of his illustrations seem to be exact copies of drawings by those authors.

The three vials of collections from Lake Dobson in Tasmania have also arrived safely. My best thanks to Miss Shields for collecting them, and to you for forwarding them. So far I have not had time to do more than a quick examination of a few mounts from each vial. The material is rather poor in desmids, which is surprising to me in view of the leaves of *Ceratophyllum*, *Myriophyllum* and two genera of mosses which were included in the vials. Squeezings from these plants usually yield a larger number and greater variety of desmids. Nevertheless I have found some interesting specimens, a new variety of *Cosmarium quadriferum*, a form of *Micrasterias truncata* differing from anything that I am acquainted with and possibly entitled to a new varietal name, and a new variety (or at least a new form) of *Micrasterias denticulata*. In addition there are *Staurostrum sagittarium* and *Buistrum sphyroides*, which seem to be quite rare even in Australian and New Zealand material.

These Tasmanian collections will fit in very nicely with some others from South Australia, which Mr. H. B. S. Womersley, of the University of Adelaide, is sending me.

From the appearance of your samples, and the presence of *Ceratophyllum* which usually grows in hard water, I should guess that Lake Dobson is possibly on a limestone formation, and desmids do not like hard waters that are rich in calcium

and magnesium. Also I have found that large lake generally do not yield many desmids. I get my best collections from smaller bodies of water, ponds, pools, swamps, fresh-water marshes, and even roadside ditches; in fact almost any small aquatic habitat of a permanent or semi-permanent character. But the essential feature is that the water must be acid, with a pH lower than 7.0, the optimum values being about 4.5 to 6.5. Such waters are found on soils that are derived from the disintegration of acid rocks, such as granite, gneiss, sandstone, quartz, etc. It took me several years, and a lot of travelling, to find the desmid-rich regions in southeastern United States. A couple of years ago I visited Cuba, but came back almost empty-handed, since almost the entire island is composed of limestone, and an automobile accident prevented me from reaching the small region in the western tip of the island where desmids might be expected.

I shall be very grateful for any further collections that you may be able to send me, and especially from the tropical parts of Queensland, or from New Guinea or adjacent islands. The desmid-flora of those regions belongs to the Indo-Malayan-Indonesian group, and is quite different from that of more temperate climates.

With my best regards,

Sincerely yours,



COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

DIVISION OF FISHERIES

TELEPHONE: LB 5311

MARINE BIOLOGICAL LABORATORY,
CRONULLA, N.S.W.

1/3/51.

Dear Dr. Scott,

many thanks for your letter of
12th. Dec. I have just returned to Cronulla after
spending several weeks in Tasmania & have posted
to you a small collection of Desmids from Lake
Dobson in Tasmania.

I expect to visit Queensland within the next
few weeks and shall try to make collections of
Desmids there.

It is quite possible that at least some of the
parts of Bailey's Contrib. to Qld. Flora which you
require are still available. If so they would be
in the charge of the Government Botanist, Queensland
Herbarium, Botanic Gardens, Brisbane.

Anyway
I have written to the Government Botanist telling
him of your request and asking if he could
post those parts to you if they are still available.

COMMONWEALTH



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DIVISION OF FISHERIES

TELEPHONE: LB 5311

MARINE BIOLOGICAL LABORATORY,
CRONULLA, N.S.W.

Thank you very much also for the paper on
marine algae. I did not have a copy of this
work, and as there is much of interest to me
in it, it was most welcome.

With kind regards,
Yours sincerely,

Alan B. Culb

Auckland University College,
Auckland, C.1.
NEW ZEALAND.

.11th. Dec., 1950.

A.M. SCOTT.
2824 Dante St.,
NEW ORLEANS.

Professor Chapman thanks you very much for the reprints below which
have been received.

New Varieties of Staurastrum ophiura Lund.



COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

DIVISION OF FISHERIES

TELEPHONE: LB 5311

MARINE BIOLOGICAL LABORATORY,
CRONULLA, N.S.W.

13/12/50.

Dear Dr. Scott,

Thank you very much for your reprint on *Staurastrum ofhiara* which arrived this week.

I am now with the C.S.I.R.O. Division of Fisheries, and am working on Macrocystris, but am very pleased to have your paper.

Would specimens of Australian desmids be of any use to you? I sometimes collect them though have not time to attempt any determinations, but should be pleased to send them on to you if they would be of use.

With kind regards,
Yours sincerely,
Alan B. Gibb.

Dec 21 1950

Dr. Alan B. Cribb,
C.S.I.R.O., Division of Fisheries,
Marine Biological Laboratory,
Cronulla, N.S.W.

Dear Dr. Cribb,

Many thanks for your airmail letter of the 12th inst. I should indeed be very grateful for any collections of Australian desmids that you might be able to send me, not only from New South Wales, but even more so from Queensland.

Just last week I finished the rough draft of a paper on Desmids from South Australia, mostly from Kangaroo Island and a few from the neighbourhood of Adelaide. But as I was preparing to write the finished paper, I received an airmail letter from Mr. H. B. S. Womersley, University of Adelaide, asking me to hold up publication pending the receipt of additional material that he and Mr. Ivan Ophel are going to send me, during the next two or three years. Since the desmid-flora of South Australia appears to be generally similar to that of N.S.W. and Victoria, as described by previous workers, it is quite likely that I might be able to include in this paper any material that you can send me.

Also I have in preparation a paper on desmids from Arnhem Land in North Australia, collected by Mr. Gay Specht during the 1949 expedition sponsored by the Australasian Government-National Geographic Magazine-Smithsonian Institution. The desmid-flora of Arnhem Land is of a quite different character from that of the more southerly portions of the Australian continent, and closely resembles that of Queensland, described by Bailey, Borge, Nordstedt and others. It is also quite similar to that of the East Indian Islands, Java, Bali and Borneo. I have recently received a few gatherings from these islands, which will eventually be published, I hope.

Both of these papers are being prepared in collaboration with Dr. Gerald W. Prescott, Michigan State College, who is the best American authority on desmids.

So you see that your kind offer has certainly hit the nail on the head. So far as I know there has been nothing published on Australian freshwater algae since Fleyfsir's work in 1907-1918, and a single paper by Ström in 1921 on North Australia.

Undoubtedly you know, but I should like to emphasize, that the best desmid collections, both as to number of individuals and diversity of species, are obtained from soft waters with an optimum pH of 4.5 to 6.5, occasionally up to 7.0. Such waters are found on soils that have been derived from acid rocks like granite, quartzite, sandstone, etc. Limestone regions, in which the surface waters are hard and contain a considerable quantity of calcium, are unfavorable for desmids, and those that are found are usually well-known cosmopolitan species. I find that gatherings made with a plankton net yield smaller quantities of material, and fewer species of desmids, than squeezings from such plants as Utricularia, Myriophyllum, Cabomba, Sphagnum and other mosses, and sometimes Chara and Nitella, though these two are usually found in hard water. Good collections are also made by stripping the flocculent filamentous material from the submerged stems of such plants as Iscetes, and various reeds and rushes. I would like to get about one dram of sediment in a 2 or 3-dram vial, which enables me to split with Dr. Prescott, and affords plenty of material for examination. It also offers a better chance of finding several specimens of rare new species, instead of

merely one or two. It is a good idea to add 5% glycerine to the formalin preserving solution, to prevent complete drying out in case of leakage at the cork, or breakage of the vials. A strong wooden box is the only safe package for shipping over such long distances. In four shipments that I have received during the last couple of years from Austfelia, Japan and Java, a number of the tubes have been broken, due to unskillful packing, and though I have managed to salvage some of the dried-out material, its resuscitation with NaOH and lactic acid is not very satisfactory. A Japanese algologist slipped three or four vials, wrapped in paper, inside large sections of bamboo, cut just below the nodes, and tied up the open ends. Then he rolled six or seven bamboos in a bundle, wrapped in corrugated paper, and shipped them that way. They arrived quite safely.

Since you are working on marine algae I am sending you a paper that I received from Dr. W. Krieger in Germany a week or so ago, and which is of no use to me. It is Vol. II, No. 2, of Scientific Papers of the Inst. of Algological Research of the Hokkaido Imperial University, Sapporo, Japan, Feb. 1941; containing seven papers in English by various Japanese authors. There are a number of excellent drawings and photographs of marine algae.

Another friend in Sweden wrote me some time ago that he thought it might still be possible to obtain copies of F.M. Bailey's Contributions to the Queensland Flora, I, II and III, published by the Dept. of Agriculture in Brisbane in 1893, 1895 and 1898. Do you know if this is correct, and could you tell me to whom I should write?

With my best regards,

Sincerely yours,

Dec 6 1950

Dear Dr. Crossdale,

Herewith is another MS, on *Bastrum*, for which I would like you to prepare the Latin translations. I have underlined in red the new species, varieties and forms.

So this is something you can work on during the Christmas holidays when you are snowbound, while my wife and I are sunbasking down in either Florida or Mexico. I'm not sure yet which way we shall go.

Sincerely yours,

Digitized by Hunt Institute for Botanical Documentation

P.S. I have only the one copy of the MS, so please return it.

Nov 25 1950

Dear Dr. Crossdale,

Many thanks for the Latin translations. I count 48 new descriptions in the two papers, so I am enclosing my check for \$48.00 herewith. There is another paper almost ready, merely waiting on Prescott to iron out a few differences of opinion on identities; when that is done I shall send it to you for the Latin.

Of course, I could not expect you to any wholesale lawbreaking; so please forget my request. I could arrange an interlibrary loan, but when the books arrive here our local library will not permit me to take them away from the premises, even though I have offered to put up \$100 deposit to guarantee their safe return. It is simply not practical to use literature of this kind in the reading room, since I must compare the illustrations and descriptions with those in other literature, and with my own drawings. Frequently it is desirable to have the book right alongside the microscope, to compare the illustration with the actual specimen under observation. At least, that is the way I frequently work.

I would not want to have photostats made of the whole series of papers that I listed, because I have seen one or two of them, and know that the figures are poor and not worth while reproducing. So I'll get along without them.

Many thanks for your efforts.

Sincerely yours,

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
Department of Biology
200

Nov 13

Dear Mr. Scott,

Enclosed is ^{all} ~~some~~ of the letters,
(finished it after I wrote this letter.)
~~more will follow shortly.~~ I am sorry that
I scrambled the order. I did it to save
space when I typed them to send them to
my letter prof, abroad, for checking; and then
forgot about it when I retyped them. The next
lot will be in order. I am sorry too, that I
have delayed so long. You said you were
in no great hurry so I let other orders have
priority, but I did not mean to be this
slow. I have enjoyed doing them.

I am sorry, too, to be so late answering
your request for the journals containing the
Cushman papers. We do not have any of the
papers, of course, just the journals in which
they were published, and our library won't
officially lend journals, out of town, except
on "Inter-library Loan". When I offered to
send you the Rhodora containing the one

DARTMOUTH COLLEGE
GEORGE W. BROWN
LIBRARY

paper we were discussing I was willing, to break the rule, for one book, and sneak it off to you. But I simply haven't the face to do it on the list you list.

We do have all the numbers you want. Perhaps you have contact with some local library that can negotiate an inter-library loan. If not, we have a photostat service that does not sound too expensive. We charge 50¢ a negative, plus 40¢ for printing a positive from it. One negative is 18" x 22", which means 8 pages at once, of Rhodora, Bot. Gaz or Torrey Bull. The papers you list add up to less than 100 pages, including plates.

We do not have a microfilm service. If you want photostats made of any or all I'll negotiate that for you. I'm sorry not to be able to send them to you, but it is too big an order for law-breaking.

Yes. I did see Brunel's paper on Pl. spinulosum. I always check with Walle though I don't use him for identification.

My apologies again for all the delay.

Sincerely
Hannal Ch. Crossdal

DARTMOUTH COLLEGE
HANOVER, NEW HAMPSHIRE
Department of ^{Botany} Zoology

Sept 29, 1950

Dear Mr Scott,

Thanks for the very nice letter. I am glad that the Peedding Pond material arrived safely, but I'm very sorry that you didn't find your Staurastrum pulcherrimum. I have just looked up Cushman's papers, describing this new species. Apparently Glover Allen did the collecting, and no date or details are given. (Have you seen a copy of that paper? Would you like me to send you the copy of Rhodora in which it appears? I could lend you our library copy. It's Rhodora 7, 1905 - a small volume.)

I haven't a Wolfe available at the moment, but when I can I'll look up this St. novae-terrae and see where that comes from. If he means Newfoundland I can't get there as easily!

What a pity that the Phyc. Soc went flop at the Columbus meetings! I had thought

P.S. Thank. for offers to let me see if Florida algae. I'd like very much when I get going on identification again - but not now. I'll be busy all winter with latex and other things.

that I might go, but had a chance to go on a small botanical expedition to the Gaspe' and that seemed a better bet. Apparently it was! The purpose of our trip wasn't algae, but I went all equipped, hopefully - and got no freshwaters at all - hardly saw freshwater. The marines 'weren't too exciting but I got what was available, and the trip itself was wonderful! The printed program of the Meeting sounded very hopeful. I was afraid I was missing a lot.

Thank you for your offers to repay me for expenses, etc but I don't want any return for that sort of thing. It was just a lark. It gave my mother and me a nice day's drive, and me a very happy hour of earnest collecting.

I should have written long ago to acknowledge the second lot of latex, and report on progress. My latex prof. checked the first lot while he was in Europe, then mailed it back. He's back but it isn't yet (I have carbons, in case it gets lost). The second lot is about ready to be given him for checking. I'll try to get it all to you before the end of October. Will that be all right?

Sincerely

Stanual Crossdale

Oct 12 1950

Dear Dr. Crossdale,

In your last letter you wrote that you were going to look up St. novae-terrae Wolle. This name is as I wrote it, but it is wrong. What I intended to write was St. novae-caesareae Wolle, which I believe to be identical with St. pulcherrimum Cushman. Wolle's plant is illustrated in the second edition (1892) of his Desmids of the U.S., but not in the first edition (1884). There is a New Caesarea somewhere in Pennsylvania, so I suppose that is where he found it.

I should be very much obliged if you would lend me not only the issue of Rhodora in which Cushman's plant was described, but also as many as you can of Cushman's papers. These are listed by Krieger as follows:

- 1904a. Desmids from southwestern Colorado. Bull. Torr. Bot. Club XXXI
1904b. Notes on Microsterias from southeastern Massachusetts. Ibid.
1904c. Desmids from Newfoundland. Ibid.
1905a. Notes on the zygospores of certain New England desmids. Ibid. XXXII.
1905b. Contribution to the desmid flora of New Hampshire. Rhodora VII.
1906. New England desmids of the subfamily Saccodermace. Bull. Torr. Bot. Club XXXIII
1907a. Synopsis of the New England species of Tetanomorax. Ibid. XXXIV
1907b. " " " " " Pleurotaenium. Rhodora IX
1908a. " " " " " Microsterias. Ibid. I
1908b. New England species of Closterium. Bull. Torr. Bot. Club XXXV.

Also three papers by L. N. Johnson:

- 1894a. On some species of Microsterias. Bot. Gaz. XIX
1894-95. Some new and rare desmids of the U.S. Bull. Torr. Bot. Club XXI, XXII.

I do not possess any of these papers, and while they are quite old and perhaps out of date they are occasionally important for reference, so I should like permission to have photostats made of such as may seem worth while. Did you read Brunel's account, several months ago, of his rediscovery of Wolle's Pleurotaenium spinulosum, which had not been seen since 1882 or thereabouts? I also had found the plant down here and recognized it from Wolle's picture, so these old books still are useful once in a while.

Any time that you would like to see some of my desmids, just say the word. I have about 500 collections, with plenty of material; in fact I have sent samples of many of them to various desmidologists all over the world. Recently I had a request from Dr. Krieger of Berlin to send him some samples containing typical American Cosmaria, so that he could make some original drawings for the next issue of his monograph. A few days ago I received his acknowledgement, saying that my samples were among the best that he had ever seen, and he now has between 6000 and 7000 bottles!

There is no great rush about the Latin. I have three projects under way which are keeping me quite busy.

Sincerely yours,

Aug 1 1950

Dear Dr. Crossdale,

There is no great rush about the Latin. It has taken more than two years to get the paper to its present stage, so a few more weeks won't matter. So please take all the time you want, and if you think it desirable to send your translations to Italy for checking, please do so.

The amount you charge is perfectly satisfactory, and I will send you a check as soon as you return the material to me.

I had an idea that Dr. Taylor, as one of the big names in American algology, might have gone to Sweden for the Botanical Congress. No doubt he will have made the acquaintance of a number of European desmidiologists with whom I have had an active correspondence for the last few years, for instance Einar Teiling, Rolf Grönblad, Gunnar Nygaard, etc. By one of these curious coincidences both Teiling and Grönblad received honorary degrees of Ph.D. on the same day, though the one conferment took place in Sweden and the other in Finland. I wonder if Dr. Krieger was able to attend the Congress. He said nothing about it in his letters, the last of which arrived only a week ago, so I suppose it was impossible for him to leave the Soviet Zone of Germany where he is living. Only yesterday I sent him a box of 35 samples from my desmid collections, and a number of drawings of *Cosmarium* zygospores, for the new installment of his great work which will treat the genus *Cosmarium*. He indicates that he is beginning to have hopes of being able to publish it, which heretofore has appeared impossible.

Sincerely yours,

Marine Biological Laboratory
WOODS HOLE, MASSACHUSETTS

Jul 25

Dear Mr Scott,

Thank for the letter. I am glad to have it to do, and, as always, I am grateful to you for sending plates, which makes the interpretation so much easier. And, also, I will accept pay, since you so kindly insist, and my 'regular price' is \$1.00 apiece, if that is all right with you. In the long run that comes out to about a dollar an hour.

Dr Taylor is abroad: having attended the Congress he is now in Lapland, so I can't do much about getting his support or advice. He'll be back in Woods Hole after Aug. 20th but I'll just miss him.

How long can you let me have on this job? I'd like to get these checked by my later prof. but he's in Italy. He is glad to have me send them to him, and he is prompt returning them, but since it may take me a couple of weeks to write my first draught, the whole

thing might take a month. Can you give me
that long? Jerry's English is always hard to
put into latex and I'd hate to have them
go to you unchecked. I'll plug away at them
as fast as I can but I'll hope to hear from
you as to the deadline.

Sincerely

Hannah Crossdale

Aug 28 1950

Dear Dr. Crossdale,

Yes, it was I who asked you about Pudding Pond, and I shall be delighted to get some collections from that spot. Prescott told me a few years ago that Cushman had obtained some highly interesting desmids there, including one that I am particularly interested in, *Staurastrum pulcherrimum* Cushman, but which I believe to be *St. novae-caesareae* Wille. I hope that I can find some specimens, which would resolve the problem.

It was certainly very good of you to remember my request, and it was more than I expected for you to make a special trip. Hope you will not be offended if I offer to share your expenses. I am making offers to collectors in tropical countries to pay for desmid collections, so there is no reason why you should not be reimbursed, at least.

I am enclosing Prescott's descriptions for a new paper on Microsterias, and am sending blueprints of the eight plates under separate cover. Can you find time to do the Latin translations of the diagnoses for the new forms and varieties?

Sincerely yours,

August 25

Dear Mr Scott,

The latin is now in Europe, I hope, being checked. I hope I can get it back to you soon.

It was you who wanted collections from "Pudding Pond" (No. Conway, N.H.) wasn't it?

I got there yesterday and collected avidly. It was an all-day excursion, but my mother wanted to see the White Mountain and we combined objectives.

If it wasn't you who asked me I can't think who

it was but I've lost my
note about it, and thought
I'd better check before I sent
off the stuff - about 12 vials.
(pickled in the field)

It was a nice pond. Cuslis
would have spotted it from the
train and walked back from
No. Conway Station. It was a
half-mile or so in from the
nearest road.

As soon as I hear from
you I'll send it off (if you're
the man)

Sincerely

Harual Crossdale