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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.

Dec. 29 1957.

Dear Arthur,

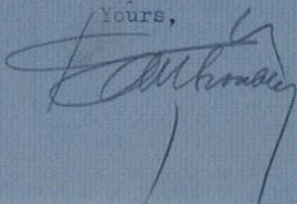
Today I have returned from my Christmas-~~is~~
Christmas trip to my sister. And so I found your ~~letter~~
letter waiting here.

As to *Mic. ceratofera* Josh. this name must
be accepted if Joshua has published it in this form.
Nordstedt had perhaps at his time permission to change
it, but according to the new Rules in Code 1956 such
a change is not allowed. See Art. 23 B.c. but cf. also
Art. 62 (on p. 41) the last example "*Ardisia quinquegona*
Blume (1825) which must not be changed to *A. pentagona*
although the specific epithet is a hybrid word! Both
Nordstedt's and Krieger's spellings must be rejected.
I have only a copy of Joshua's plates but no copy of ~~the~~
his text. If you have his text and if there is "*ce-*
ratofera" it must remain so.

As to the capitalized specific names it was
an explicit wish by the editor Hans Luther, because
it is the accepted use in *Acta Botanica*.

I am waiting for the rest proof.

Yours,



Jan. 9th 1957.

Dear Friend,

I Wish You

A Happy New Year!

It is almost a month since your letter which so far has got no answer. There has been some trouble about my health so the Xmas time has been a rather sad and unhappy time to me. It began with something depending on my high blood pressure and was something of a shock to me. I didn't know I was so old or my health so weak. It seems to be over this time, but I feel very tired and cannot work so late as hitherto and thus you have to wait still longer till I get ready with my work. I must try to sleep much more and to work the less. Sorry, but can't help it.

I have found the rest of your drawings and I shall send them simultaneously with this letter.

Of course I have often thought of the big rest of your drawing but I think there are a few things to be made before this: 1) the Sudanese desmids 2) the Brazilian desmids 3) the Greenland samples and some of my own collections from Scandinavia. I have been writing diagnoses for the Sudanese desmids and I certainly shall try to get ready as soon as possible. (I know that Deflandre is going to publish some material from Central Africa, I believe from Congo Belge) and it would be unfortunate for us to come just a little later!) Besides, Dr Rzoska has in his annual report published as nomina nuda *Micr. incredibilis* and *M. sudanense*. I have finished the typewrite as far as to the beginning of *Cosmarium*. Do you think I ought to send this part to you and Hannah (if she will still help us with the Latin?). I think the drawings are not needed and so I can have them inked by Miss Tikkanen. If you wish, I could send one drawing from every one species. This would perhaps be the best way? I should like to have a lot of photomicrographs reproduced too.

I have heard nothing whatever from Mr Prowse of late. I begged him to send living material to Kallio, but not a word in answer. Has he written anything to you?

How do you treat the exsiccate material? Nordstedt has proposed lactic acid, ~~carefully~~ cautiously heated just to the point when air bubbles are beginning to appear under the cover glass. I have rather good results from this method.

Fleur. ovatum from Malaya differs by long and sharp apical teeth. The peculiar side view of *Micr. foetida* could perhaps best be made visible on a micro photomicrograph? Has Mr Prowse sent any material to you?

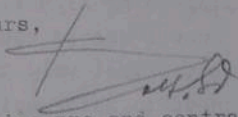
I would rather not accept *Actinotaenium* nor *Staurodesmus*.

Yesterday, Jan. 7th I got the first part of the 2nd proof of our USA desmids. This evening I rang prof. Lindberg and he promised that when some more sheets are reprinted, they are sent to you by air mail.

I enclose some photocopies of *Cosm.pardalis* from Cohn's exsiccate.

Tell me if Prowse has not sent you Malayan material and I shall send you some slides.

Best wishes,
yours,



I don't wish to continue arguing with Teiling pro and contra. There really is no use. I am going to join Ruzicka in a small paper where our points of view are declared. Dr Kallio too has promised to write upon this "cause célèbre!" He doesn't accept Teilings theories. I am very glad that he as a professional botanist will go on the same line. He will be able to formulate a more concise and more exactly founded rejection of T's theories.

I shall ask Ruzicka if it will be safe to send literature and letters from America.

The series of *Micrasterias ledouxii* - *M. simplex* - *M. sp.* - is very curious and really something of a puzzle. I should suggest that fig. 1, 2 and 4 belong to one species and fig. 3 to another, but ~~but~~ I dare not insist upon that opinion because too little is known about them.

Jan 18 1957

Dear Rolf,

When I received your pencilled note saying that you were not feeling well, I thought it was a recurrence of your stomach trouble or the arthritis, but now I see that it is something new, perhaps a heart condition as indicated by the high blood pressure. That, of course, is serious, and you will have to take care of yourself and make some changes in your way of living, which I think you will admit is not exactly what a doctor would recommend. We are all getting older every day, as the old song puts it. I shall be 69 next week, and it has been forced upon me that I can no longer do the things that I used to, not eat the rich and highly seasoned food that I like so well. The slowdown in your desmid work does not matter at all; there is no great rush about any of the papers.

I think it will be best for you to write Hannah and ask if she is able and willing to help with the Latin diagnoses. She wrote me just before Christmas, saying that her mother is better, but I imagine that she still requires a lot of care and attention. It would be quite necessary to send at least one drawing with each diagnosis so that both Hannah and I can see what we are doing, and if you will send the parts that you have completed we shall be that much further ahead. As to the Sudan drawings, I had hoped and expected to make these myself, and I am quite able to pay the cost of inking them, so that it would cost you nothing. Mrs. Perine has established a price of \$1.50 per hour for inking, which means about \$5.00 per plate on the average, and I think this is very reasonable. However, if you would rather that Miss Tikkanen inked them, that is quite OK. But I should like very much to do them, and perhaps it would be sufficient if Miss T. did your Greenland and Scandinavian drawings; I have not seen this material.

Mr. Prowse wrote me in December, thanking me for my suggestions on how he could improve his drawings, and he seems not to have taken any offense. He has not sent me any material, though he promised to do so later on. In his last letter he gave a sketch of a Pleurotaenium with deeply undulate margins, similar to those of *Pl. burmense*, but there are only 6 undulations per semicell including the basal and apical inflations. Judging from his sketch it is very close to, and perhaps identical with, the form shown in our Arnhem Land paper, *Pl. 2*, Figs. 9,10, which we named *Pl. burmense* var. *curtum* Scott & Presc., though the Australian plant has a total of 9 undulations per semicell.

In *Pl. ovatum* I have the typical form from Indonesia, and also have seen two semicells of another form of the same general shape but with longer and more pointed teeth. These latter may be the same as the Malayan form. I will try to make a photo of the sideview of *M. foliacea* with the peculiar sinusoidal curvature.

I have received your sendings of W. & W.'s West Indian paper, and the film of Cohn's Desm. Bongoenses. The latter did not include the plate and list of names; if you have the film of these I should like to have it, in order to enlarge all of the paper to a bigger size. In my examination of the Bongo material I found all except one of the desmids listed by Cohn. I saw only one specimen of *Micr. Schweinfurthii*, and that was so badly crumpled that it was quite unidentifiable or 'drawable'. According to the illustrations in Krieger's Monograph, there is very little difference, except size, between *M. Schweinfurthii* and *M. Thomassiana* v. *notata*.

Krieger makes Cohn's *Closterium isidis* a synonym of *Cl. validum*, but it seems to me very much like *Cl. Nalmel*; it is too stout for *Cl. Nalfsai* v. *hybridum*. I believe also that *Pl. elephantinus* might very well be allowed to remain as a separate species.

What do you think of *Cosm. Pardalis* after seeing specimens? It is quite different from what others have called by this name. The first thing that strikes you on seeing actual specimens is that the granules are arranged in horizontal rows instead of diagonal rows as is usual in *Cosmaria* of this type. Of course, since ~~there~~ the granules alternate in adjacent rows, there is also a subsidiary set of diagonal rows, but they are far less prominent. In the Bongo material there are several differing shapes of *C. Pardalis*, ranging from those with elliptical or somewhat reniform semicells to those that are almost rectangular. Cohn's illustration shows these two different shapes, and also the horizontal rows of granules, but there are actually more granules in each row than he shows, and that is another point of difference from W&W's Ceylon plants which they called *C. Pardalis*.

I also have seen lactic acid recommended for softening dried algae, but could find no detailed method. As you know, the available material was extremely small, so I could not afford to do any experimenting. Therefore I followed the only method for which I could find detailed instructions, namely the one described by Lagerheim. This is written in Swedish, but I could understand the gist of it. He used 1 part of fused KOH to 5½ parts of water, or 18%, mixed with an equal volume of glycerine. I thought it dangerous to use such a strong solution of KOH, because I have on previous occasions ruined some of my own material by using too strong caustic potash. So I prepared a 5% solution of KOH and mixed it with an equal volume of glycerine, and then followed the rest of his method. The result was not at all what I had hoped. The desmids were not restored to their original form, but remained shrunken, bent and distorted, as you will have seen from the slide that I sent you. Apparently you have obtained better results with lactic acid, and I would like you to tell me in detail your procedure, particularly what strength of the acid. Did you succeed in restoring the cells to their original shape?

The *Spond. desmidiforme* in W&W's West Indian paper is apparently the same as the Brazilian form shown in my drawings; they note the asymmetrical vertical view, but do not show the crenulate margins, and they show a different arrangement of the pores. But the latter details are very difficult to see, and further they may not, perhaps, occur in all specimens. W&W also note the resemblance to *Didymoprium* (*Desmidium*). I am inclined to agree that it is a *Desmidium*, because of the asymmetry, which is common in *Desmidium*, and also because of the raised apical 'processes' (if they can be called such) that are in contact with the adjacent cell. *Spond. Lundellii* I know only from Lundell's and Borge's illustrations, and from the latter it would appear that the plant might easily be identical with my Brazilian ones. Borge's description of *Sp. Lundellii* reads: "a vertice visis.....apicibus rotundato-productis, concavatione lateris dexteri unius apicis sinistricus alterius profundioribus quam ceteris". However, my Brazilian specimens have the "apicibus rotundato-productis" at only one end, instead of both, in vertical view. Borge undoubtedly knew the differences between the two plants, but he forgot to explain them!

The proof of our USA paper will probably come soon, and I shall read and correct it promptly, and return it directly to Prof. Lindberg, unless you wish it returned to you.

Recently I received three new samples from Sumatra, all from the same neighbourhood near Palembang. They contain a large number of very small desmids, mostly *Cosmaria* and *Buastrea*, some of them so small that they cannot be recognized when searching with my usual magnification of 200; I must turn the 900 power on them in order to see their shape. Some of them are new, and extremely difficult to study and draw because of their small size and the fact that there are few or no empty specimens to be found. Enclosed is a sketch of a very peculiar *Staurastrum* of which I have seen only one semicell though I have examined many slides from this sample. I do not know of any *Staurastrum* with the large, deep and very prominent pits that this one has. I will send you some of the material from these samples, and if you happen to find a specimen please draw it and get the dimensions of the whole cell.

With my best wishes for your good health,
Sincerely,

ROLF GRÖNBLAD
DR. PHIL.
KARIS, FINLAND

Jan. 28. 1957.

Dear Arthur,

As I told you I was rather seriously ill (thrombosis in arteria carotis interna) and I have been treated in a hospital in Helsingfors. I have been only one week at my home, so I cannot give you an answer to all your questions so far. I must also take good time for rest and sleep. But if you can have a little patience with me, I think everything will be OK again. I feel quite well, only just a little tired.

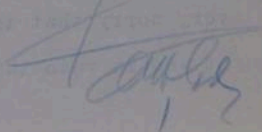
Yesterday, when I was talking to prof. Lindberg, he told me that the 2nd proof sheet was being sent to you. Please return it to me. I am very sorry that the plates are printed on both sides of the paper, but it was in vain that I tried to persuade those people who have the power

in their hands. It is a pity, very much so.

I have to say my most grateful thanks to you for all those very interesting "American Scientific " and now again for the third book by Fairchild which you so kindly have given me.

I have very much to write to you, but that will be in my next letter. Only, I can tell you that our Sudanese desmids will be printed in "Acta Botanica Fennica", a series printed by Soc. pro Fauna et Flora Fenn. It is a good series and not much smaller than "Acta Soc. Sci. Fenn." I shall immediately send the text to you and Hannah. The plates are already ordered from Miss Tikkanen. I have still money from my grant for this purpose.

More news next time! Best wishes, yours,



Feb 5 1957

Dear Holl,

Your illness must have been more serious than I thought, but it is good to know that you are now home from the hospital and on the road to recovery. Please take care of yourself!

Yesterday I received from Prof. Lindberg the page-proof of our paper, and this morning your letter arrived, just in time, for I should have returned the proof to Prof. Lindberg as he requested. I have just finished checking it, and it is enclosed herewith. Not having the Ms. I was able to check only for misspellings and printer's errors, of which there were still a few left. I call attention to the following:

Title page: Near the top something has been blocked out under the word "Scientarum", probably the number of the volume. At the bottom of this page the year should perhaps be changed to 1957; on the other hand the Society may have a reason for keeping it as 1956.

Plate VIII has been wrongly numbered XIII. Special attention should be called to this, otherwise it could easily be overlooked.

Page 13 "luetkenuellerii". Page 55 "luetkenuelleri". You once told me which of these is correct, but I have forgotten. According to the Rules the former is correct.

There are corrections on pp 5, 12, 16, 17, 18, 20, 27, 28, 41, 42, 43, 45, 50, 51, 53, 54, 60, 61, 62. The last few were caused by my having used the neuter form of the facies name, instead of the feminine form, when I was under the impression that "facies" was to be used as a taxonomical term.

On many pages the type has made a poor impression on the paper, notably on pp, 17, 29, 45, 49, and particularly the bold-face type. No doubt this will be corrected in the final printing, but perhaps the printer's attention should be called to it.

I am very much pleased with the appearance of the paper, and especially that the editor consented to the use of the bold-face type for the new taxa. It is somewhat of a pity that they could not be persuaded to print the plates on only one side of the sheets with the list of names on the facing page, but that cannot be helped. The plates themselves have turned out very nicely. The paper will be an important addition to North American Desmid literature, and I am quite proud of the result and my collaboration with you.

When you send the text of the Sudanese paper I shall check it quickly and return it to you. It is quite OK that you have ordered the plates inked by Miss Tikkanen, and I am sure that publication in Acta Botanica Fennica will be quite satisfactory.

You do not need to fear that I am impatient about anything. There is lots of time ahead, and I have plenty to keep me busy. So take your time and be sure to keep well.

Best regards from your friend,

Kans 6. 2-57

Dear Arthur,

Today I got 8
small slides for reading
samples & films etc. Thank
you very much!

I am sending you a ^{photostat} copy
of Cohen's *Form. Sargassum* the
plate & explanation (in original
size).

I am quite well, or at least
I feel so. But I must still go
to hospital for some Saturday, and
I am going to bed very early, at 23.00
every evening, so there is very little
time to write at present.

Best wishes, your

T. S. Cooper

I enclose some photostats of Cohen's
plates which you read out return.

Nov 8 1957

Dear Rolf,

By this time you have probably received from Hannah the first lot of descriptions of Sudanese desmids that I sent to her about three weeks ago. There were only a few small changes in the English, and I expect that she did not make any alterations in the Latin.

I call special attention to the fact that *Micrasterias zeylanica* was originally spelled *zeylanica* by Fritsch. Krieger probably changed the spelling inadvertently, because he cites Fritsch's name incorrectly. I was curious to know where the spelling with "z" originated, so I looked up the article "Zeylon" in the *Encyclopaedia Britannica*, where it is stated that the name Zeylon was applied to the island by the Portuguese, who were the first Europeans to settle there, in the early part of the 16th century, and that the modern name is derived from the Portuguese word. The article lists a number of plants, among which there are a fern and a tree which also have the specific name *zeylanica*. So Fritsch's name must be reinstated.

Thanks for sending the full size photostat of the plate for GO 13, Desm. *Bongocenses*, and also for the remainder of my American drawings, which came yesterday. A couple of weeks ago I received a reprint of the paper "Mikroorganismen der Wallace-Expedition", by Karl Mehre, whose address is Leonenstr. 21, Laura bei Bremen, West Germany, and another of his papers "Die Algenbestimmung während der um Bremen und Bremerhaven". The first one is of special interest to me, for he describes a lot of algae from the Philippine Islands, Celebes, Java, Bali, and Sumatra. A good many of his desmids also occur in my material from Indonesia and North Australia, and unfortunately he has named some new varieties which are also described as new in the still unpublished paper by Scott & Prescott on Arabian land. Of course his names now have priority, and I have written to Australia to ascertain if there is still time to make corrections in our paper.

Dr. Mehre seems to be familiar with desmids, so it is strange that he has been misled into making a form "nodosa" of *M. foliacea*. The black patches in his drawing are obviously merely small blobs of mucus exuded through the pores. I have seen specimens just like his, but more frequently all of the sinuata are completely filled with this brownish mucus, which has a distinctly granular appearance. The same thing occurs in other species of *Micrasterias*, and frequently interferes with observation, but I never show it on my drawings.

Everything is going along just as usual here. I hope that your health is continuing to improve and that you have suffered no ill effects from your illness.

Best regards, from

Mch 18 1957

Dear Arthur,

I have not yet received the first lot of Sudanese Desmids from Hannah. But there is ^{no} haste with them because I have not been able to do much on the rest of them. As I have told you I am strictly forbidden to sit up working late in the night. It is only a couple of hours that I have at my disposition ~~after~~ I have finished with my dentist's job. I am really very sorry but I must keep closely to my doctor's prescriptions. I feel almost quite well, but I am very tired - I think in consequence of the medicines, 8-9 pills every day - and this will have to continue for a year. Then, they say, the danger of a new thrombosis is eliminated with a certainty of 85%. I am nothing of a health pedant, but I have to obey!

Thank you for the beautiful book on the water lilies! Hannah sent me a very interesting and richly illustrated book on the different parts of U.S. You have, indeed, a rich and beautiful country with all kinds of sceneries.

I am glad to have the address of Karl Behre. I am surprized to have no referencies to his name. I shall write immediately and ask his copies. Apropos, have you any knowledge as to the Desmid Flora by Krieger? Not I.

I have been wasting (perhaps too much) time on a paper on the taxonomical principles in desmids which we are going to publish jointly with Růžická. I think it is needed, but R.'s text is very complicated and his German "very bad". Of his 20 printed pages I have made only 11. Kallio has promised his help, especially as to the question of radiation and Luther will be consulted too. Now I have sent ^{the} manuscript to Kallio and then he will come to Karis to have a conference. So I am free to continue with Sudan. I had a letter from Dr Rzoska asking when the paper will be finished. Of course this is somewhat difficult to answer, but I hope the printing can begin before the summer. Miss Tikkanen is already inking the plates, of which I have seen one (also accepted by the printer and by Prof. A. Palmgren, the president of Soc. Fau. & Flor. Penn.)

Thanks for the samples from Sumatra!

With kind regards, yours

* This is not the same prof. P. Palmgren who is secretary of Soc. Sci. Fenn.

ROLF GRÖNBLAD
DR. PHIL.
KARIS, FINLAND

April 24 1957.

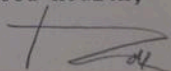
Dear Arthur,

I just got your letter, so I will immediately write to you to tell you how glad I am hearing about your recovering. Do not work too much with the desmids. I know!

I also can tell you a good thing: the Sudanese desmids are finished and I am going to send the text to you and to Hannah for revision. I am myself very glad because Dr Rzoska has asked me again when the paper will be printed. I am not sure the paper can be printed before this summer, but I shall try my best. Then of course the manuscript must be returned by air mail.

I have made a few alterations to which I hope you will consent. A few "new varieties" I have made to formae without names, because the species was too much variable to justify every small difference with a name. Of course you may tell me if there is something that you cannot accept.

Best wishes and good health,



April 29 1957

Dear Roif,

Your letter of April 24 has just arrived. Thanks for your good wishes. The doctor now allows me to go downstairs (12 steps) once a day for not more than two hours, and has also said that I may drive my car for short distances so that I can attend to some necessary things; so tomorrow I shall go outdoors for the first time. I am feeling much better, though rather weak from being in bed so long, and my hand and fingers tremble so that I have some difficulty in drawing. However, all these symptoms will disappear in a couple of weeks, I am sure.

It is good to hear that you have finished with the Sudanese desmids. If you have not already sent the text, please send it to Hannah first, then she can send it on to me without much cost, and I will return it to you by airmail. In this way Hannah will not be put to any unnecessary expense. Prescott told me he had not heard from her for some time, and was afraid that things are not going well for her and her Mother. I also have no news from her recently.

From Bourrelly I have received a reprint of a paper by Krieger & Bourrelly, Sonderdruck aus: Ergebnisse der Deutschen Venezuela-Expedition 1952, Band 1. Deutscher Verlag der Wissenschaften, Berlin. Pages 141-195, with 12 Plates. No date of publication is given. The paper is entitled "Desmidiées des Andes du Venezuela". The material was collected at high altitudes, from 2500 to 4200 m., and the desmids give me the impression of being more similar to those of the USA than to those of Brazil. There are a few novelties described, and I want to call your special attention to one of them named Quadratum Bessneri n. sp., which is very close in both shape and size to one of the Sudanese desmids shown on my drawings 356, 57, and 3. 67-70, for which I had suggested the name P. diphaericum. In case you have not received Bourrelly's paper I have copied his drawings of P. Bessneri and a variety var. quadracapitatum, also his description.

I have not yet received the reprint of Tailing's paper on Asymmetry, but I saw it in typescript and also in proof, and I made most of the same criticisms that you do. In fact my criticism was so blunt and to the point that I feared he might be seriously offended. He was, in fact, considerably surprised, but took it in good part and even adopted one of my suggestions in his rather complicated nomenclature for the geometry of asymmetry. In my handwritten letter of last week I told you that I did not give him permission to publish M. sudanensis and that I told him that he could not do so without having obtained your permission. I have now referred to the letter that I wrote him, and find that the statement underlined in red is incorrect; however the part underlined in blue is quite true. I do not consider that this is one of my desmids out one of yours and Prowse's. The illustration in his paper was apparently copied by Hannah from one of your photomicrographs, or from a tracing made by Tailing from the photo.

His whole paper is not of much value, according to my view, but is simply a collection of curiosities, and the conclusions that he draws from them are not warranted, e.g. the rejection (!) of Onychonema. I also told him, after seeing the typescript, that the fact of his having to rely on illustrations instead of seeing real specimens, had led him to make some identifications that seemed to me very peculiar and actually incorrect.

I have heard nothing more about the completion of Krieger's Monograph by Dr. Gerloff, and Prescott told me that he has no news about it either, though he wrote me about a year ago that he was going to write "Chlamydomonas Gerloff". Now he

does not remember whether he wrote to Germany or not!

This is all I can write just now. I have to copy a description of Bourrelly's new *Mastrun*, and then my two hours will be up.

Best regards from

Dear Arthur,

April 2nd -57

I only write a few words just to tell you that I have received the first part of the Sudanese desmids from Hannah. She had sent the parcel already Febr. 13th ! It would ,perhaps ,be wiser to send by air mail ~~X~~ I have today talked with Hans Luther who had been at the Soc.F.F.Fenn. meeting and it was decided that our Sudanese paper should have a priority in printing the Society's papers. Very good. I must try do work more, but as you well know it takes very much time!

We have not decided what we shall do about the ~~qu~~tion of the authorship? I think we cannot really quite omit Mr Prowse's name? But could we have us both as authors and write "in collaboration with Mr P.??? Tell me what we have to do! It is a somewhat delicate question!

yours,

X) Perhaps you could arrange it.

When Cosmarium is finished I shall send them to you. You will see that I have made a few changes to our arrangements. I have tried to make two new taxa. Many thanks for 1) the photomicrographs, 2) the Scientific American and other sendings.

10. iv. 1957.

Dear Arthur,

I have got a copy of Botaniska Notiser 1957.fasc.1 and there is a paper by our friend Teiling on asymmetry in desmids. As is usual in Teiling's papers there are a lot of points which I don't like and others which I cannot agree with. In first place I don't like his "new terminology" which is mostly quite unnecessary and only makes texts complicated and more difficult to understand (if you don't know his terminology).

Another matter of some importance is, as I should believe, that Tg. has not seen himself the material from which he is making his conclusions. That can never bring anything good. Even the best of pictures and drawings are not the same as to have a look at the cell itself.

It seems to me quite useless to argue about such things as "polar lobe" or "end lobe".

Then he is surveying ^{the/} "Micr. mahabuleshwariensis section" as he is calling the "mixtum compositum" of M. mahabul., americana, bergani (only a variety of M. mahabul.), hardyi - and alata! tropica, robusta, - muricata! nordstedtiana, anomala! What have these in common with M. mahabul.? That I cannot see. Only a person who is not at all acquainted with these species and who never has seen them could bring them together into one "group".

On p. 54 he is talking on Xanth. pulcherrimum Playf. and saying that it probably is a Micrasterias. But he knows nothing of Xanthidium bifurcatum Borge, which is very near to M. anomala as we have seen.

Curiously enough Tg. proposes to make an Euastrum of M. moebii and not vice versa a Micrasterias of Eu. turgidum. He has never seen anything of them and has no idea whatever of them.

The "radiosa-section" is too a bad mixture.

"Staurodesmus" seems to be his pet cockhorse. I am sure it will not be generally accepted. (though Hannah has accepted it, and some of his Swedish pupils).

Why Cosmarium obliquum should be made a separate genus Nothocosmarium I cannot see. I have seen vertically quite symmetrical formae of this species, why then make a genus? Also Staur. cordatum Gay is a quite common monstrosity among Staurastra of no importance.

Onychonema has not the same connecting processes as Sphaerosma and Onychonema must not be rejected!

I was not quite glad to see the first published figure of *Micr. sudanensis* in Tg.'s paper. Did you give him permission to publish it? I did not.

p.71. *Staur. inaequale* cannot be synonym to or a variety of *S. leptacanthum* since ^{there are} 6 basal processes and 3 apical ones so that (in vertical view) the basal angles are bifurcate; in *S. leptacanthum* the basal angles always are ending into a process and there are always more apical processes than basal ones.

On p.75. Tg says that *Phymatodocis irregulare* must be considered constant asymmetrical. Of course, but all *Phymatodocis* species are asymmetrical.

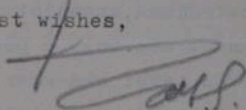
p 77 I cannot see "a near connection between these sections and the *oscitans* section" (meaning *mahabuleshw. sect.* and *radiosa sect.*)

p.78. *Onychonema* is not to be rejected, since the apical emergences of this genus and *Sphaerosozma* are not identical in their position.

I must frankly say that I was not too glad after having seen and read Tg.'s last paper. It has in my opinion very little of real value.

Excuse me, please, if I have been too bad!

Best wishes,



I have finished *Cosmarium* of the Sudanese desmids and am sending them to you by air mail after a few days.

I have just got your last sendings
The Natural History, American Scientist, 2 and a whole lot more
My best thanks for them!

ny
the

May 6 1957

Dear Arthur,

Unfortunately I already have sent the Sudanese text to you, but you can send it first to Hannah if you think it better so.

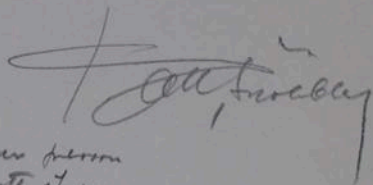
I shall send your new drawing of *Cosm. bicorne* to Miss Tikkanen for inking. I believe I have in my text made our Sudanese specimens only a form of Borge's species thinking it probably may be the same, because Borge did not see the membrane structure (according to his text). I thought it perhaps was unnecessary to make a new taxon. But you may make such changes in my text as you find right and useful.

I enclose a "Foreword" to the Sudanese desmids which I thought necessary and which was also suggested by Dr Luther. If you don't find it suitable you may rewrite it as you choose. I believe my English is not quite good and I had some difficulties in finding the proper expressions.

I have not got Krieger & Bourrelly's paper. Mr. B. is very slow in sending his reprints and I have usually to beg them, I don't know why. It seems to me that *Eu. Gessneri* is quite identical to our Sudanese species, isn't it? So you may make the changes necessary in the text.

Dr Rzoska has been to Lake Ambadi and he promised to send new material.

Wishing you good progress in your health, yours



Our friend Tuttle is a rather sour person and rather difficult to deal with if you do not contact to every whim by him. He is manipulating freely and coarsely with such taxa that he has never seen. That cannot give reasonable results.

Foreword by R. Grönblad.

The rather complicated history of the present paper came about in the following way. Some years ago Dr. Edna Lind of Kampala sent me, at my request, some samples of desmid-bearing material from Uganda. (These will be dealt with in another paper).

She had contact with the Hydrobiological Research Unit at the University of Khartoum, which is under the direction of Dr. J. Rzoska, and at her suggestion Dr. G. A. Prowse wrote and asked if I should like to receive for identification material from the Sudan. This offer was gladly accepted, and as the desmids appeared to be quite peculiar in shape and of unusual richness I asked my friend Mr. A. M. Scott of New Orleans, whom I knew as a skilled student of tropical and subtropical desmids, especially, if he would like to cooperate in this work, to which he agreed enthusiastically, and some of the Sudanese material was sent to him. In the summer of 1955 Mr. Scott stopped in London on his way to Finland, and there he met with Dr. Rzoska and Dr. Prowse who happened to be on leave at the time. ~~From~~ Dr. Prowse handed his desmid drawings to Mr. Scott who brought them to Finland and we were able to use them in our identifications.

The plates have been inked from the drawings of A.M.S. and R.G. by Phil. Mag. Toini Tikkanen, to whom the authors are grateful for skillful work. (Could her name be written thus: Miss Toini Tikkanen, Phil. Mag., ? This would be the the English ~~way~~ and American way, and would indicate that the artist is a lady).

The English text has been revised by Scott, and the Latin text by Dr. Hamah Crossdale, to whom the authors are greatly indebted.

The photomicrographs were taken by Grönblad, and may be considered at the original types of the new taxa.

In addition to the above I think there should be a short description of Lake ~~Ambadi~~, giving its latitude and longitude, since it is not shown on most maps. This could best be done by Prowse, and I suggest that you write and ask him to write it. I am under the impression that although Prowse sent you the samples, they were actually collected by Rzoska, and this should be stated in the text, if it is true.

May 13 1957

Dear Rolf,

I have sent to Hannah those of the Sudanese descriptions that required checking of the Latin diagnoses, with enough money to pay the airmail postage back to Finland. The others I am returning direct to you, under separate cover. There were very few changes required in the English text.

Enclosed is your foreword, which I have rewritten in a slightly different form. There should be some description of the habitat, and if there is not enough time to write to Frowse for it, you could copy Rzoska's short description on pp 17-18 of the 2nd Annual Report of the Hydrobiological Research Unit, which I assume you have.

Yes, I think that Euastrum Gessneri Krieg. & Bour. is identical with our E. disphaericum from Sudan. All the Euastrum drawings and descriptions were returned to you by Hannah, so you will have to make the change. The citation will be:

Krieger, W., and P. Bourrelly. 1956(?). Desmidiacees des Andes du Venezuela, in Ergebnisse der deutschen limnologischen Venezuela-Expedition 1952. Band I, Gessner, F. and V. Vareschi, Editors. Berlin. 1956(?).

E. Gessneri is described on pp 148-149 of Bourrelly's paper, and figured on Pl. III, Fig. 24.

Have you heard anything about the printing of our USA paper? I have just heard from Australia that at long last they are working on the botanical volume of the Reports of the Arnhem Land Expedition, and that they hope it may be published by the end of this year. But I take this with a large grain of salt!

Glad to say that my convalescence is going on nicely. I am being very good and obeying all the doctor's instructions; haven't smoked a cigarette in more than five weeks, and strange to say I don't miss them too much.

Best regards from

ROLF GRÖNBLAD
DR. PHIL.
HELSINKI, FINLAND

17.5.-57.

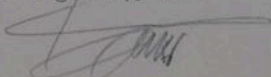
Dear Arthur,

Today I received your letter and part of the typescript. Thanks. Our Sudanese paper will have an introduction written by Prowse, which you have seen, but apparently forgotten. It is 4 sides long with all data required. I have also written to Dr Prowse telling him that our paper is nearly finished and ready for print. The same I also told Dr Rzoska. Still I have to make a list of literature and the magnifications must be put in.

As far as I know our USA paper is quite ready for print and will be printed as soon as ^{the printer} has finished some other paper which they are printing. So I think everything is going well.

Glad to know that you are recovering and that you are no more smoking so much. I myself have tried but without succeeding.

With best regards, yours



18. 51 - 57

Dear Arthur,

I can tell you that I have got my copies of our joint paper and your copies are sent to you. But we must decide to whom you will be sending copies and to whom I shall send. I have the list that you sent me long ago and I have marked with a sign my correspondents. (I am sending this list separately).

Concerning the question about *Onychonema* ..var. *perlatum* and its dimensions I think my measurements must have been wrong. So I have deleted them. (From a photomicrograph I found nearly the same dimensions as yours).

You once sent me a photocopy of Cholnoky's paper. (There was a *Euastrum* like our var. *Lindae*). But can you tell me where it has been published? I need it for the list of literature.

The editor of our Sudanese paper will be Hans Luther and his wishes are that specific names which are genitives of names of persons (e.g. *Borgei*) should be written with capitals. So I have changed the orthography accordingly.

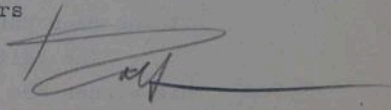
I - XXIII

The plates are now inked by Miss Tikkanen and I have only to write the explanation of the plates. The rest of the text is finished. I shall meet Dr Luther in Helsingfors June 29th and then we ^{shall} see if the printing can begin already during the summer. I hope so.

Thank you most heartily for your kindness in sending me all those journals which not only I myself, but even my friends, have enjoyed very much indeed. I wish I could send something to you?

Last Sunday, when I was in Helsingfors (to the Concert of the Amsterdam Concertgebouw Orchestra - which was splendid!) I saw in the library of the Limnological Institute the last number of "Hydrobiologia" which contains Krieger & Scott, and a paper by Irenée -Marie. There was something of a contrast between the drawings! I hope to get a copy when you get your set.

With my best wishes, yours



You once sent me a catalogue of new hardy "sub-zero" roses. Now I have got 5 different sorts of them. And I hope they will endure our very cold winters.

June 29 1957

Dear Rolf,

On my return from East Lansing I found your letter of June 18, with the good news that the reprints of our USA paper are on the way to me; they ought to get here about the middle of July. Also it is nice to hear that you have so nearly completed the Sudan paper, which with its 23 plates will be an important addition to the desmid literature on Africa. Enclosed I am returning the memorandum in which you asked for the magnification of some of my drawings. These magnifications are approximate, but you can check them very easily if you have not forgotten the small lesson that I gave you in the operation of the slide-rule. You simply measure the length of the drawing in mm, and divide it by the measured length in microns, then you have the magnification.

Cholnoky's paper was published in Oesterr. Bot. Zeitschr. 101(1/2): 118-139, presumably in 1954, since I found the reference in a list of phycological literature for 1954, published in the Bulletin of the Phycological Society.

In the current issue of Revue Algologique for March 1957 there is a very long bibliography of African freshwater algae, compiled by Alan J. Brock and H. Kufferath with the assistance of W. Ross and Patricia A. Sims of the British Museum. The list covers 24 pages, and there is a further listing by Regions, i.e., Algeria, Angola, Azores, Bechuanaland, Belgian Congo, etc. I have not yet had time to wade through it, and I expect that there are few papers on desmids; nevertheless it is quite valuable and you should try to see it in Helsingfors or Turku. If you cannot find it I will lend you my copy so that you can have it copied on microfilm.

As to the magazines that I send you, they cost me nothing but the postage, and I would rather send them to you that give them to persons who are not particularly interested in science. I subscribe to them and several others, and I could not keep them without building an additional room on my house in which to store them. It gives me pleasure to know that you and your friends enjoy them, and there is nothing that you need do in the way of reciprocating.

No doubt you will have received by this time reprints of my papers on Peru and Indonesia that I sent you about three weeks ago. Hannah has completed publication of her paper on Alaskan desmids, and I have just received another installment of Mirano's series on Japanese desmids, dealing with *Cosmarium*, with some nice drawings including some very rare species.

I spent eight days with Prof. Prescott in East Lansing. On one day, a Sunday, we visited the Mich. State Univ. Biological Station at Gull Lake, some 50 miles distant, and had a very pleasant time. The other seven days I worked from 9 am to 6 pm, with 45 minutes out for lunch, literally wading through the thousands of sheets of his iconograph, each of which has from 1 to 20 desmid illustrations pasted on it, trying to find a match for some of the wierd critters on my drawings. When I found a picture that looked something like mine, I pulled out the sheet and attached it to my drawing, and after I had completed two or three genera Prescott and I went through them again and made the determination. It was a tiresome job, and at the end of the day I had a severe backache from bending over the desk for 8 hours. Even so, I just managed to finish the Indonesian desmids, of which I had 1032 drawings comprising more than 400 taxa. In *Arthrodesmus* and *Xanthidium* I have set aside my drawings of certain species, such as *A. incus*, *A. subulatus*, *A. curvatus*, *X. antilopaeum*, until I receive copies of our SE USA paper, so that I can see what you have done with them.

When you devised the name *Cosmarium sgrabo* no doubt you thought it was unique, as I did. But there is nothing new under the sun, and this name was used by Bruhl & Biswas, 1926. p. 289, Pl. 8. figs. 85 *sec.* I found an entry for it in the iconograph, but Prescott does not have an illustration of it, so I don't know what it looks like, though there is little doubt that it is different ~~from~~ from our plant. Hannah is now at Woods Hole, and I have written her to see if she can find it in the library there and make a copy of the picture and description. Perhaps we shall have to revert to my original name "cockeyedium".

While I was there Prescott received a shipment of about 60 vials of algal material from Dr. Marshall Laird, Dept. of Parasitology, Univ. of Malaya, Singapore. From the list of habitats, some of which had pH of 6.5 to 7.0 it appeared likely that they might contain desmids, so I managed to find time to examine some of them. In 10 vials the only desmid I found was a small *Closterium*. Aside from this I saw exactly one specimen of *Scenedesmus*, one of *Merismopedia*, a few blue-green and green filamentous algae that I could not name offhand, and some *Spyrogyra*. Some of the poorest stuff that I have ever seen. Evidently this doctor does not know where to look for algae.

Among my Indonesian desmids there is one which has the same structure as *Staur. columbetoides* var. *intermedium* Krieg., Sunda, Taf. XV, Fig. 21, though in my plant the processes are gracefully curved and almost vertical as in your *St. Ginzbergeri* from Brazil, though the processes are much shorter and relatively stouter than in the Brazilian plant. The basal view of the semicell agrees exactly with Krieger's figure though he does not show the supraaxillary spines in the basal view, and also it agrees exactly with my drawing of the basal view of *St. Ginzbergeri* which I have seen in Sioli's Brazilian samples. So there is no doubt that Krieger's plant and yours are varieties of the same species, and that my Indonesian plant is a different variety. So according to the rules of priority I am afraid that the name *St. Ginzbergeri* must be relegated to synonymy as a var. of *St. columbetoides*. I am enclosing sketches of the Indonesian and Brazilian plants, and I wish you would give me your opinion.

In our previous papers Prescott has written the descriptions, but this time he is so exceedingly busy that he does not know when he could do it. So I shall have to undertake the job, which as you have remarked is a difficult and tiresome one. I have written a few descriptions for some of my smaller papers, but never on such a large scale as this one will be.

Another desmid that I found in the iconograph is *Cosm. obsoletum* "maximum" *Berges.*, 1890, which I also have in my own library, though I had overlooked. This seems to be identical with our *Cosm. Ralfsii* var. *spinigerum*, though the chloroplast is shown in a somewhat different fashion. Of course it does not belong to *obsoletum*, but it looks as if we shall have another correction to make.

Well, that's enough bad news for this time. Will write again soon.

Sincerely,

July 8 -57.

Dear Arthur,

Thank you for your two letters. Here are answers to some of the questions.

- 1) I have not received reprints of your Ichthyodontum paper, nor Krieger & Scott. Have you sent copies to me?
- 2) in addition to the 23 inked plates to our Sudanese paper I have made 7 more plates of my photomicrographs. (so there will be 30 plates).
- 3) thanks for the magnifications! and the title of Cholnoky's paper.
- 4) I have got from Kufferath the bibliography of African frw.algae.
- 5) I have not got your papers on Peru and on Indonesia! Hiranos's paper on Cosmarium I have received.
- 6) It was a most curious coincidence that "Cosm.strabo" already was used. I have not the paper by Brühl & Biswas 1926 (I have only one paper by Biswas and the figures were very poor!) What shall we call it???
- 7) I am sending you a slide with my Staur.Ginzbergeri from Brazil. I think my drawing is correct. The common Brazilian form has quite smooth processes, as I showed you on a photomicrograph. The supraisthmal spines I believe are correct in my drawing, thus unlike Krieger's and yours fig. In sample 154 there was a form with serrate margins of the processes. You will have to judge by yourself what to do when you have seen the slides.
- 8) *Cosm.ocoletum* subsp. *maximum* Börges. 1890 = *C. maximum* (Börg.) W&F. is referred to in our text! (on pag. 22) And I still hesitate whether it is better placed in *C. Ralfsii* or in *C. maximum*. It is to me of some significance that in the same sample *C. Ralfsii* was found, and further our

specimens are more like *C. Rafisii* in shape than Børgesen's and West's figures. The differences are, however, not very obvious.

Your news did not hit me very severely, indeed! It is of more importance to me that you apparently are well again and able to work.

We have had no summer at all till this day: very cold and rainy all the time. In the evenings not much more than 10°C. which is really very little for our warmest time. My holidays will begin July 15th, so I still hope for better weather.

I enclose a list of correspondents you sent me long ago, and I have marked those who are my correspondents too. Furthermore I send a list of all my correspondents. How do you propose to arrange with our copies? I propose that you send to all American desmidiologists and I send to all Scandinavian. I have already sent to: Thomasson, Skuja, Ruzicka, Teiling, Sommani, Tholli, Behre, Bourrelly. Tell me what do you propose? *(Luther)*

Do you know Kuno Thomasson: Notes on the plankton of Lake Bangweulu (1957). - Nova Acta Reg. Soc. Scient. Upsal., Ser. IV, vol. 17. There are numerous drawings (not very good) of desmids. I have referred to some of them in our text. (e.g. *Staur. Fuellebornei*, *St. richianum* Thomass. = *S. leptocladum* var. *simplex* Fritsch & Rich) &c.

Best regards,

Luther

If you send to the same I hope you will add my thanks for her drawings!

HOLF GRÖNBLAD
DR. PHIL.
KABIN, FINLAND

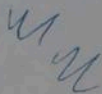
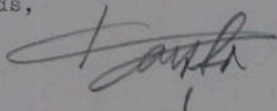
July 12 1957.

Dear Arthur,

Two days ago I received your papers on desmids from Peru and on Ichthyodontum. Thank you very much for these beautiful contributions.

I have examined my material from Brazil and as far as I can see the basal teeth are correctly depicted in my fig. 208a. The processes are perfectly smooth at their margins. (I have seen specimens with very delicately serrate margins, but it may be another forma or var.) I have made two slides (the liquid is a solution of CH_2COOK) acetate of potassium I believe the English name is?). I hope you will find some specimens! I am very curious about your opinion. Maybe that *S. columbetoides* v. *Ginzbergeri* is better than a specific rank, but the original figure of *S. columbetoides* in W&W Ceylon looks quite different having no basal teeth.

Best regards,



July 12 1957

Dear Rolf,

A few days ago I received from O/Y Merikito A/S in Abo, a Bill of Lading and Shipping Notice advising that a case of scientific books weighing 75 kg (!!) had been shipped to me by the Finska Vet. Soc. of Helsingfors, by the steamer "Ste shola". The vessel's agents here tell me that the ship is due to arrive about Aug. 3rd, but I had experience with this steamship line when we used to import steel from Europe, and I know that the ships are always several days to a week late in arriving here, because they call at Havana and/or Vera Cruz before coming to N.O. After arrival it will require another week for unloading and customs examination before I shall get the shipment, so I hardly expect to receive the books before Aug. 17th.

Just now I am working up my drawings of the Indonesian desmids, and it would be of great help if I had a copy of our USA paper. Prescott and I made determinations of nearly all of them, but in *Arthrodesmus* and *Xanthidium* I want to see what you did with these genera before making a final decision on some of the puzzling forms. Also there are some miscellaneous desmids that I wish to compare with my USA plants.

Would you therefore be kind enough to send me one copy of the paper by airmail? If you get it off promptly I ought to get it by July 20 or 22, some 3 weeks before the box arrives.

I have not received an invoice for the books, and I must know their value in order to make out the import declaration for the customs authorities. Will you please find out the value and let me know? As I have written you before, I do not wish you to pay for them.

Among the Indonesian desmids there are also some that we found in the Sudan material, on which our determinations were somewhat uncertain. If you have the time to spare I would like you to refer to the following of my drawings from the Sudan and tell me what you finally did with them:

Drawing S-146. *C. tinctum*, subarctatum, ~~globosum~~ v. minus???
S-160. *C. retusiforme*?
S-192. *C. zonatum* v. pyriforme?
S-218. *A. phimus*?

Concerning the last one, I have an *Arthrodesmus* from Indonesia similar to the one shown on drawing S-218, but with a flat apex and the lateral angles extended horizontally. ~~Arthrodesmus retusiforme~~ It is somewhat like your *A. pilosporus* v. *retusum* from Brazil, which made me think that it might be the specific form, but Prescott has no illustration of it. It is in *Witttr. & Nordst. Exsicc. 1883, No. 558*, sub nomine *Staurastrum pilosporus*. I sent my sketch to Hannah at Woods Hole, and asked her to look it up in the library there, but my letter missed her by a few hours. So if you have the original illustration of *Staur. pilosporus* I would like you to copy it and the description and dimensions.

Also I should be very much obliged if you would send me one copy of the Sudan paper by airmail, as soon as it is available. I had thought of enclosing a \$5 bill to pay the postage on them, but concluded that you might be offended if I did!

So long, and best regards,

July 23 1957

Dear Rolf,

This is just a few lines to tell you that I have received your letters of July 8 and 12, with the two lists of our respective correspondents. Also your three Brazilian slides came today, though the cardboard box was crushed and one of the slides broken.

The airmailed copy of our USA paper also came this morning; many thanks for your promptness in sending it. I am delighted with its appearance, - a beautiful piece of printing. Also I must thank you once again and most sincerely for the great care that you have given to its preparation. The result of our collaboration is highly satisfactory; much more so, I believe, than if Prescott had made the identifications and written the descriptions.

The paper will help me a great deal in trying to separate and distinguish some of the difficult groups that I am now struggling with from Indonesia, such as *Arthrodesmus* and *Kantheidium*. Further I have a series of varying forms of *St. cyclanthum*, which must be carefully compared with our series from Florida. There are, of course, many others peculiar to the southeastern Asian region, but even with these my American forms show some relation.

I have barely had time to glance at your slides. The broken slide still had about one-half of the cover-glass adhering to it, and even on this damaged slide I found several specimens of *St. ginzbergeri*, and also on one of the other slides. These all have perfectly smooth processes with no suspicion of teeth or serrations, and as nearly as I can see from the front view the supraisthmic teeth are as you have drawn them, i.e. in groups of 2 teeth together, or small trifid verrucae. However, on the third slide, just half-an-hour ago I saw the first specimen of this *Staurastrum*, and it seemed to have very sparse and minute teeth on the arms; also I think (not sure) that the supraisthmic teeth are different, more like those on Giolli's Brazilian specimens. I shall try to find more examples tomorrow.

A few days ago I received some new samples from Sumatra, in which the small form of *St. ginzbergeri* (or *St. columbathoides*) is fairly plentiful, including some "dwarf" forms with very short arms. I will send you some of this material by airmail, and I think you will have no difficulty in finding empty saccells which you can try to balance on end for the basal view.

There are evidently four different forms involved; *St. columbathoides* W & W; *St. colbathoides* var. *intermedium* Krieg., with which my Indonesian plants can probably be identified; *St. ginzbergeri* Grönb. with smooth arms and trifid verrucae; and a Brazilian form very similar to *ginzbergeri* but with serrate arms and different basal teeth. It will require further study and consideration to decide what to do with them, and whether there is sufficient difference between all of them to maintain two species.

Will write again in a few days.

Sincerely,

July 23 1957.

Dear Arthur,

Today, after a rather long delay, I am going to answer your questions as best I can. I have been finishing the "explication of the plates" and it took a rather long time because I had to work out the magnifications of so many of your drawings on which the magnification was **not** indicated. I used your calculating stick but I had to control the result by means of division! I hope there are no bad mistakes!

I have sent by airmail a copy of our US paper, and hope you have received it. I sent another copy, not by air mail, by mistake, with a dedication to Hannah, hoping that you put your name on it and send it further to Hannah.

I don't know what may be the value of the copies you got from the Vetensk. Soc., because I have not paid my own copies, and I too have got no invoice. I think they are sending an invoice sometime in September?

Your drawings I have identified thus:

- S-146 Cosm. gonicoides, forma. (because there was another form of the same species, more like the specific form)
- S-160 Cosm. norimbergense v. depressum
- S-192 " zonatum var. obversum, n. var.
- S-218 Arthrod. pilosporus var. retusus Grönbl. (Brazil)

The Sudan paper will not be printed before September. All people who have to decide about the printing (and also the more skilled type-setter¹⁵) have their holidays just now.

I have sent you 3 slides with material from the Brazil collection by Ginzberger and I hope you will find some specimens of Staur. Ginzbergeri in them. I enclose a photo and a pencil drawing: there you can see that the processes are perfectly smooth, not serrate. The supraisthmal verrucae are with 3 small teeth. To me it looks rather much different from West's original figure. But perhaps it can be made a var. of S. columbetoides?

Best wishes,

Do you wish to have
the inked plates of US descr.
returned?

HOLY GRONLAD
DE PUBL.
NARIN, FINLAND

See the other side! →

Aug. 4. 1957.

Dear Arthur,

First I wish to thank you for the cigarettes you sent me. This time the customs was frindly: I had not to pay any duty. I had been already one week without smoking but I immediately fell into sin again.

From the postcard by Mrs Krieger I see that there is no one to continue the desmid Flora. It is a pity, but it is a giant work and I am afraid there is no such person who is capable and willing to do it.

Now at last I have finished the Sudanese paper. I should propose the name quite short: "Sudanese Desmids". by RG, GAP and AMS. There are 200 sheets of typescript 23 plates + 6 plates photomicrographs. (Can it be abbreviated "photo" in the "Explication of the plates"?). As you see from the enclosed "Contents" I have RG and AMS as authors of the Desmids. Is it correct or what do you think. We have made all the identifications so I think it is not needed to have Frowse's name in this connection. So you and I become the authors of the new taxa.

Can you give me the the full title of your paper on desmids from Arnhem Land? Where will it be published, paper's name and vol.? publ. year? 1957?

Best wishes,

H. Gronlad ⇒

I have sent further copies of Desm. USA to:
Margalef, Skuja, Nygaard, Messikommer, Heimans, Kossinskaja, Fott.

I have got your sample from Lundström
containing *Stem. columbianus*. I had a quite
superficial look at the *Stem.* from your sample
and I think this is without doubt = *S. columbianus*.
I don't know what to do with *S. grayi* var. ?

Aug. 12. 1957.

Dear Arthur,

I think your suggestion as to dividing our correspondents in two parts is a good one. But how is it with our previous papers? 1) Amscottia and 2) Staur bibrachiatum? I have sent only a few. Have you a list of your sendings? Thank you for the changed addresses. I have not sent to Kurt Förster, but I shall do it. Has he published anything? Oscar Kopetzky I thought was dead but I shall send to him. (I am not quite sure about which addresses I have sent to the latest papers, I have been a little careless with my correspondence and it is very bad, indeed!) *Bejnard is not probably dead!*

Cosmarium strablos instead of "strabo" will certainly be good. But where is the new name to be published?? As an appendix to our Sudanese Desmids? or in some of your papers? or in Bull. Phyc. Soc. Amer.?? It cannot easily be published in Acta Soc. Sci. Fenn. because our paper was the last one in that volume. What do you propose?

Brühl & Biswas I believe to have seen (not very good?) but I have no copy. So if you take a copy for yourself perhaps you would kindly take one for me too?

I am not quite satisfied with Thomasson's drawings. He has a manner that is not sufficiently exact.

Skuja's new work I have not seen as yet.

To me Euastrum latum - neolatium looks more like a Cosmarium but that is of course only a matter of personal opinion.

I shall try to send St. vinzbergeri material to you - but there is only very little left of the material. Of course pure water is the best medium for desmids but but the potassium acetate does not dry up quite thoroughly. If it has evaporated you can always put a little water to the slide and the cells are again OK. But I shall send in a small vial.

It is very curious that I always have read the name Cosmogonioides but now I see I have been in error! I had identified also your sl46 as a forma of this species. Of course it is much different from typical species but think of all those ^{very} different forms that we have put together in C. zonatum. But if you are not satisfied with such an arrangement we have time to change the identification. But: C. staurastroides has a median swelling and C. emarginatum has too, while C. tinctum and C. subarctum have convex apex. What would you suggest?

Sl60 I have called C. norimbergense v. depressum (right-hand) and C. retusiforme (left-hand). In the text I have pointed out that the vertical view does not agree with W. & W. whose figure probably may be incorrect.

It is indeed somewhat like *Spond. pulchellum* which has a much more flattened vertical view and closed sinus (Cf. Gröbl. 1921, VI:5-7). and which usually occurs in great quantity in very acid waters between *Sphagnum* and you can always find at least a few short filaments. I should not think our Sudanese species is a *Spondylosium*.

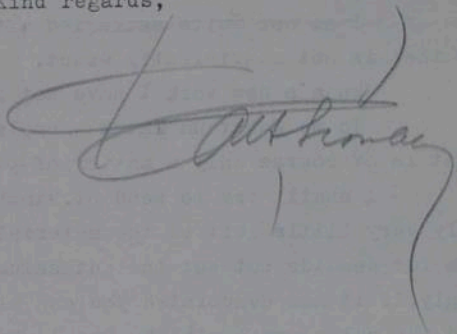
I shall return your inked USA plates by usual mail.

Have you got Ruzicka's last paper? There he has followed the "Code of Bot. Nomencl. 1957" (The paper is "Die Desmidiaceen der oberen Moldau" Preslia, 1957). There he quite correctly writes: *Cylindrocystis brebissonii* Menegh. ex De Bary 1858 var. *brebissonii*. *Nétrium digitus* (Ehr.) Itz. & Rothe in Rab. 1856 var. *digitus*. *Closterium acerosum* (Schrank) Ehr. ex Ralfs 1848 var. *acerosum*. This is quite in agreement with the latest Intern. Rules, but it is, indeed, very laborious. In other words: there is no specific form, and must not be, but a species is composed of equivalent varieties and formae. I asked Dr Luther and he said it is quite OK.

Don't forget to give me the full title of your Arnhem-paper.

I am glad to hear that your health is OK. I am too much better but still under treatment and I feel somewhat tired and cannot sleep. I cannot work very much with desmids and that is unfortunate.

Kind regards,



Aug 13 1957

Dear Rolf.

Hannah's copy of our USA paper came, and I immediately signed it and sent it on to me, with your and my thanks for her valuable and valued assistance in its preparation. The steamer bringing the box with the rest of my copies is not due here until Aug 18th, having been "re-scheduled", at least that's what the agents say.

Your title "Sudanese Desmids" is very suitable, and the authorship RG, GAP and AMs is OK. As to the authorship of the desmids, I should be very happy to have my name joined with yours, if you think Prowse will not object. I don't think he would be offended at being omitted, for he certainly could not have identified them himself, while I believe that I was of some help in the identification.

I forgot to tell you that I had a letter from Prowse a couple of months ago, in which he said that as there is no monograph on the desmids of Malaya, as opposed to other nearby regions, it seemed a suitable time to undertake one, and he proposed that I should collaborate with him and you in such a work. But this would be a project requiring several years, and I wrote him that although I should like very much to work with his Malayan material, I felt it necessary to decline. I explained that I have enough desmid work on hand to last me for at least 5 years, by which time I shall be 75 years old, if I live that long; and at that age I doubt that I shall be able to do much work of any kind.

Your contents page is OK except that the word 'inclusive' should be 'including', and 'exaltation' should be 'explanation'. I would write 'photomicrograph' in full if it occurs only once or a few times; if you use it frequently it might be shortened to 'photo'. Will it not be necessary to add Mesodermiaceae after Cosmarograceae? I believe that you have *Netrius* and *Cylindrocystis* among the genera.

The full title of my Australian paper is:

Scott, A.M., and G.W. Prescott. Some freshwater algae from Arnhem Land in the Northern Territory of Australia. (in press 1957).

It will be published, with other papers, in the botanical volume (? Vol. 3) of the official report on the Arnhem Land Expedition of 1948, by the Melbourne University Press. That's all the information I have at present. I am expecting to receive the first proof for checking soon, so there is a slight possibility that it may appear in print by the end of this year, but I would not bet on it. This is the second of my papers to be published in Australia; I shall have another some time in the future, but it will not go to Australia, although it will deal with Australian desmids. Too much hubbub and delay.

In the last Sumatran samples that I sent I have seen several examples of the twisted *Cosmarium* of which I sent a sketch in my last letter. You can probably find one or two specimens on each slide, but it is so small that you ~~may~~ will have to use a 20x ocular for searching. It is probably not related to *Cosm. staurastroides*, which also is fairly common. The latter looks very much like *Cosm. tinctum* until you see the top view with its central protuberance. There's a lot of other small to minute desmids in these samples, some of them extremely difficult to see and draw and identify.

Best regards from

3

Aug 28 1957

Dear Rolf,

The big box of books finally was delivered to me today, all in excellent condition and beautifully packed, also 10 extra sets of the plates. I had a short argument with the customs appraisers, who wanted to charge me 10% import duty, but I finally convinced them that they should be admitted free of duty.

Since it is agreeable to you, I will distribute the paper to all correspondents on our combined lists in the countries that I listed starting with Great Britain, and will leave it to you to send to the other countries from Scandinavia to Switzerland inclusive. I sent series of our *Amscottia* and *St. bibrachiatum* papers to all the correspondents on my own list.

Kurt Förster has not published anything as far as I know, but he tells me that he has spent a great deal of time in ~~making~~ copying desmid illustrations for his iconothek. He writes only about once a year, and only when he wants something, such as reprints. However, he did send me three slides containing some of my USA desmids (of which I had sent him samples). The slides were made by F. Eckert, of Ingolstadt, Germany, who apparently is a professional preparateur. They are labelled "Desmidiaceae, Typenplatte mit 10 Formen", and the desmids are beautifully stained and neatly arranged in rows like the diatom type-slides that I have seen. They are quite unusual, and if you would like to see them I will lend them to you.

Förster,
The extra plates of our USA paper should be sent to Teiling, Messikhäuser, Ruzicka and Bourrelly, who have iconotheks; possibly you may know of others. Rather strangely, Hannah says she does not want the extra plates; long ago she started tracing illustrations instead of cutting them out of photocopying them, and finds that they file more compactly this way. She was highly congratulatory on the new paper; also Teiling had some high-flown compliments, and he said nothing about *Actinotaenium* or *Staurodesmus*!!

The correction from *Cosm. strabo* to *C. streblus* could very well be made as an addendum to the Sudan paper, which will be the next to appear. I intend to correct *E. latum* to *E. neolatum* Krig. & Scott in a short paper that I am writing for publication in *Reinwardtia*, but that will not appear until next year.

As to the small *Cosmarium* with twisted semicells, I have come across the name *Cosm. tortum* Lagerh. & Nordst., in Wittr. & Nordst. Exsic. #1486 and Fasc. 35, p. 16, Figs. 1-3. I do not have this nor does Prescott, but I believe Teiling has the complete set, so I have asked him to look it up and copy the illustration and description. From the name it seems possible that it might be our plant. I will let you know what he says.

I think that *C. retusiforme* is OK for the left-hand sketch on my Sudan drawing Sl60, though perhaps it should be qualified by adding "Fa." My vertical view shows a faint median swelling somewhat like W&W's, though the cell is proportionately thicker, so I don't quite understand your meaning when you say that their drawing probably may be incorrect. Were you thinking of the vertical view of ~~*C. subretusiforme*~~ *C. subretusiforme*, which is immediately adjacent on their Plate 62?

My corresponding desmid from Indonesia is smaller, 11.5 x 9, thus agreeing more nearly with *C. subretusiforme*, to which species I have assigned it but made it a new variety, var. *crassum*, because the vertical view is broadly elliptical, not with sub-acute poles as W&W show and describe.

Yes, Ruzicka sent me his last paper, and I also do not like the method of repeating the specific name as a varietal name to indicate the type, though I have been told that it is correct according to the Rules. Elmer Hughes used this system in his paper on Canadian Glosteria. Zoologists have used it for a long time, the classical example being the name of the giant sun-fish; Mola mola mola!! Just what this repetition means I don't know.

Thonasson has sent me his Bangweulu paper, very interesting. As you say, his drawings are not very good, in some cases hardly sufficient for certain identification, and not suitable for critical comparison with those of other authors. I don't see much reason for making a separate species of *St. leptocladum* var. *simplex*; it has the two offset apical spines characteristic of var. *cornutum* Wille, so I think it should remain in *leptocladum*. His illustration of *Spond. nitens* f. *tensa* agrees with Turner's, but I have specimens from Indonesia with isthmuses (isthm? isthmae?) of widely varying lengths in the same filament, and in the longest isthmuses you can see the cross wall if you look very closely, indicating that the elongated isthmus is simply a stage in cell-division.

Yesterday I got Prowse's paper "An introduction to the desmids of Malaya", a good beginning which ought to arouse the interest of at least a few students. But what a pity that he has rushed into print with so many wrong identifications! He ought to have sent his sketches to you or to me for a check first. Although I told him that I could not participate in a large project, I offered to help him in the identification of his drawings as far as I can. So I shall send him a corrected list of the desmids in his paper; fortunately most of them are identifiable. His Fig. 9-k, "Phymatodocis" is quite curious; it is, of course, a 4-radiate version of *Streptonema trilobatum*. I have seen plenty of 3-radiate specimens from Indonesia and a few from Australia, but no 4-radiate ones, so this is a new facies. But though he says (p.55) that the "wings" may curve in different directions in each semicell, I would swear that his end view is incorrect, and that the uppermost lobe should be bent to the left instead of to the right.

Later, Aug 30. Just half-an-hour ago I received Teiling's reply to my enquiry about *Cosm. tortum* Lagerh. & Nordst. He has copied the illustrations, from which it is certain that *tortum* is quite a different plant from the twisted *Cosmarium* from Sudan and Sumatra. He could not find in his iconothèque anything closer than *C. subarctoum* v. *minutissimum* W&N, and *C. asphaerosporum* v. *strigosum* Nordst., neither of which agrees with my plant. Teiling suggested that it could well be made a new species, but before doing so I want to study it some more, and compare it with other similar small *Cosmaria* from the same collection.

Best regards until later.

HOLF GRÖNBLAD
DR. PHIL.
KARIS, FINLAND

Sept. 18th 1957.

Dear Arthur,

It is already 3-4 weeks since I answered your last letters. The Sudanese desmids are in the hands of Hans Luther who has found a lot of details that must be corrected: a letter or a word omitted, some wrong referencies to the plates or to the literature &c. He is coming to Karis this week and then we will have to go through the whole pile once more. One or two drawings will be added and a few photomicrographs will be changed into better ones.

If you find it correct to omit Prowse's name as author to the desmids we will do so, because it would be very clumsy to have 3 authors to the new taxa, and really Prowse has done very little good for the identification of species. I think we can call our paper "Sudanese Desmids" without adding "including Gonatozygaceae and Mesotaeniaceae" because the English term "Desmids" generally is supposed to include them.

I have not found the small twisted *Cosmarium* in your "Sumatra 149" but if you decline the name of *Cosm. goniodes* var. or f., it is possible to make a change. Tell me, which is your opinion?

Extra plates I have sent as you propose (except to Kurt Förster to whom I have not sent any copies). *but I can do it if you wish!*

Is *Cosm. streblos* correct? I don't know the Greek grammar!

Your fig. S 160 left. I had compared it with West's fig. 19 which is *C. subretusiforme* and which has an entirely different end view. The size of our species is almost equally small. But the end view is different. However West's original drawing has not so acute poles. *C. retusiforme* has the double size (22-24 u). What do you think of it?

Our paper will be set by the printer at the beginning of October.

When trying to find the twisted *Cosmarium* in Sumatra 149 I found a desmid with "parthenospores" (see enclosed drawing), vegetative cells with plate like chromatophores. I have not studied the cell membrane, so I don't know if it belongs to the saccoderm or placoderm desmids. It is like *Clost. pusillum* v. *laticeps* Grönbl. (1942, I:10-11). (But see also *Roya anglica* in Ruzicka 1957:II:38!)

The fall has begun with rain and storm, cold and darkness!

I enclose a clipping from a newspaper "Nya Pressen" with an "inter view".

Best wishes, yours

Sept 20 1957

Dear Rolf,

The pictures from the "Nya Pressen" bring back good memories of the many hours that we spent together in your upstairs study, surrounded by piles of drawings and books. I can read only a few words here and there of the Swedish text, just enough to give me a general idea of what it is about; I get the impression that it is fairly well written, for a newspaper interview, with not too many mistakes in the scientific language. If you have extra copies of the photo showing you with the book in your hands, I should like to have one for framing.

I can understand the trouble you have had with the Sudan manuscript, for Prescott and I have had the same kind of mess with our Arnhem Land paper being published by the Melbourne University Press in Australia. They have had at least three persons checking, rechecking and double-checking the typescript, and each of them has been ultra-finey in discovering small mistakes in punctuation, abbreviations of names and periodicals, dates, etc. A few days ago I received the galley proofs which had been read by two persons, with one set of corrections in ink and another in pencil, and I found a hundred more printer's errors. I have previously asked the editor, on two occasions, to correct mistakes that I made, five years ago, in the spelling of C. Regnesi, St. Sebaldi and pseudosebaldi, and St. Wildemani, which I had spelled -ii, before you corrected me. They have made other corrections, but not these, so I have written them a strongly worded letter giving the reasons why the original spelling of these names must be maintained, as you explained them to me, and have told them that unless these changes are made I shall have an errata slip printed and inserted in the reprints stating that the editor has refused to make the changes even after repeated requests. Perhaps this will make them sit up and take notice.

The title "Sudanese Desmids" is OK, but I think you had a list of contents in which you listed Desmidiaceae, and I thought that perhaps Gonatozygaceae and Mesotaenaceae should also be shown to make it technically correct.

Long ago I suggested that it would be clumsy to have 3 names as authors of the new taxa, and for that reason and also to prevent any hard feelings on Prowse's part I suggested that you alone be the author. It is quite true that Prowse did not play any part in the identifications, and that I was able to help to some extent in the determinations. However, I am quite willing to forego my share of the credit in order that P. may not be offended. But if you think you can explain to him in such a way that he will not take offence, I should naturally be glad to have the authorship shown as Grönblad & Scott.

I take it that you have sent our USA paper to Kurt Förster, and I would like you to send him the extra plates also, because he is compiling an iconothèque. I have more of the extra sets of plates than I need, so I can then if you are running short. Enclosed is a list of the names to whom I have sent the USA paper; I may add a few more from time to time.

The Greek word streblos is an adjective in the masculine and/or feminine gender. The neuter form is streblos, so the correct name would be Cosm. streblon, or it could be Latinized into streblum. (Cf. Eu. diplostauron Skuja, from staurós).

Cosm. subretusiforme is OK for the Sudanese desmid, with your explanation of the different vertical view from W&W's Fig. 19. My Indonesian form is a little larger and even thicker, and I am naming it var. crassum var. nov.

I am quite sure that the small twisted *Cosmarium* from Sudan is not related to *C. goniodes*. It is not at all 'gonioid', or angular, while W&W's Madagascar plant has the upper angles cut off as if with a pair of scissors, also the latter is twice as long as wide, while the Sudan and Indonesian plants have the length and width almost equal. I have re-examined the Indonesian material, and have found in the same sample some specimens of what I take to be an untwisted form of the same plant, since they are of the same size and shape. They are quite like *Cosm. tinctum* except that they are colorless, except one specimen in which one semicell was faintly yellowish, and that the apex is slightly retuse. W&W, Mon. II-169 say that colorless individuals are sometimes met with. I asked Telling to copy for me the illustration of *Cosm. tortum* which proves to be something quite different, but he informs me that retuse specimens of *C. tinctum* have been reported by Borge (Algenfl. Schw. 5) and by you (Tvärminne I) but I do not have either of these papers. You might compare them. Yesterday in checking the proof of ~~my~~ the Arnhem Land paper I noticed *C. tinctum* listed, and on looking up my original drawing of it I find that it is almost exactly like the untwisted Indonesian specimens, with a retuse apex and yellowish wall. So with this additional evidence I feel reasonably sure that the twisted plant from Sudan and Indonesia belongs to *C. tinctum*, and I suggest that it be named *fa. tortum* *fa. nov.* (Arnhem Land 6:22).

I also have seen the desmid with "parthenospores" that you sketched, but did not know just what to make of it. I intend to study it some more, and shall try to stain it.

For the last three days the weather here has been quite chilly, down to 16°C, and in fact just an hour ago my wife made me turn on the automatic heater for the first time. All I had to do was to turn a switch! But we still have another 10 days or so of 20 to 28° weather before it turns permanently cool.

Best wishes from your friend,

P.S. I sent our USA paper to "Helen Jean Brown" on your list. She was married in 1935 and is now Mrs. Stanley W. Bromley, as I learned when she wrote me a slightly peevish letter complaining that we had not listed her paper on Desmids of the SE Coastal Plain 1930. I replied in a placatory tone, saying that our bibliography contained only the papers specifically referred to in the text, and that for the previous literature on this region we mentioned in our first paragraph the paper by Herman Silva giving a summary of all papers up to 1948, including hers. I have not heard from her again, though I asked her to let me know if she is still interested in desmids.

Rolf Grönblød
Karis
Centralgatan 86

Dec. 19th 1957

Dear Arthur,

This was the very last letter to you for this year. I write because today I got the rest of our Madagascan Desmids as proof sheets. I shall send to you by air mail tomorrow, this. One or two days later I am sending the plates so you need not return these sheets before you have got the plates so that you can control the drawings and photos. I see that they have put "1958" as printing year at the end. Sorry because I don't know at which moment Bournully will have his paper printed. (I believe I have told you that Boy is working on African Desmids from Congo - according to Taylor an extensive paper - but ran away in Helensborg when Ty proposed that we should talk about our African desmids!) However I don't know anything at all about Bournully's work and it may appear at any moment.

Perium variegatum W & W was transferred to "Dyoplasia" by Lückenhöfer in 1905 (later he abandoned this obscure genus and in Krieger's Desm. Fl. pag 242 Krieger says that "Boanicht ist ein Cosmopolit". I don't know if such a statement is legitimate, but I believe so.

Next year you will get Stenja & negativos. (also Netherlandia)

I suppose you are right as to Coman goniodes. I have only a photo copy of Wad's Madagascan and the explanations to the plates are copied by means of typewriter (by myself). If you have the original paper by Wad's and there is goniodes then I believe you. (I see from my Greek book that -odes and -oides are equally good but of course the original spelling must be maintained. (I wonder why Wad's didn't use -oides?!))

I should be very much interested in the Montreal
Congress but I don't know if there is money for such a purpose, but
I shall try - or I think so at this very moment. As you know my
health is not "first class" - I am not quite as I was before my
illness, and I don't know if I ever shall get restored to my health.
So you see the whole thing depends on good or bad health, money or not money.

Dr Luther said that of course the Soc. Sci. Term will not claim
anything for your copies. But he ~~will~~ talk with the Secretary
Mr. Donner. The late prof Federley who was secretary when you were here
died with the papers and letters on this very question in his pocket
so there has been some confusion as to your dollar, they didn't know
about them at all before I told the story. But I think the matter
will be cleared up very soon and so I shall tell you!

Likewise you have nothing to pay for Miss Tolson's listening
because I got money from the government for that purpose.

Thanks ^{to} your wife and to yourself for kind greetings

I hope you can read this? It is late in the night
and I am in bed writing this so that it can be sent
to you tomorrow.

Yours truly

Carl G.

(I have not yet read through
the proof nor the letters.)

7, 6192



x 890/1

Oct. 28. 1957.

Dear Arthur,

I see from your letter that it is a rather long time since I have written to you. But you must forgive me, because I have again very bad luck. Of course I got the "Asiatic" influenza which ended in a pneumonia - not very bad, but serious enough, I had to lie in bed and then I was brought to a hospital "Mjölbollstad Sanatorium" (where I am working as dentist once a week). This is all past and I am again working, but still I am rather tired. Then to your letter:

1) As to the spelling of specific names, the question seems somewhat obscure. In the new "Code" there are new Rules which are not quite the same as the previous ones. The new Code has -ii in such cases as specific names derived from Wildeman, Kjellman &c, and incorrect spellings should be corrected. In spite of such new rules I do not like to change the names to Wildemanii, Kjellmanii, Sebaldii, Regnesii. I continue to write as the authors did with one i. They are derived by the authors from latinized names like Wildemanus, Kjellmanus &c, not Wildemanius, Kjellmanius &c. Reisch has in his earlier paper Staurastrum Sancti Sebaldi - derived from Sanctus Sebaldus. On the other hand Ducellier has Euastrum Luetkemuellerii which is not correct and, according to Hans Luther must be changed into Luetkemuelleri. Delpontei is more correct than Delponçii. The makers of the Rules of Botanical Nomenclature apparently think the rules are more important than all Botany.

2) The title Sudanese Desmids is short and good and the old English word "Desmids" embraces "Desmidiaceae, Mesotaeniaceae and Gonatozygaceae" so the title was accepted by our very critical friend Hans Luther!

3) I think you have done much more than Frowse as to the identifying of our Sudanese Desmids, so there is no question about your authorship whatever. Maybe Frowse will be offended but it would have been too clumsy to have 3 author's names. I hope F. is not a pettyfogger.

4) I am sending to K. Förster a copy + extra set of plates. I have not yet sent my copies because I have been ill and out of all work.

5) I have changed our "strabo" into streblon

6) I have also changed Cosm. goniodes as you wished.

I believe the English equivalent of "docent" (used in Scandinavia and Germany) is "lecturer". I have omitted the word "docent".

Our paper is now delivered to the printer who has been asked to make everything ready within this year, or at least so much that the printing year can be 1957. Of course you will get a proof sheet. Yours,

← VEROP
Digitized by the Hunt Institute for Botanical Documentation, *London*

I enclose a photo taken by Mr Ridderstad. I did not get any copies of the photos in the newspaper. Perhaps these will do?

Quite recently, a few days ago, I got from Teiling a paper on plankton algae. As usually there are some things I do not like. But I don't wish to make him angry, so I shall remain quite silent. (*Cosmarium boreale* Børgesen, 1901, VII:10) is not the same as Teiling's species which has an acute sinus while B's *boreale* has an open sinus with parallel sides. Schaarschmidt's figures are all very poor.

I am now trying to finish my Italian desmids.

What about the Sioli's desmids from Brazil? Do you wish to make a paper by yourself or shall we once more collaborate?

Best wishes,

Many thanks for "Amer. Scientific" and "Natural History"!

Thomasson tells me that he has found both Microc. rubanensis and Microc. lateralis in material from Bangweulu! Our paper was finished in proper time!

Is not your 70th birthday in this year? Please tell me when it has been or when it will be!

ROLF GRÖNBLAD
DR. PHIL.
KARIN, FINLAND

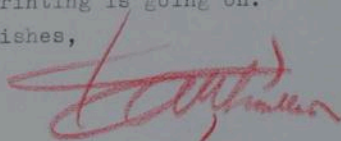
Nov. 4. 1957.

Dear Arthur,

Simultaneously with this letter I am sending to you the first proof sheet of our Sudanese paper. If you please, return it immediately after having read it. If you think we can make the proof sheet reading here and if you think it not quite necessary to send to you the proof sheets, then I shall not send the rest of them when I get them, because it will save a lot of money and much time. But, as a friend, I beg you to tell your opinion quite freely. I know, there will perhaps be some small corrections which we (Luther & myself) will overlook so I know it would be safer to have every sheet sent to you. However, that is for you to decide.

I am very glad that the printing is going on.

Kind wishes,



Nov 9 1957

Dear Rolf,

I am returning under separate cover the first proof sheets of our Sudanese paper, and as you will see, I have made a few corrections in blue pencil, that apparently you had overlooked. I feel, therefore, that it would be better if you will send all the proofs to me for checking, because I seem to have a special facility for noticing errors in spelling, though not always in my own work.

On the title page I see you have suggested that the three authors' names be printed one below the other, and I agree with this especially as I think that Frowse's name should be printed in full, Gerald A. Frowse, instead of with initials only, since your and my names are printed in full.

I also received your letter of Oct 28 earlier this week, but have delayed replying to it because I am copying some sketches of Indonesian desmids on which I wish to ask for your help, most of them *Arthrodesmus* forms similar to those on which you worked for our USA paper, but with some differences. For instance there is one that corresponds to your *A. subvalidus*, but it occurs in the same collection with one pyrenoid and with two in each semicell.

I am very sorry to hear that you have been ill with the Asiatic 'flu, but relieved to know that you have recovered. From past experience with the 'flu, though not the Asiatic strain, I know that it leaves the patient feeling quite weak and tired and it requires some time for complete recuperation. My wife and I have had protective shots of a special serum that was developed for the Asiatic variety, so I hope we shall escape, though the serum is said to be only 60 to 75% effective. The epidemic is going strongly in this country; several million cases have been reported, but with comparatively few deaths, and many more cases are expected when the really cold weather sets in.

A couple of weeks ago I obtained from Holland a copy of the 1956 Code of Nomenclature, and I see that several of the rules and recommendations have been changed, and I have found out what a 'nomenclatorial variety' is; for the present, at least, I intend to disregard the rule that requires you to write, for example, *Euastrum holocystoides* Nordst. var. *holocystoides*, to designate the specific form. The only ones who can possibly know whether a new variety of this plant has been created in the last 20 years are those who, like Prescott, maintain a complete and up-to-date card catalogue.

But I rather like the rule which says that the older spellings of specific names with a single -i should now be corrected to -ii, and vice versa, and I believe you will eventually have to accept it, as you have already accepted the permission to omit capitalization of specific names derived from personal names. After seeing the new Code I had to abandon my argument with the Australian editors and let them spell *C. Regnesi* with two ii's, but I insisted that *Sebaldi* and *pseudosebaldi* be spelled thus because of your statement that they are derived from *Santus Sebaldus*. I believe you told me that he was the patron saint of gardening or horticulture. Is this correct?

This is all for the present, as I must hurry to the postoffice with the package containing the proofs.

Sincerely,

Nov 12 1957

Dear Rolf,

Many thanks for the excellent photos by Mr. Ridderstad; the larger one is just what I wanted, and in a short while it will be framed and hanging on the wall of my microscope room.

I shall be 70 years old on Jan 25th 1958, and Leiling's 70th birthday is in March next year, I don't know the exact date. I have not yet received a copy of his paper on plankton algae.

It is very curious that Thomsson has found the two strange *Microsterias* from Lake Bangweulu, which is a long way from Lake Ambadi, and judging from the map I should think it is in quite a different kind of terrain. However, I note from his paper that one part of the Lake is swampy, with Cyperus papyrus like L. Ambadi. I wonder why he did not publish them and am very glad that he did not. Perhaps he was scared to publish them because of their highly unusual shapes, or again it may have been some new collections.

Of course I wish to collaborate with you on Sioli's Brazilian material, there has never been any question about that. But it will be the middle of next year before I shall be able to do any more work on it, and there is still a good deal more to be done. I have recorded and drawn all the more interesting forms, but I am sure that there are many more of the common or garden species to be found. Especially I have not yet made a thorough examination of his last lot of samples from the Rio Negro region. These are poor in desmids; nevertheless they have to be recorded. Recently Sioli sent me reprints of two papers on the limnology of the Amazon region, and I suppose you have received them also. In one of them he has quoted from one of my letters a brief account of the desmids that I saw on preliminary examination of a batch of samples from the Belem-Braganca region.

Prescott is preparing for another visit to Ecuador, and this time it must be something of an expedition, for he is preparing to ship a motor-truck down there, either from New Orleans or New York. I wonder who pays for these journeys; probably some Government department. He is so busy with the arrangements and with his other multifarious duties that he has no time for correspondence, and all I have been able to get out of him for the last three months is a couple of postcards and a request for shipping information about the truck, though I have asked him some questions regarding our joint paper on Indonesia on which I am now working. If he leaves from New Orleans I shall of course see him for a short time and then perhaps I can get him to clear up some of the questions.

Best regards from your friend,

Nov 12 1957

Dear Rolf,

I am writing this as a separate letter concerning the enclosed sketches of Indonesian desmids that I mentioned last week, because you will undoubtedly need some time to study them. There is no great rush; if I get your answer by the end of the year it will be time enough, for I have plenty to occupy me in the other genera. You do not need to return the sketches; they are lettered in blue pencil, A, B, &c, corresponding with my originals, so all you have to do is to refer to them by letter. Of course, Prescott ought to help me with them, but as I have explained he is so busy that I don't know when he could get to it; but I would rather have your opinion because you have worked out some very similar series of *Arthrodesmus* in our USA paper.

Sketches A-D. *Arthrodesmus curvatus* Turn. I think there is no question as to the identity, but the width with spines is much greater even than Turner's *fa. major*, and greater than any other dimensions that I can find, e.g. W&W and Bernard. Bernard says that *A. curvatus* has only one pyrenoid per semicell, corresponding with my specimens. Do you think it desirable to make a new *fa. maximus* for them.

Sketches E-H. These also belong to *A. curvatus*, though sketch F approaches the shape of var. *burnense* W&W., and most of them are of the larger size mentioned above. All of them have extra spines on one or both semicells, and because I have seen about a dozen specimens in the two samples marked P and M&P, it occurs to me that perhaps they may indicate a tendency of evolution into *Xanthidium* or *Staurastrum*, though there is no species in either of these genera of the shape of the lower semicell in sketch G.

Sketches J-K. This form with its more nearly rectangular semicells shows a decided resemblance to *A. maximus* v. *epilepticus* Scott & Grönb., which has 2 pyrenoids instead of 1 in the Borneo specimens. I think this is worthy of a new varietal name and I have proposed var. *kalimantanum*. Kalimantan is the new Indonesian name for the island of Borneo, or at least for that portion of it under the control of the Indonesian Government.

Sketch L. This corresponds closely in size and shape with *A. convergens* forma in Scott & Grönb., Pl. 13, Fig. 12., and also with var. *curta* Turn., though the latter is considerably smaller. I rather doubt, however, that either the Javanese or Louisiana plants have any close connection with the type of *A. convergens*, and I think that their assignment to this species is simply a convenient way of pigeonholing them.

Sketches M-N. In shape these are very much like your *A. subvalidus* from Brazil, though somewhat smaller. But note that in the same collection you can find specimens with only one or with two pyrenoids per semicell, the latter seeming to be more plentiful. What is your opinion about this, and would you assign both of them to *A. subvalidus*?

Sketch P. This is somewhat like *A. validus* (W&W) Sc. & Goid. 1957, Pl. 11, Fig. 9, but with shorter spines and a more convex apex. I had thought of calling it a var. *minor* of *A. arcuatus*, but this species has 2 pyrenoids.

Sketches Q and R. Can you help me with these? I cannot find any *Cosmarium* species just like them.

Many thanks in advance for your assistance.

Dec. 2 1957.

Dear Arthur,

To your drawings I have not much to say, merely following suggestions Fig.A;B;C;D. They look very much like *A.maximus* v. *ecplecticus*, only smaller and with a single pyrenoid. Of course *A.curvatus* too is very much like it. But where does the borderline go? When we made the taxonomical arrangements in our US desm. I had the feeling that it was all very clear to me (and to you). If we keep the number of pyrenoids as distinctive, then *A. maximus* does not fit, and they must be called *A.curvatus*. But I am not sure about the importance of one or two pyrenoids???

Fig.E,F,G,H. *curvatus* seems OK. The abnormal forms G and H are very peculiar. I have only once seen something like it. It was a *Tetmemorus granulatus* from Lofoten (Norway). See enclosed pencil sketch, "Siamese triplets".

Fig.J,K. very much like *ecplecticus*, except pyrenoids. And *ecplecticus* perhaps is more "rectangular".?

Fig.L is perhaps = var. *curtus* Turn. ("*βcurta* Turn")

Fig.M,N. *A.subvalidus* OK

Fig.P. "*A.validus* Sc.& Gbl. fa.?" I think it is more like *A.arcuratus*. Cf. Scott & Presc. Arnhem Land; Scott & Gbl. USA.

All these *Arthrodesmi* are very difficult to put into system, as you may not have forgotten from our struggle with the US species. You can call such a desmid X or Z just as well, quite as you like, and no one can accuse you for having made an error.

Fig. Q. Cannot find anything quite like it. Cf. *Cosm.subvenustum* W.& W.1896, (Alg.Centr.Afr., pl.361 fig.17) *✓* *1/6*.

Fig.R. It looks much like "*Penium*" *variolatum* W.& W. (Welw.Afr, Alg.368:23), not so much W.& W.,1902 (Ceylon, XVIII:10) which is somewhat smaller than yours /long 26-27/. Then there is a considerably smaller species, viz. "*Penium*" *inconspicuum* = *Cosmar. bacillare* Lütke. which I have seen from many parts of the world. (I have noted these measurements: long.28-23-19, lat.

riolatum" must be changed, because there is already *Cosm. variolatum* Lund. Of course you can also accept Teiling's *Actinotaenium*? (But chromatophores must be axile with radiating lamellae).





Do you want a photocopy of Skuja's *Schwed. Plankt.*, the desmid figures. I once asked you because you told me that you didn't have it. But I had no answer? I could easily take a film of the desmids for you.

A few days ago I found a curious thing: *Cosmarium gonioides*, when first published by W. & W. in *Alg. Madagascar* was really written *gonioides*, and so it is in *Nordst. Index*! Is the first spelling correct and the second (in *Monogr. III*) wrong? or vice versa? You could perhaps ask Hannah and her Latin professor who certainly must know Greek too. Perhaps he can say which is correct? (There can be a misprinting in the Monograph)

Thomasson's samples from Lake Bangweulu where he found *m. sudanensis* and *M. incredibilis* are new and he has put them aside till our paper is published because he does not like to make drawings.

As to the desmids collected by Sioli I am quite contented to wait till later, because I too have to finish my Italian paper, and perhaps some smaller papers. Prof. Prescott must be a man full of energy, it seems to me that he has one hundred of things simultaneously under work.

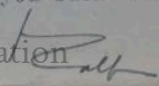
As to the Code 1956: I too do not like "*Euastrum holocystoides* Nordst. var. *holocystoides*" to designate the specific form. I am going to continue with *E. holocystoides* Nordst. Thus generally. But of course, if a species and its varieties and formae are in one paper taxonomically cleared up, then it will be necessary to use the nomenclatural varieties names as recommended in the Code; for example in such a work as your paper on *Staurostrum Wildemanii* I believe it would be in proper place, but not in "lists of species".

Have you noted that *Cosmarium contractum* appears to have several different kinds of chromatophores? ^(vertical view) "     Nr 1 is the typical one, Nr 2 is recorded from Finland (var. *ellipsoideum*), Nr 4 and 5 are more

like *C. moniliiforme* but vertical view is not circular. Have you such drawings or samples? I should be interested. With best wishes,

Digitized by the Hunt Institute for Botanical Documentation

Do you intend to go to the Herbarium in Gießen - 1971.



Dec 12 1957

Dear Rolf,

Many thanks for your prompt reply to my questions. I think it will be best to assign all those large Indonesian Arthrodesmi to *A. curvatus*, while calling attention to their considerable resemblance to our American forms like var. *ecplecticus* of *A. maximus*, and stating that the separation is made very largely because of the different number of pyrenoids. However, you seem to accept the fact that *A. subvalidus* occurs in the same Indonesian collection with either one or with two pyrenoids. I also do ~~not~~ know what cytological significance there may be in the different number of pyrenoids. Perhaps you could ask Kallio about this; he ought to know if anyone does.

Fig. P. "*A. validus* Sc. & Gbl. fa.?" As you say, there is a resemblance to *A. arcuatus*, but by no means identical. This one is smaller than *arcuatus*, proportionately narrower, with a rather less convex apex, and it has only one pyrenoid instead of two. It could be described as a var. *minus* of *A. arcuatus*, and perhaps this is what I shall do with it.

Fig. Q. *Cosm. subvenustum* is not sufficiently like my sketch, I think. I feel that it is a new species; I have seen only the one specimen but I have all the information on it.

Fig. R. This is a puzzler, and I shall have to think about it more. I do not like *C. bacillare*, which Teiling has transferred to *Actinotaenium* as *Act. inconspicuum*, and there is nothing else in his *Actinotaenium* paper that corresponds with my sketch. And I do not much care for "*Penium*" *variolatum* W&W; the Madagascar illustration is much more densely porpose, and that from Ceylon, though less proose is considerably attenuated. Has "*Penium*" *variolatum* never been transferred to *Cosmarium*?

Yes, I should like to have a 35 mm negative of the desmids in Skuja's paper; sorry that I overlooked answering your question before. And if you want to go to the trouble I should also like to have a negative of *Insam* & Krieger. And how about Nellie Carter's FW Algae from India (1926)? If there are any new species of desmids in it I should like that also.

I am surprised that you found the spelling *gonioides* in W&W's Madagascar paper. Perhaps they printed two editions with different spellings of this word!!! I have the original paper in front of me now, and on pp 70 and 88 it is spelled *-odes*. Also I have their paper on North of Ireland (1902) with *C. goniodes* var. *subturgidum* on pp 40 & 98. I do not have their 1905 paper Orkneys & Shetlands with var. *variolatum*. Nordstedt's Index 1896 spells it *-oides* on pp 191 & 293; in the Supplement 1908 it is *-odes* on p 63 but becomes *oides* on p 139. I have a good little book called "The Naturalist's Lexicon" which gives two Greek words *goniaios* and *goniodes* with the same meaning - "at an angle; angular". It does not give *gonioides*, but I have found the following:

-odes. (Suffix.) = Resembling. (contraction of *-oides*. See *-ides*.)

-ides. (Suffix.) = Resembling. (From *idos* = form. Always preceded by *o*, or the whole contracted to *-odes*.)

So apparently both *goniodes* and *gonioides* are correct, but since W&W used the former word it cannot be changed, and indeed there is no reason to. You will have to blame old man Nordstedt or his printer for introducing the latter form. I have found very few mistakes in the Index, and they are not to be wondered at, considering the great complexity of this remarkable work. One that I noticed only yesterday is on p 63 of the Supplement, where *Euastrum gnathophorum* is spelled *gnatophorum*

The suffix -odes seems to be fairly common in Greek; I found three more examples on just three pages of the Lexicon:

Haematodes or haemodes = resembling blood; blood-red.

gloeodes = glutinous.

gonatodes = having joints (like grasses or reeds).

The last one would be a good name for our sutured Gonatozygon.

At present I do not have any drawings showing the chloroplast of *Cosm. contractum* or its varieties; all my sketches were made long ago before I became aware of the importance of the chloroplast. I shall try to find some specimens and draw them, and send you samples if the plant is common enough. This species seems to me to be one of the "catch-alls" containing several forms that probably are not closely related.

I have done a little thinking about going to the Montreal Congress in August 19-29 1959, but have not yet made up my mind because it so far off and lots of things could happen before then. There is one thing that could cause me to decide very quickly, and that is if I knew that I should meet there the eminent desmidiologist Dr. Rolf Grönblad. Is there any possibility that you might be able to go? Could you perhaps get a grant from one of the scientific societies or from the Finnish Government? If so you should endeavour to make the trip before you get too old to enjoy it. That was my experience on my European journey, sad to say.

The Soc. Sci. Fennica or the printer has never sent me an invoice for my copies of our USA paper. Perhaps they consider that the money I have already paid covers the cost, but I should like to know definitely one way or the other. Can you find out?

Also I should like to divide with you the cost of the drawings that Miss Tikkanen made for our Sudan paper. Please let me know the amount of my share in dollars and I will send it to you.

It is really amazing that Thomasson should have found both *M. sudanensis* and *M. incredibilis* in Lake Bangweulu which is some 2200 km in a straight line from Lake Ambadi and with no direct water connection between them. No doubt, however, it would be possible for the plants to be transferred by water birds, by way of the long chain of large African lakes. Since you say nothing to the contrary, I assume that all of his specimens of both species have dichotypical cells; if so it would be another proof that the dichotypical character is inherited and a stable form. After my experience with *Ichthyodontum sachianii* from Sumatra, in which I first found the dichotypical cells and then the two monotypical types from which it has evidently originated, I had begun to believe that eventually the two monotypical progenitors of *Amscottia mira* would be found, and also for the two *Micrasterias* species from Lake Ambadi. I suppose you know of the experimental cultures of Richard C. Starr, who has been able to isolate six different strains of a certain *Cesmarium* (botrytis?), most of which are mutually infertile, but two of which when mixed together promptly cause sexual reproduction and zygospores. It is a great pity that all of the habitats in which our curiosities were found are in such distant places that there seems little possibility of getting living material to the experts for culturing and experimenting.

In Prowse's paper on Malayan desmids he shows in Text figure 7-h a form of *Euastrum turgidum*. This is the same plant as I found in 1951 & 1952 from Borneo, and I had tentatively named it *E. turgidum* var. *perornatum*. Since then I have found the specific form of *E. turgidum*, and the "*perornatum*" differs so much in vertical and side views that I am going to make it a new species. Do we have an *E. prowsii* in the Sudan paper? I remember that we intended to give this name to the large *Euastrum* with widely projecting wings, but changed it to *E. rzoskae*. Since Prowse has published the first picture of "*perornatum*" it would be nice to name the new species for him.

I hope that by this time you have recovered your strength and are no longer feeling so tired. My wife joins me in sending you our best wishes for a happy Christmas and New Year.

Your friend,

ROLF GRÖNBLAD
DR. PHIL.
KABO, FINLAND

Dec.
/ Au. 15 - 57

Dear Arthur,

Simultaneously with this letter I have sent to you a further proof sheet of the Sudanese desmids which I hope you will have a look at making your corrections if you find any to do. Then, please, return it as soon as possible by air mail.

My best
thanks for
the Geogr. Mag.
1958!

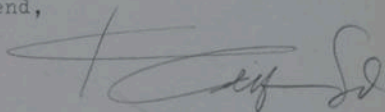
Unfortunately it seems not to be finished within this year. The printers have been suffering much from the "Asiatic flu". The plates have been made and I hope to be able to send you a proof sheet of them too.

In conclusion I wish to thank you all your kindness during this last year. I hope you will accept my offer to send you some photocopies which I offered.

And then: I wish you a HAPPY CHRISTMAS and a GOOD NEW YEAR!

With all good wishes

your friend,



Dec 21 1957

Dear Rolf,

I have returned under separate cover the second lot of galley-proofs of the Sudanese paper, with some additional corrections in blue pencil.

The spaces between the individual items, or paragraphs, are of unequal width, and I think you should call attention to this, though perhaps the printer will remedy it in the final printing.

I forgot to thank you for your sketch of the Tetmemorus triplets. This is a very curious object, and I have never seen anything like it. I suppose it must have been caused by some derangement of the nucleus, but I don't know enough about cytology to tell.

Here's another change of spelling that I noticed in Nordstedt's Index. Joshua (1885) published *Micrasterias ceratofera*, which is a hybrid of Greek and Latin. Nordstedt changed it to *ceratophora* and cited the original spelling. Krieger listed it under the Greek name as his rejected species. The only other references in the literature appear to be in De Toni and Kuntze, neither of which I have. In my Arnhem Land paper I also used the Greek spelling, but at that time (1952) I did not know the original spelling was different. Do you think Nordstedt had a right to change the ~~xxxxx~~ spelling?

In the Sudan paper I notice that you have capitalized personal specific names, though I thought we had agreed to discontinue this practice. No doubt you have a good reason; perhaps the Editor's preference.

Again a very Merry Christmas and a Happy New Year.

Sincerely,

Dec 27 1957

Dear Rolf,

I think your idea of using our three names as authors of the two dichotypical species of *Micrasterias* is a good one, and ought to satisfy Mr. Prowse. There is an alternate which you might consider;- to change the name of *M. sudanensis* to *M. Prowsei*, with Cronbl. & Scott as the authors, and use three names as authors of *M. incredibilis*. It does not matter to me which you prefer.

I propose that we divide the work and expense of distributing reprints for the Sudan paper the same as we did for our USA paper. If this is done I would like to have 100 reprints. No doubt you have asked Prowse how many he wants. Of course I want to pay for my copies, so please have the printer or the Society send me an invoice.

Enclosed is the last sheet of the galley proof, without any changes.

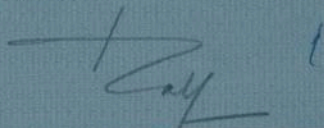
So long, until 1958.

Dec. 22nd 1957

Dear Arthur,

I believe I have not asked you how many reprints you wish of our Sudanese Desmids? Perhaps you have told me already but I have no time to search through your letters and I am tomorrow going to my sister and am not returning before the end of this year. Tomorrow I shall see Hans Luther in Helsingfors and I am bringing with me the final part of the manuscript. Your corrections can be entered into the next proof sheet.

Once more, best wishes,



Dec 26/1957

Dear Rolf,

Under separate cover I am returning the remainder of the galley proof and the plates of illustrations and photos. My corrections are in blue pencil, and I have also made some queries in black pencil where I was not quite sure what should be changed.

Miss Tikkanen's inkwork is very good; in a few cases the stippling of the chloroplasts was a little too light to reproduce well; and in other cases the figures are not quite vertical on the plate, which to a draftsman appears rather "sloppy". I must confess that I like my own plates much better, and I hope you will let me do them for our future papers.

You have noted that Fig. 115 was unfinished, by omission of the granules on the left side. I don't know what can be done about this, except to make a new engraving, and the printer will no doubt object to that. On Fig. 201 one verruca has been omitted from the right basal angle of the upper semicell, but that is not very important.

Photos 360, 364 and 365 should have been reversed to correspond in position with the ink drawings.

Photo 362 is identified as *M. radians* v. *ambadiensis* f. *latioloba*, but there is no drawing of it, and I do not remember such a forma in the proof that I returned about a week ago.

If you anticipate that there may be some conflict with Bourrelly's paper on the Congo, you might perhaps induce Dr. Luther to print on the title page the effective date of publication, such as January 25th 1958. I think there is a recommendation to this effect somewhere in the Code.

I know very well that after a serious illness such as you had it requires a long time to regain your former health and strength, but I hope this will occur long before the Montreal Congress, which is 21 months away. I also am not in good health, and unfortunately there is not much chance of my condition improving to any considerable extent; that is just one of the concomitants of old age. My heart and lungs are weak, and I suffer from shortness of breath after the least exertion. The part of Montreal where the Universities and hotels are located is quite hilly, and I should never be able to climb the hills on foot. Whether or not I should be able to drive my car from here to Montreal and back is uncertain; but at the worst I could fly up there and rent a car, or use taxicabs to get back and forth. But anyway, I am going to proceed on the assumption that you and I will be there, and you can be sure that all the principal American botanists and algologists will be present also; though Hannah told me that Wm. Randolph Taylor is very ill with "infectious hepatitis", and that G.M. Smith is in an even more serious condition from some other disease.

Best regards from your friend,