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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.

March 6 1963

Dr. Jack Myers,
Dept. of Zoology,
University of Texas,
Austin, Tex.

Dear Dr. Myers,

In May 1962 I submitted for the Darbaker Award a paper entitled "Indonesian Desmids", by Arthur M. Scott and Gerald W. Prescott. It was not successful, but yesterday, to my surprise, I received a letter from Dr. P.C.Silva saying there was a possibility of its being reconsidered for the 1963 Award. He has sent you my letter and biographical data, and I am asking him to forward to you the paper "Indonesian Desmids" on which the judgement for the award will be primarily based, and another paper "Some desmids from Arnhem Land in the Northern Territory of Australia", which I offered in support. Also under separate cover I am sending you another large paper "New and interesting desmids from Southeastern U.S.A.", by Scott & Grönblad, published in 1957. I know that this cannot be considered for the award, but it will give the Committee a better idea of my activities in desmid research in this country, covering a period of some 17 years.

Dr. Silva said that his action in sending you the papers does not constitute a formal nomination, but that I should write a formal application to you. Please, therefore consider this my formal nomination for reconsideration, in my own name as an individual, although the paper carries a joint authorship. The inclusion of Dr. Prescott as joint author was largely a courtesy because of our collaboration over many years. The paper, however, was wholly written and illustrated by me (except for the Latin diagnoses), and Dr.Prescott did not see wither the manuscript or proof, and his first sight of the paper was when he received the issue of "Hydrobiologia" in which it appeared.

If there is any other information that you require please let me know.

Sincerely yours,

UNIVERSITY OF CALIFORNIA

DEPARTMENT OF BOTANY
BERKELEY 4, CALIFORNIA

February 26, 1963

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

Dear Mr. Scott:

The Darbaker Award Committee of the Botanical Society of America is undergoing its annual reactivation, and I am in the process of transferring files to the new chairman, Dr. Jack Myers, Department of Zoology, University of Texas, Austin. Although there is no precedent for automatically reconsidering previous entrants, we do of course look over the list of runner-ups as a source of current entrants. Inasmuch as your candidacy seems worth reconsidering, I have forwarded your letter and biographical data to Dr. Myers. This does not constitute formal nomination, however, and if you wish to be considered this year, you should write Dr. Myers to that effect. Then, would you please drop me a line to let me know whether I should return your two large papers to you or forward them to Myers. Incidentally, I should greatly appreciate having copies of these papers, and since I realize that major works such as these are expensive, I would of course be pleased to pay for them.

With good wishes,

Sincerely,

P. C. Silva

LOYOLA UNIVERSITY
NEW ORLEANS 18, LA.

DEPT. OF BIOLOGICAL SCIENCES

June 3, 1958

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

Dear Mr. Scott:

I wish to thank you very sincerely for the reprints on Sudanese Desmids and Desmids from the Southeastern United States, which you very kindly left for me on your recent visit to our department. I cannot begin to tell you how happy I am to have copies of these very important works. I have read them both, and have found them to be extremely interesting pieces of scholarship. You are to be congratulated on accomplishing so much in your free time.

For some time now I have been most anxious to make your personal acquaintance and I deeply regretted being absent the day you paid a visit to our department.

My classmate at Vanderbilt, Dr. Richard Starr, who is now at Indiana, has recently taken a special interest in Desmids, as you know. I found it very stimulating to read his article in the last issue of the American Journal of Botany at about the same time that I was going over the two works you left with me. His findings, and those of Teiling, have recently taken on a new interest for me because of the papers you have produced.

I sincerely hope that the next time you ~~visit~~ visit Dr. Moore in our department that I will have the pleasure of making your personal acquaintance.

Sincerely and gratefully yours,

John H. Mullahy, S.J.

John H. Mullahy, S.J.

MINNESOTA MINING AND MANUFACTURING COMPANY
GENERAL OFFICES • 900 BUSH AVENUE • SAINT PAUL 6, MINNESOTA • TELEPHONE PR. 6-8511
Tape Division

October 24, 1958

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

Dear Mr. Scott,

We wish to express our appreciation for your letter of October 20 and the interesting comments that you made pertaining to our Scotch Brand Pressure Sensitive Tapes and dispensers.

In appreciation for your taking the time to write us, we have enclosed a roll of Scotch Brand Magic Mending Tape along with a plastic hand dispenser for which we are sure you will find many uses, as this tape becomes almost invisible when applied and may be written on with either pen or pencil.

Very truly yours,

W. P. Bushman
Tape General Sales

WPB:YMS

Enclosures (2)

NEW YORK STATE COLLEGE OF AGRICULTURE
A UNIT OF THE STATE UNIVERSITY OF NEW YORK
CORNELL UNIVERSITY
ITHACA, NEW YORK

DEPARTMENT OF BOTANY
PLANT SCIENCE BUILDING

October 30, 1958

Dr. Arthur M. Scott
2824 Dante St.
New Orleans 18, La.

Dear Dr. Scott:

The reprint concerning fresh water algae from Australia which you recently sent to Professor Muenscher has been received by me.

Professor Muenscher has been retired for some years and is presently unable to attend to his interests for reasons of health.

I am very pleased to have your paper and have added it to Cornell's extensive collection of reprints concerning algae which was built up through the efforts of Dr. Muenscher. You may be assured that this collection is of great use to me and to my students. I shall be happy to receive further papers for similar disposition.

Sincerely,

John M. Kingsbury
Asst. Prof. of Botany

JMK/ebs

Oct 23 1957

The Magafile Company,
P.O.Box 3121,
St. Louis, 5. Mo.

Gentlemen,

Thanks for sending me your measure graph, no doubt at the request of Mr. J. Ewan of Tulane University.

Please send me 18 Magafiles, size 4-B. I would like you to prepay the transportation and add it to your invoice, and I will send a check immediately.

Very truly yours,

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

March. 6. 1955.

Mr. A.M.Scott.
New Orleans.

Dear Sir.-

Thank you ever so much for the copy of the Micro Journal with the Electron Photos. Lately I have tried to get the Biological Institute to take some for me - as I am sure - or mearly so - that these differentiate in eachother and it would be a very great help if this would be so.

At the present I am working in town as librarian, (honorary) and have not been able to do any work on diatoms, I would have to take all my collections and books along, too much bother.-

Hope you are getting on well with your foot.

Once again many thanks remembering me with Electronics.

Kind regards

F. Müller-Melchers

P.S. My last trial on diatoms goes along as well.

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

November. 4.th. 1954.

Dear Mr Sott.-

I still have your letter Sept. 27. to answer but I have been down and ou out during 4 weeks of heavy fever, Grippe that brought on an infection of my right leg so that I am just tottering along with cold, under temeperature after a prolonged cure of Penicillin and Terramycion. They just stuck there needle any and everywhere. My head is rather barren and I dont remember well when and what I wrote you last.

Thanks for the samples - I have not been able to touch anything. Worst of of all with all these antibiotics my eyes are semiuseless. Very interesting what you write about Stauroneis Fulmen.× Where did you see the Schmidt Atlas. Thanks for the offer in H.G.Fiedler catalgue, bu 850 is completely out of my range. But were did you see the Schmidt Atlas, I am most interested to get a Microfilm made. I have a copy of the first 60 odd plates very bad and scratched. Was it with Mr. Conger. Years ago I used to write to Conger and a frien of mine the director of our Nat. Hist Museum visited him on my part. (d But I have not heard from Conger since ages. I f you could let me know who has the complete Atlas I would be only to glad to buy a Microfilm. If it is not to much of a bother be so good and try to find out.

Gelatinol. I have tried it and it does quite nicely with desmids, it may be a little to transparant but easy to use and does not need the passgae through alcohol. I shall look up other stainmnh. Try Methylnnblue or anilin blue for stainig the whole body. Fast Red does not everstain and gives a rose colour to the body - darker tints to the cromatophora.

Mr Thomsen has sold his place and I have bought a house for him here in Atlantida and am going to live together with him. I really do not know what to do with the drawings. Groenblad is just as imposible as Krieger I suppose. As soon as I get on my legs I will, try and get in contact with Krieger Son. We will have to get the drawings back again. As soon as I can lay hands on the collection I will have these brought by an offiser of some german merchant vessel back to Montevideo, If you should have any possibility please grab it right away, as I am feeling rather useless at present. It was to much of a fever. Please excuse this most badly written letter.

I am glad to hear that your ankle is getting better, a very bad place to break.

With best regards

Sincerely Yours

F. Müller - Melchers

× fulminar in spanish means to smother to blot out the so it will be Jupiter.

Dec 14 1954

Dear Mr. Müller-Melchers,

It is now a month since we returned from our vacation trip, and I found your letter of Nov. 4th among the accumulation of mail. I wrote to Mr. Conger about a microfilm of Schmidt's Atlas, but he took almost three weeks to answer my enquiry. However, his reply gives a lot of information, and I am enclosing a copy of his letter in so far as it relates to this question. There is one thing he did not mention, - if you order the microfilms, your remittance should be made payable to the American Documentation Institute. I think his information is encouraging, it appears that you can get a complete microfilm of the Plates, text, and Index as far as the latter has been published, for $20.80, and of Peragallo for $5.00. It seems to me that the 6" x 8" photoprints would be too small, for the Atlas as I remember it is a very large size, at least 12" x 16" I should think.

I hope that by this time you have recovered from your spell of sickness, and that the penicillin and terramycin did not work on you like the former did on me. A few years ago the doctor gave me two shots of penicillin, and it caused all of the skin on the palms of my hands and the soles of my feet to peel off, leaving the under layer of skin as soft and sensitive as that of a new-born baby. Most unpleasant.

From Grübler & Co. I have received a sample of Gelatinol, but have not yet had a chance to try it. I hope it works, for the slides that I have made of water or dilute glycerine mounts are not permanent; no matter how carefully I seal them the liquid evaporates.

I have written to Krieger's son about Mr. Thomsen's drawings, but have no reply yet. You will realize, of course, that he has a large amount of work to do in straightening out his father's affairs, and it is rendered much more difficult by the fact that his father's house is in the Soviet Zone of Berlin. But I feel confident that we shall be able to get the drawings returned in some way.

For the last few days I have been examining an extraordinary desmid collection from a remote region on the White Nile in the Sudan. There are at least a dozen new species, maybe many more for every slide that I look at has something new. And the desmids are some of the wierdest things that anyone could possibly imagine, far stranger than anything that I have seen in the reference works.

With my best regards and good wishes for Christmas and the New Year,

Sincerely yours,

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

Sept. 13. 54.

Dear Mr. Scott.-

Thank you for your letter Aug. 23 and the splendid little box. The latter is much to good for my purpose. The next time you use it better put cork stoppers on as the metal caps do not shut completely. The samples reached me dry. *This does not matter.*

I have not had the time to look at them as I am working on argentine plankton 41°S and about 56°W. They want the anwer right away and the quantity that was sent is so small that I can only collect and wash the samples in a centrifuge. All the same it is very interesting. But I had to put every thing aside so not to contaminate with uruguayan or brasilian material. It is very difficult to keep samples clean the whole dust in my room contains diatoms.

I have a new material to mount botanical specimens and I hae written to

G. Grübler & Co.
Stuttgart - Hindelangerstrasse 19
Germany

to offer "GELATINOL" to you. The cost is Marks 1.50, for 100 gramms.

I have tried Gelatinol on Plankton and on desmids as well. It may have a Refraction Index slightly to high for you and make them too diaphanous. If Gruebler does not send you samples I have a little left so you could make a trial. It can be heated, wil dry completely in thin layers. Best is to heat it slightly and then continue drying in an oven at about 28 to 30 degrees Celsius . I do not know exactly how much Fahrenheit that would be.

Now that Dr Krieger died what are we going to do about Mr Thomsens drawings - is Dr Kurt Krieger also a Desmidian? I believe it would be the best to have the drawings sent to Groenblad, if he is not to old and if he has any interest. Mr. Thomsen is coming out to Atlantida and I am going to live together with the old gentleman. May be in October. I would be glad to hear from what you might sugest in this matter. Thanks.

So your ankle is getting better. It is a nasty thing and takes time. A few months ago a bycicle fad knocked over my sister and broke her wrist. 75years old. But it is better again, but it hurts still.

Thanks for the box and samples. I shall see if I can get some Gelatinol from the University lab and will send it to you. You can colour the desmids with Nuclear fastred, it will not spread in Gelatinol.

With best regards sincerily yours

F. Müller-Melchers

Sept 27 1954

Dear Mr. Müller-Melchers,

I have returned your box and tubes, with some material containing some diatoms, though it will probably not be of much interest to you; it is the best I can do at present.

Tubes #1, 2 and 3 contain material collected about 4½ miles northeast of Fort Walton, Florida, USA., which is about 40 miles east of Pensacola. The habitat was supposedly fresh-water, and indeed there are a very few desmids therein, but also there are some brackish or salt water diatoms. The habitat has an indirect connection with the Gulf of Mexico, but it was quite a surprise to see the marine diatoms; perhaps they were brought there during a time of storm or very high tide.

The stuff in Tube #4 is from a swamp at Mount Compass, near Adelaide, South Australia. It contains a few specimens of the very rare diatom Stauroneis Fulmen Brightwell. A few years ago I was in Washington, and called on Mr. Paul Conger, Curator of Diatoms at the Smithsonian Institution. During the conversation I mentioned ~~Exmedimust~~ this diatom and drew a rough sketch from memory. With his help I identified it from Schmidt's Atlas, and it was later confirmed by Mr. Conger after he received some material from me. Curiously, the very large diatom collection at the Smithsonian did not contain this species, though they had some closely related ones. It is a very large diatom, about 130 × 45 microns, so you should have no trouble finding some specimens after a little search. The name Fulmen is probably derived from the supposed resemblance to the conventional shape of the thunderbolts hurled by Jove (Jupiter).

Grübler & Co wrote me by airmail that they are sending some small samples of Gelatinol, no doubt by ordinary mail; I shall be glad to try it on desmids, though as you say, the refractive index is higher than I like. I have had little luck in staining desmids, because the cell contents stains much more readily than the cell wall, and it is the latter with its markings that I am principally interested in. I shall try your recommendation of nuclear fastred if I can get hold of a small quantity.

I don't know what to tell you about Mr. Thomsen's drawings. I wrote Dr. Kurt Krieger more than two months ago, immediately upon receiving the printed announcement of his father's death. He has not replied, but I received a brief note from the widow, Frau Gertrud Krieger, thanking me for my letter of sympathy.. I believe that the son is a botanist, but not a desmidiologist, though he probably knows something about them. From an indirect source I have heard that Dr. W. Krieger left enough manuscript material and proofs to make about one metre in thickness; somebody will have to sort out all this stuff, but I should not like the job. As for the completion of his Monograph on desmids, there are only three or four persons in the world who are capable of it. One of them is Grönblad, but when I suggested it he wrote that he would not dare to undertake it, because his capacity for work is so limited. I cannot say if Grönblad would be willing to work up Thomsen's drawings; if he did undertake it I am sure it would not be completed for several years. Four or five years ago I sent him more than 500 of my desmid collections and over 3000 drawings, on which we are to collaborate, and I supposed that he had been working on them. To my surprise he wrote recently that he had just finished the study of some other USA material sent him in 1947-49 by another American collector, and still has to type the manuscript. So my stuff is still in the future, and I am getting kind of anxious about it, for I am

67 years old and probably have not many more years to live. One of the principal reasons for my trip to Europe, now postponed until next year, is to spend a couple of weeks with Grönblad and try to speed things up.

There is a Dr. Helmcke, whose address I do not know, who collaborated with the late Dr Krieger in an electron-microscope study of the fine structure of diatoms shells. He may be a friend of the family, since it was from him that the information about Krieger's manuscripts came, and he may have something to do with the sorting out of the manuscripts and other material. I would suggest that you write to Frau G. Krieger, Hubertusstr. 19, Hohen Neuendorf b. Berlin, give her a description of Thomsen's drawings, and ask her to see that they are separated from the other material, and held until you can determine what to do with them. Write in German.

My ankle is much better now, and I can walk with only a slight limp, though I get quite tired after walking a short distance. In a couple of days my wife and I are leaving on a trip to Michigan for three or four weeks. There I shall work with Prof. Prescott on a large lot of Indonesian and Australian desmids that I have been studying for the last two or three years.

With my best regards,

Sincerely yours,

Aug 23 1954

Dear Mr. Müller-Melchers,

Thanks for your letter of July 29th, and for the slide of diatoms that you are sending. I shall be very much interested in examining it when it arrives.

The address of Dr. Harald Sioli is: Caixa postal 1814, Belo Horizonte, Minas Gerais, Brazil. You may certainly write to him, and when you do please mention my name, and also that you are a friend of Dr. Hustedt. However, I do not think he will be able to get any marine diatoms for you, because his work is concerned solely with fresh water. For several years he was employed as limnologist and hydrobiologist at the Instituto Agronomico do Norte, at Belem, but left there last December to take a position with the Brazilian Public Health Service at Belo Horizonte. He is not satisfied there, and this summer he visited his relatives in West Germany and is hoping to go back there to live. I have not met him personally, but he writes most interesting letters, and has published several good papers on the hydrobiology of some of the tributaries of the Amazon River. He is proficient in German, French, English and Portuguese.

In the material that Sioli sent me there are three more samples from near the mouth of the Rio Guama which contain diatoms, and I am sending you a little from each of them. They are listed as follows:

Tube #1, = Brazil #55. 24/10/1953. Rio Guama in Sao Domingos. Ablaufendes wasser, fast niedrigwasser, 11h. Phytoplankton. This is quite similar to #54 already sent you. It contains a few specimens of a Terpsinoe similar to T. musica but differing in being only 3-undulate in valve view instead of 5-undulate.

Tube #2, = Brazil #56. 24/10/1953. Rio Capim, ca. 10 km oberhalb Mündung. Ablaufendes wasser, 17h. Phytoplankton. Very similar to #54 and #55.

Tube #3, = Brazil #57. 26/10/1953. Rio Guama vor Mündung des Igarape Mururutum, Inst. Agron. do Norte, Belem. 15h. Gezeitenhochwasser. Phytoplankton. Principally Coscinodiscus, with very rare specimens of Biddulphia mobiliensis and a Campylodiscus (?).

Tube #4, = Brazil #64. 17/11/1952. Cachoeira do Arua. Tümpel in versumpften Tal mit Pataualsal des Igarape do Fonseca. Bodenbelag, abgeschöpft. This is a freshwater collection, and I put it in simply to fill out the box. It has several naviculoid diatoms; several different forms of Eunotia; Actinella; Frustulia (rhomboides?); and an elongated diatom with a curious habit of growth, in long chains each link of which is formed of several cells grouped in the form of a hollow cylinder.

The box is one that I made specially for you. If you like it I can easily make another for you, so that you can exchange them with your friend in Argentina. I shall send your own box by regular mail, and I shall try to find some more diatoms in my various collections to put in the tubes; however, they will be freshwater species.

I regret to inform you of the very sudden death of Dr. W. Krieger, which occurred on July 15th. It must have been quite unexpected, for only 15 days before he wrote me concerning a new desmid from Sumatra, and expressed the hope that we might be able to meet on my European trip in 1955. I have no further information regarding

Mr. Thomsen's drawings; if you wish to enquire about them I suggest you write to Dr. Krieger's son, Dr. Kurt Krieger, Grunewaldstr. 29, Berlin-Steglitz, Germany.

My ankle is healing nicely, and I can now walk without crutches, though not for any considerable distance. My doctor says it will be several more months before it ceases to swell after being on the ground for a couple of hours.

With my best regards,

Sincerely yours,

July 7 1954

Dear Mr. Müller-Melchers,

three 17th

Many thanks for your two letters of May 11th and 26th, also the box of samples, which arrived only three days ago, having taken almost two months in transit. I wonder by what route it came; perhaps to England and back.

The samples are very nice, and contain some interesting desmids, though I have not been able to take more than a quick glance at each of them. Three weeks ago I broke my ankle in a fall, and the leg is in a plaster cast, in which it will have to remain for another 2 or 3 weeks, and after it is removed I shall have to walk on crutches for a few weeks more. I can hobble around the house now, but cannot let my foot rest on the floor for more than 15 minutes at a time; then it swells and becomes painful. So I cannot work at my microscope, and writing a letter like this has to be done in several bites, with a rest in between.

I will return your box and tubes soon, and shall try to find some material containing diatoms that may be of interest to you, among those that I received from Brazil.

Dr. Harald Sioli is a German, formerly employed at the Instituto Agronimico do Norte, at Belem. He left there last winter, and is now with the Public Health Service at Belo Horizonte, but is much dissatisfied there and is talking about either coming to the USA, or returning to Germany. He is a hydrobiologist, principally interested in water chemistry and the microfauna, and has written some good papers on the hydrobiology of several tributaries of the Amazon river. From Amazonia he sent me some 40 collections, some excellent, others good, and a good many almost worthless because they were not taken from the right places; and he has promised to get more material from the neighbourhood of Belo Horizonte, though he says the conditions there are not very favourable for desmids.

Sorry to say that I have no friends who know anything about algae or diatoms. For 15 years I have been working entirely by myself, with only such assistance as I could get from books, and by correspondence with specialists in northern USA and Europe. There is only one other man in Louisiana working on algae, and he has specialized on the freshwater Rhodophyceae. Perhaps there may be some diatomists around here, but I have not heard of any.

When I can drive my car again, I shall be glad to get some material for you, if you will give me <u>detailed</u> instructions for collecting. New Orleans is 103 miles from the mouth of the Mississippi River, following all its windings, or about 50 miles in an airline. But practically all of the coastline of Louisiana is bordered by salt marshes many miles wide, only accessible with abboat and a guide. In the adjacent State of Mississippi conditions are different; the coast is sandy with very shallow water, and there is a fine road all along the coast only a hundred metres or so from the water's edge, and similar conditions exist in certain parts of Florida. Therefore I can easily get you scrapings from the surface of the sand or mud. Can you separate the diatoms from such material? I cannot obtain plankton material, for I have no plankton net; I do not use a net for desmids because I find that I get much larger quantities and a greater assortment of species in squeezings from submerged aquatic plant

My wife and I had expected to spend this summer in Europe, and had all the reservations made; in fact today is the day we were scheduled to arrive in London

But I have had to cancel the trip because of the broken ankle. It would be useless to go on a sightseeing trip until I am able to walk properly and for considerable distances, and by that time the weather in Sweden and Finland will be too cold for me. So we will hope for better luck next year, though lots of things can happen in 12 months.

Thanks for giving me the address of Dr. Cupp and the titles of her papers. However I do not think it would be right to ask her for copies when I am not specially interested in diatoms. Perhaps I may write to the Scripps Institute and enquire if I can buy them.

Sincerely yours,

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

July. 27. 54.

Dear Mr. Scott.-

I am so sorry to hear you broke your ankle, but hope that in the mean time you are quite well and up and doing. I really don't know what they are doing to the letters. Some get here in three days and others take months or do not appear at all.

In the mean time, by surface mail, I sent a slide ofe Guama River diatoms. They were very interesting and thanks as well for the plan showing the exact position of Guama R. I know quite a long time about this diatom , I believe even about a 100 years ago Cleve and others have described Polymyxis coronalis from the Amazonas Mouth. It must be very frequent. I am investigating along the brasilian coast the diatoms on account of the ocean currents. I do not remember if I told you that an engineer takes samples of about 4 hours a board ship from the chief pump. As they pump from the bottom or bottom side of the ship I get quite nice ideas what is found about in the ocean. Some times a little plant scrapings appear, but that really does not matter.

If in the samples of Dr. Sioli you should find other MARINE diatoms I would be very thankfull for a small quantity. Do you think I could write to Dr. Sioli ? What is he like and is he interested in any special branch. Do you know his present address.?

Please do not bother about Diatoms from the Missisippi River. I thought it might be that somebody or some friend of yours might be interested in things like ours. But I see that you are in about the same boat like myself.

What a pity you had to postpone your reservations, but it may be for the good as the weather in Europe has been quite abnormal cold and torrents of rain.

Hoping you will have a nice new ankle in the mean time and can go on looking for desmids.

sincerely yours

F. Müller Melchers

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

Mai. 17. 1954

Dear Mr. Scott.-

I have just received ypur letter of May 5. Mr Thomsen sent his drawings , quite a package, by a young man who went over to Hamburg and he forwarded the drawings to Berlin. It may certainly be possible that Russia makes difficulties in packages, but as Krieger has written to you some time ago it can only be that letters went astray or that he did not answer. These german Professors are a little slow sometimes or do not answer as does Hustedt. Hustedt is an old friend of mine. We are both born in Bremen and I believe he is something as 4 years older than I am. He showed me diatoms when I was 18 and that stuck to me all my life, even if during many years I did not work on this item, having to many difficulties in a factory I had to build up. Sibe the last,about 12 years I have investigated intensely the plancton diatoms of this coast. In the mean time I have been asked to study the brasilian plankton and that is why I was so interested to get a sample from the Amazonas river mouth. I shall not publish on your sample, it is quite natural if the samples have been sent to Hustedt.

Regarding my samples of desmids they are yours and you may do with them just as you like. As Mr Thomsen has given his Desmid drawings away I am not bound to retain these samples. All the samples I have sent to you are from the same two spots, as indicated in my letter of last week. I have no car so I cannot get in to the country, but I always hope for some possibility to get away to gather samples somewhere up north. Please excuse my not having answered your letter to this effect.

On diatoms Dr. Easter E. Cupp has an other paper also very instructive, especially the drawings.

Plankton Diatoms of the Java Sea - you might write to her :

Dr. Easter E. Cupp.
San Diego 16
4820 East Alder Drive.

Please let me know if she answers as I had no answer from her,when I sent my last papers - but do not mention in your letter that I told you so. Her papers are the best drawings on diatoms I have seen in modern literature. I hope she will, answer.

I have the Lefébure ATLAS - not bad but the determinations are not quite exact - most of the drawings are copied. If you have Cupps papers you have most of the planktom diatoms at hand, exact drawings based on modern investigation.

Very sincerely yours

F. C. Müller-Melchers

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

May, 26, 1954.

Dear Mr. Scott.-

Thank you ever so much for the sample from Guamá River. Most interesting. The type that predominates is Polymyxis coronatus, X I am making a slide for you, even if you are not directly interested in Diatoms, it is realy worth while looking at them sometimes. Polymyxis is a as we say in germa n " ein Relikt - literaly translated means something that has stayed over from a prehostorical time like the australian Platytipus - the animal with a duckbeak. Than I have found several southern diatoms but I did not find any resting spore from Chaetoceros lorenzianus, may be I will have to make a few more slides.

X or coronalis

As far as I know the ocean drives up quite a large amount of water in to the Amazonas and its tributaries. I can not find the Guamá on the map, but Belem is well known. In a very samller scale we have something like it with the River Plate where the Ocean comes up as far as Atlantida, as it was just this afternoon. I found a warm water, tropical - diatom from Brasil, known to me only up to now from Santos. The water - I have no means to measure the salinity, I shall have it done tomorrow was very salty, I blieve somewehre about 30‰.

One of the Surirellas(rare) is known to me from Santos I ould not determinate it, it is rather different from the general lines. A few fresh water forms like Pinularia and Eunotia, one Gomphonema, were found. Some of the discoid Polymyxis have still some cromatofora, if they were living is difficult to tell. The latter were found by a german expedition some time ago, but the living form of P. as far as I know is rare and only known from Para River. Fossil it is known I believe?? from tertiary strata. Literature I have looked up, is very scarce on information.

Who is Dr. H. Sioli ? do you know him and does he collect for you ? I only found one Desmid, but as I had to go to town I have not made a thorough investigation.

Regarding Krieger - he wrote - a short and not very sweet letter. He critised the drawings not having a complete dotting, or something like it, now I know Mr Thomsens drawings since years. Most painstaking ly exact, very well finished, not to much and nothing left out. The letter seems to me as I wrote allready a letter of a "german professor and that means quite a lot. Sorry he did not send the batch to Gronblad. The old gentleman does want to hear any more about the matter. He took it badly, as meny botanist who have visited him were always full of praise - believe me I do not say so if I had seen all his hundreds of drawings. I shall try to sent you his paper on parasitic copepod were you can apreciate his work. I am really sorry for him. Dont bother about it and do not mention it to Krieger,

Thanks again for the most interesting Guamá sample, with very kind regards

sincerely yours

F. C. Müller-Melchers

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

May. 11. 54.

Dear Mr. Scott.-

I have just posted a box with 4 samples of Desmids.

They are from

4.2.3.4. a kind of bog in the dunes half way to the cost, that would be about 2 kilometers. it is an expanse of water and little rivulets about 25 x 25 meters.
4.1. is next to the station Parque del Plata

So I will name the place # 4.2.3.4. Cienaga P.P. (that means Bog at Parque del Plata were the road is under tunneld.

4.1. Station Parque del Plata

this for reference between both of us. They are building a lot at this place so it will eventually disappear.

All four samples contain more or less Desmids.

Mr Thomson has had no answer from Krieger. Krieger wrote 1st year saying he sent some reprints, they never arrived. Tell him to answer by registered mail. Thank you.

By the way have you any friends - hydrobiologists - or fishermen down at the Gulf. I imagine it is quite a long way from New Orleans. I once read a book by E.P.O'Donnel " Green Margins" on the Mississippi Delta, very interesting - Bayous etc. I am asking because I would be interested in material - Plankton or Ground Samples from the coast.

Don't bother if there is any difficulty. Please send the box back together with tubes. I use two of these boxes to exchange plankton samples with my friend Balech in the Argentina.

No more for the moment
very sincerely yours
F. Müller-Melchers

The samples went by ordinary mail - not AIRMAIL"

P.S. My previous samples were from the same places as those mentioned above.

April 19 1954

Dear Mr. Müller-Melchers,

Many thanks for the new tube of algal material that arrived about 10 days ago. It is one of the best that I have from you; it contains a large number and nice assortment of desmids, and though many of them are well-known species, there are some that I have not seen before. There was no label on the tube, nor any paper inside, giving the location of the habitat from which it was collected; would you let me know this?

By a coincidence, the day before yesterday I had a letter from Dr. Krieger, saying that he had received Mr. Thomsen's desmid drawings. Since he did not say how many drawings there were, nor make any comment on them, I suppose that he had not had an opportunity of examining them thoroughly. I assume that he is now going to identify Mr. Thomsen's desmids and eventually publish them. If that is correct I think it would be helpful if I sent Krieger portions of the various collections that you have sent me. There are many small species of desmids, and probably of diatoms also, that it is quite difficult to identify with certainty from drawings; in such cases it would be useful to have actual specimens at hand, for he can probably find a number of Thomsen's desmids in your samples, and very possibly some that Thomsen did not see. However, I shall not send them without your permission, and I hope you will let me know about this.

The strange new desmid from Brazil that I mentioned in my last letter turns out to be a new genus, as I thought. It has caused a mild sensation among the desmidiologists who have seen it, because it differs from all desmids hitherto known in that its two semicells are not alike, which introduces cyto-genetic problems that I am not competent to discuss. Dr. Rolf Grönblad will publish it under the name Scottia mira, gen. et sp. nov. Quite an honour for an amateur, nicht wahr? The enclosed photo will give you an idea of what it looks like.

Another of the Brazilian collections is remarkable because it contains a few specimens of two desmid species among a large quantity of marine diatoms. It was made near the mouth of the Rio Guama at Belem, which is not far from the ocean, and the river is subject to a large tide at this point. The desmids certainly cannot live under such conditions, and the only explanation that I can see is that they have been carried down the river from some freshwater source. Among the diatoms I found a single valve of a curious form that I have tentatively identified as Dicladia capreolus Ehr., and I enclose a sketch. Perhaps you can confirm this identification and tell me something about it. Though it looks strange to me, it is probably well-known, since it was named by Ehrenberg a century or more ago.

Did you have any luck with the polyvinyl alcohol, and do you want more of it? I have plenty on hand.

With kind regards,

Sincerely yours,

May 5 1954

Dear Mr. Müller-Melchers,

I have never met Dr. Krieger personally, but have been corresponding with him for the last three or four years, during which time I have sent him numerous letters and several packages of desmid drawings and algal samples. He has always been most prompt in answering the letters and acknowledging the parcels; therefore I do not understand why he has not written Mr. Thomsen about the drawings. The only surmise I can make is either that a letter has gone astray as you suggest, or that he required more time to study the drawings, although that should not have prevented him from writing a note acknowledging their receipt. As you request I have written him today asking that he write Mr. Thomsen immediately. In case you wish to write Dr. Krieger, his address is: Hubertusstr. 19, Hohen Neuendorf b. Berlin. Since this is in the Soviet Zone of Berlin you will appreciate the necessity of being careful in what you write.

I am sending you a small sample of the Brazilian collections containing the marine diatoms along with fresh-water species and a few desmids. This is for your information only; I cannot give you permission to publish anything from it, because all the Brazilian collections have been sent by the collector to Dr. Friedrich Hustedt of Bremen, Germany, who will work up the diatoms. The gathering is described thus: 23/10/1953. Rio Guama in Sao Domingos. 17h. Flut, tägliches Gezeiten-hochwasser. Phytoplankton. I understand that Sao Domingos is not far from Belem. Belem is about 85 miles from the ocean, situated at the junction of Rio Guama and Rio Para, the latter being sometimes spoken of as one of the mouths of the Amazon, though actually little of the Amazon water flows through it except at times of great floods. The Rio Tocantins joing the Rio Para about another 85 miles above Belem.

On examination you will note that most of the marine diatoms are empty valves, though some are complete frustules retaining some of the chloroplast. The brownish material with occasional sand grains I take to be organic detritus from the river bottom. Some of the diatoms I believe to be fresh-water species since they occur in true fresh-water collections (e.g., Orthosira, Surirella). These generally contain the remains of the chloroplast, as do also the very few desmids. My own guess at the cause of this curious mixture is that the marine diatoms are from a deposit at the bottom of the river, possibly having been killed by contact with fresh water. When the ocean tide surges into the river, the salt water would be on the bottom and the fresh water on the top, because of their differing densities. The tidal current might stir up the bottom deposit and cause the marine diatoms to be distributed through both the salt and freshwater, where they were collected in a plankton net, presumably not far below the surface. The two species of desmids that I have seen, Closterium setaceum and a probably new species of Staurastrum, are types that certainly cannot live in salt or even brackish water. Therefore I assume that they have been carried down the river from some swamp, or pond, or backwater that is not subject to salt water influence. I should be glad to hear what you think of my hypothesis.

The "diatom" of which I sent you a sketch was identified from a small book entitled "Atlas pour la determination des Diatomees", by P. Lefebure, Paris, 1947. It is evidently intended for persons, like myself, with not much knowledge of

diatoms, though the illustrations appear to be quite good. It gives a picture of one or a few species of most of the genera, both fossile and recent, marine and fresh-water. There is another illustration of a diatom (?) identified as Syringidium americanum Bail., of very similar appearance to the resting spore of Chaetoceras Lorenzianus, though considerably taller; perhaps this also is a resting spore.

The gentleman who made these Brazilian collections from the Amazon region is no longer in Belem, but is now in one of the Government offices in Belo Horizonte. To my regret, therefore, it appears that there is little chance of my obtaining any more material from Amazonas, though he has promised to send some from his new location, but this of course will be purely fresh-water stuff.

I noticed that you refrained from answering my question about sending your desmid samples to Dr. Krieger. No doubt you have a reason for this omission, and accordingly I shall not send them until and unless I receive your permission.

Thanks for the reference to Dr. Cupp's book on Plankton Diatoms of the West Coast, USA. I shall write the Scripps Institute and ask them to send it to me.

With kindest regards,

Sincerely yours,

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

27. IV. 64

Dear Mr. Scott —

Thanks for your letter and foto. I congratulate to Scottia mira — a most weird-looking Desmid, but nature will produce these kind of forms.

By coincidence, you say — you received a letter from Dr. Krieger. Mr Thomsen is fuming and sent him to hell and every thing else for not acknowledging the package of drawings. I do not understand why Krieger has not written, but it might be he did and the letter got lost. Would you kindly write [illegible] and tell Krieger to answer

Mr. R. Thomsen
Camino Tomkinson 6272
Paso de Arena — Montevideo. —

thank you. I would have written but have no address.

What has interested me enormously are the marine diatoms in the Rio Guamá Belém, is it the Belem or the Amazonas River (or the mouth of the Tocantins.) I have investigated quite a number of plankton samples from the Brazil coast, and have found many marine forms in the lagunas of Cananeia, Estado San Paulo — even traces of antarctic.

P. C. MULLER - MELCHERS
PLANTAHUA
C. DEL URUGUAY

P. S.

I would be very interested in a small sample as it would be a great help to my brasilian investigation. Your drawing shows a resting spore of Chaetoceras Lauderianus. - Rhizosolenia cuspidata was described from fossil material as far as I know, by Ehrenberg and he looks for a diatom, till now I did not know these forms were identified as resting spores. A very good paper on Plankton is by F. Earle E. Cupp. Plankton Diatoms from the West Coast USA. Scripps Institution at La Jolla Calif. 1940. - Please let me have a small sample and if you have somebody who collects in this area I would like to exchange material in diatoms. Thanks you.

My Ipomea sample is from the same place as the other samples. I shall see if there is any more and will let you have other samples.

Excuse this letter the typewriter is bust. Polyvinyl Alcohol, yes it was did not give the results we expected, but we are still experimenting. -

Thanks again and kind regards.

Sincerely yours

Walter Schmidt

Oct 3 1953

Mr. F. C. Müller-Melchers,
Atlantida, Uruguay.

Dear Mr. Melchers (is this correct, or should I write Dear Mr. Müller?),

Your package with three vials of algal material arrived a few days ago, but I am sorry to say that one of them was broken. However, part of the material had dried in the tube, and I am attempting to salvage it; but when this stuff dries out completely, it forms a tough pellicle that is hard to do anything with. I have had the broken tube and what was left of the contents soaking in water for a few days; if this does not succeed I shall then proceed with other methods, such as an 0.5% solution of NaOH, heated if necessary; or a 5% solution of NaClO (sodium hypochlorite).

The tubes that you sent are quite thin and fragile; also the cardboard box evidently was not strong enough to resist the pressure of other packages in the same mail-bag, and the bad was perhaps at the bottom of a pile of 50 other bags in the hold of the ship.

The material does not contain many desmids, but each of the tubes has something unfamiliar, and I am very glad to have it. Perhaps at some future time I may be able to work it up and publish it, but of course I shall not attempt to do so without permission from you and Mr. Thomsen.

Three or four weeks ago I sent you by airmail a second package containing two small bottles of polyvinyl alcohol. Please let me know if you have received either the first or second packages. If not I shall send another by registered mail. The reason I have not used registered mail previously is that I have to make out a customs declaration with it, and the customs inspectors are likely to get overly curious when they see the word "alcohol", and when the stuff proves to be a white powder they might think it is a narcotic drug. Anyway, I'm going to get some to you by hook or by crook.

I have recently received a nice lot of Brazilian collections, though not from any of the persons whose names you gave me. This stuff was collected by a man in Belem-Para, and comes from two general regions; the upper Rio Negro near the Colombian and Venezuelan borders, but this lot is almost devoid of desmids. The second region is the lower Rio Tapajos, not far from Santarem, and many of these samples are very rich, with a lot of new species and varieties of desmids. One of the novelties I claim to be the most wonderful desmid in the world, so strange and so different from any known form that I think it is worthy of a new genus. I have sent drawings and samples of the material to three of the world's most renowned desmidiologists, Prescott, Grönblad, and Krieger, and am eagerly awaiting their opinions.

The word "loess" is the same in English; we have a few deposits of it in Louisiana and Mississippi, along the banks of the Mississippi River. It is supposed to have been deposited by wind action, because it is an extremely fine sandy material, almost dust. Thomsen must have discovered something new if he has found winter desmids that possess spines or warts that are not present in summer specimens of the same species. There is no mention of such a phenomenon in the literature, and I have never seen any sign of it, though of course we have very little cold weather here. Frere Irenee-Marie has collected desmids under 12 inches of ice in Canada, and makes no mention of any difference from similar specimens collected in summer from the same habitat.

With many thanks for the samples, and my best regards,
Yours sincerely,

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

October. 3. 53.

Mr. Arthur M. Scott.
2824 Dante Street
New Orleans. 18 La.
U. S. A.

Dear Mr. Scott.-

Thank you very much for sending the Pälivinyl Alcohol, it arived safely. You must excuse me for not having answered a long time ago, but I was shut up with a friend of mine in hospital who was rather ill.

In the mean time you will have received samples of Desmids I sent to you. Today I am sending an other sample. Desmids have been rather scarce round here for the last months, but I shall go over the territory and have an other look.

I have not been able to see Mr. Thomsen so I cannot tell you if he has written to Krieger, I hope to see him next week.

Once more many thanks and best wishes

sincerely yours

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

August. 4. 53.

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

Dear Sir.-

Thank you very much for your letter of July 11. -please excuse my not having written as yet, but I wanted to talk to Mr Thomsen first. He told me he was going to write to Krieger father, but he has no material only his very fine drawings, in some cases colourd. Dr. Krieger will have to say what he can do with that. I hope Thomsen will write, he was very sick some time ago.

In the mean time I have collected a few desmids for you. Two of the vials have the same number of the water holes where I collected samples for you. You will not find very much, but Thomsen has told me that winter samples (we are in winter at present) will have some apicules or probosities that are not seen in summer or vice versa.

The sample # 346 was collected at 200 meters from the sea ledge. The coast is composed of sand dunes covering a big extension of loess - a kind of red clay found exstensively in Uruguay, Argentine and specially in China. I do not know the english for it. Now this Loess pinicle about 20 meters high is topped with a few pine trees and has in the middle a small pond. Water is found only in winter. The sample contains only very few desmids. It might be of interest.??

The polyvinyl alcohol has not reached me yet, but our central post office is in such a mess that it may arrive at any moment.

Thanks for your letter , shall be glad to hear again from you, with best wishes,

sincerely yours

F. Müller-Melchers

samples go by surface mail.

July 11 1953

Mr. F. C. Müller-Melchers,
Atlantida, R.O.del Uruguay.

Dear Sir,

In one of my letters to Dr. Krieger some time ago, I mentioned what you had told me about Mr. Thomsen, that he had a large collection of drawings of Uruguayan desmids, and that he had sometimes thought of sending them to Dr. Krieger to be worked up and published.

I now have a letter from Dr. Krieger, which I am sending you herewith, in which he says that he would try to find time off from his work on the Rabenhorst's Kryptogamenflora in order to work up Mr. Thomsen's material. This looks like an excellent opportunity to get the Uruguayan desmids published, and I hope you may be able to persuade Mr. Thomsen to take advantage of the offer. You will note that Krieger writes "Wenn Sie es selbst nicht bearbeiten wollen", but I take this to be merely a polite expression, because I have not suggested that I should enter into the picture at all. In fact there are at least two good reasons why it would be impossible for me to undertake it; firstly I do not possess sufficient experience or authority, and secondly I have several years work ahead of me in working up my own collections from southeastern USA and other material from Panama, Australia, Indonesia, etc., on which I am collaborating with Mr. Rolf Grönblad and Prof. Prescott respectively.

Dr. W. Krieger's address is:

Hubertusstr. 19,
Hohen Neuendorf bei Berlin.

But this address is in the Eastern Zone of Berlin, and because of the present unrest in the Eastern Zone of Germany it might be better to send the material or drawings to Dr. Krieger's son, who lives in the Western Zone. The son's address is:

Dr. Kurt Krieger,
Berlin-Steglitz,
Grunewaldstr. 29.

I hope that you received the small package of polyvinyl alcohol, and that you had some luck with it. Please remember that I have plenty more available if you want it.

With my best wishes,

Sincerely yours,

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

May. 15.th. 53.

Mr. Arthur M. Scott.
New Orleans. La.

Dear Sir.-

Thank you for your letter May 5. I believe you are right, Polivinyl Alcohol must be comercial product. I have found in Microcosmos an advertisment by the Badische Anilin & Soda Fabriken, they make something like it. The fact that interested me to try this product was , that it is soluble in Fromaldehyde, so that it might be useful for mounting fresh plancton, ne need to dehydrate. Most of the marine plancton with long awns and very delicate wikl collapse if you have to manipulate it to much.

Father Balduino Rambo (Society Jesus) has answered my letter on account of Desmids. Nothing doing - nobody is interested in the Southern parts of Brazil, it might be that a scolar would be interested than he would have samples collected, but he is very sceptical. I will write to sombody else. Brazil is so vast and only cultivated at the borders, there very intensly, but most are intereted in combating insect pests - ants etc, to catch cobras and rattlers, and fishery, next to Botany. I shall see what I can do.

With kind regards

very sincerely yours

F. C. Müller-Melchers

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

new address April. 7. 53.
without Estacion just
Atlantida.

Mr A, M. Scott.
Dante Street 2824
New Orleand

Dear Mr Scott ;

Please excuse me for not having answered your letter of Febr. 14. it got mixed up with other papers and I just found it again.

Brazil. I have just written to :
Rev. Padre Balduino Rambo
Ginasio Anchita
Porto Alegre
Rio Grande do Sul Brazil.

Padre Rambo is one is one of the best known botanists in southern Brazil and I am sure that he will find someone who might collect for you.

The other posibility is :

Dr. Lejeune de Oliveira
Estacion de Hidrobiologia
Institute Oswaldo Cruz Caixa Postal 926
Rio de Janeiro
I am no quite sure if he would do something for you, but you might try it.

The following I do not know :

Dr. Felix Rawitscher
Facultad de Fil Ciencias y Letras
Caixa Postal 105 B
Sao Paulo.
Brazil
Dr. Romano F. Milanez
Jardim Botanico. Gavea.
Rio de Janeiro
Brazil you meght try these as well .

Regarding the samples I sent, youare right. The water is acid. This year has been rather wet and it may be that I can find some more samples for you. I have been very busy with my planckton diatoms, as these have changed completely this year and a few new things apeared quite recently. It seems most absurd to say "NEW" but it is so, new and others adapted to their surroundings.

As soon as Rev. Padre Rambo answeres I shall write to you.

In the mean time sincerely yours.

F. C. Müller-Melchers

June 7 1953

Dear Mr. Müller-Melchers,

Dupont was unable to supply anything smaller than a 10-lb. package of Polyvinyl alcohol, so they referred me to another dealer, Delkote, Inc., P.O.Box 1335, Wilmington, Del., from whom I obtained a 1-lb. package. The label on the can reads "Polyvinyl alcohol, Grade 71-30. Completely hydrolized. Medium viscosity". I have sent you about one ounce of the stuff under separate cover, and I have enough left to supply you and half-a-dozen other microscopists for the next century! Fortunately the material is not expensive. If you want more of it just let me know.

Although this is an alcohol I had a suspicion that it might turn out to be a solid, and it is, in fact, quite similar in appearance to the Sodium CMC that I sent you. I should imagine that its physical properties will be quite like those of CMC, and it seems to be used industrially in some of the same applications that CMC is.

Dupont sent me a reprint of a short article describing the method of preparation and use of polyvinyl alcohol for quieting and slowing up the movements of Paramecium and other microscopic fauna. I am enclosing a copy of the article, and this is the only information that I have on the method of preparation and use.

I received the material only yesterday, and have not tried it yet. I hope it works well for your plankton diatoms.

Sincerely yours,

May 5 1953

Mr. F. C. Müller-Melchers,
Atlantida, R.O.del Uruguay.

Dear Sir,

Upon receipt of your letter of April 7th I tried to purchase the Polyvinylalcohol, but find, to my surprise, that none of the wholesale drug and chamical supply firms in New Orleans carries it. A pharmacist with whom I am acquainted, also was unable to find any source of supply.

Apparently the reason is that this material is an industrial chemical that is used and sold in carload lots. It is used in the sizing (Planieren) of paper, and as an emulsifier and plasticizer. In these respects it is similar to Sodium CMC which is used for the same purposes, among others. Its function in a mounting medium for microscopic work would therefore appear merely to be on account of its viscosity, or, in other words, a substitute for the older substances such as gum arabic, cane sugar, or cherry gum. The German recipe that you give seems to be a combination of lacto-phenol and "mélange de Faure, or gomme au chloral de Faure", given in in L.L.Laporte, Ce qu'il fait savoir du monde microscopique, 1946.

I learn that Polyvinylalcohol is made in five different grades, each with varying physical properties such as viscosity, ~~xxx~~ I have no exact data on it. I have written to E.I.Dupond de Nemours & Co. in Wilmington, asking if they will be kind enough to send me a small amount, and if they comply with my request I shall forward it to you at once.

The Kaurit 65, described by Horst Kaudewitz in Mikrokosmos, seems like a very suitable self-hardening material, for mounting certain kinds of objects. I am doubtful if it would work with desmids, because they are so extremely delicate and very easily collapsed by osmosis when transferred from water into any thicker solution, and it is not clear from the article whether a very slow evaporation is possible with Kaurit, as it is with water-glycerine. If you get any Kaurit I should like to try it.

I wrote to the three gentlemen in Brazil whose names you gave me, but there has hardly been time yet for a reply. I shall let you know if I hear anything from them.

With kind regards,

Yours sincerely,

F. C. MÜLLER - MELCHERS
ATLANTIDA
R. O. DEL URUGUAY

April. 22. 1953.

Mr. A. M. Scott.
2824 Dante Street
New Orleans. La.

Dear Sir.-

I wonder if you could help me in getting a new medium for mounting of microscopical objects. In the last number of the " Microcosmos " I find a notice taken from Pharmac. Journ. 167. 1951. 65. J.P.Hall. Polyvinilalcohol a highly viscose product. In the same Microcosmos there are further recipes using this product. I suppose it is made by Dow or Monsanto. Could you get a small amount for me. I suppose it might be of interest to you as well.

The recipe is the following :

14 ccm of Aceton 70%
15 ccm of Glycerin
15 ccm Lactic acid
30 ccm dest. Water
4 gr Polyvinilalcohol viscousus

and to better the keeping quality 50 mgr Thymol

a german recipe :

10 gr Polyvinilalcohol
35 ccm Lactic acid
25 ccm Phenol 15%
10 ccm Glicerin
30 gr. Cloral hydrate
40- 60 ccm Aqua dest.

Brazil has not answered up to now. I would be much obliged if you could get a small amount of Polyvinilalcohol for me. thank you in advance.

yours sincerely

F. C. Müller-Melchers

Feb 14 1953

Sr. F. C. Müller-Melchers,
Estacion Atlantida,
R. O. del Uruguay.

Dear Sir,

I am very much obliged for the desmid collections that you have sent me, and for the trouble you went to in getting them for me. The last two arrived about a week ago, and already I have seen a number of interesting forms in them, one of which, a very large Cosmarium, looks as if it might be a new species; I don't recall having seen it in any of the papers on South American desmids, nor elsewhere. This Cosmarium occurs in both of the last two samples, from Solis Chico, so I should judge that both of them came from the same pond, or at any rate from ponds that are close together. It is not necessary to send such a large quantity of material; the small vials that you sent at first, or even smaller ones, would hold quite enough for my purpose.

The ponds in the sand dunes from which you collected ought to be favorable habitats for desmids, since the water doubtless is acid; this is also indicated by the presence of Oedogonium and Bulbochaete filaments, most species of which are acidophiles. But I am puzzled by the very poor representation of certain acidophilic desmid genera, notably Staurastrum which is the second largest desmid genus. In all the samples that you have sent Staurastrum is present in a very small number of individuals, and only three or four species. But this is one of the unexpected and unexplainable conditions that are encountered in desmid collecting. In two ponds that are seemingly quite similar in ecological character, one will have an abundant desmid-flora, while the other may be very poor.

I tried your method of using $KMnO_4$ and H_2O_2, but was not successful on the first trial. There was little reaction and the brown stain from the permanganate was not bleached, though I removed it easily with oxalic acid. I think the trouble was that my peroxide was old and had lost most of its strength, so I am going to try again with fresh peroxide. But I think I shall prefer my own method of sodium hypochlorite and peroxide, which works well most of the time, though not always.

Thank you also for sending the copy of "Mikrokosmos". I have written to Germany asking them to enter my subscription again. In a recent issue there was an article by Ing. Kurt Förster, attempting to prove that there is no distinct plankton desmid-flora, in which he used an illustration of one of my desmids, St. Ophiura var. longiradiatum, as an example of a tropical plankton form. Perhaps he may be right; the example mentioned was not found in the plankton, but occurs in several of my gatherings which are squeezings from fine-leaved aquatic plants such as Utricularia. In the early days of my collecting I soon found that plankton catches yielded a very small quantity of material, frequently more rotifers and crustacea than desmids, and only a limited assortment of the latter. Also most of my gatherings are made from roadside ditches and ponds, far too small to have any distinct desmid-flora, and usuallly so overgrown with larger aquatic plants that it would be impossible to use a net.

One of the boxes that you sent me had previously been sent to Prof. Dr. Gliesch, of Porto Alegro, Brazil, who appears to be a veterinarian. If you have any correspondents in Brazil, particularly the northern, tropical parts, who are interested in aquatic microscopy, I should be very glad if you would give me their names and addresses, so that I may attempt to get some desmid collections from that country, which has an extremely rich desmid-flora.

Sincerely yours,

Dec 3 1952

Sr. F. C. Muller-Melchers,
Estacion Atlantida,
R. O. del Uruguay.

Dear Sir,

It gives me pleasure to comply with your request, and I have sent you a package containing four half-ounce boxes of cover-glasses, 7/8" square (18x18 mm), in the No. 2 thickness, which is the most generally used. The shop where I bought them had only the 18 mm, but undoubtedly I could get the 15 mm somewhere else. So if you need any more, please specify exactly what you want, and whether the No. 2 or No. 1 thickness (No. 1 is the thinnest made).

Please assure Mr. Thomsen that I have not the slightest wish to intrude into his territory, and therefore I willingly agree not to publish the desmids in any Uruguayan collections that you may send me. Such material would be simply for my own pleasure and information. I find it very instructive to examine desmids from other parts of the world, and as you surmised, I have been trying for several years to obtain such collections by correspondence. I have had very little luck in purchasing material, but from other algologists and botanists in distant lands have been very kind in sending collections, and thus I have obtained some very nice series of gatherings from Japan, Australia, and Indonesia. I cannot publish any of the Japanese desmids, because they are being worked up by Dr. Minoru Hirano who sent them to me in exchange for some of my own collections. There were no restrictions on the Australian material, and in collaboration with Prof. Prescott I have written two papers on it, one of which should be now in press, and the other ought to be published next year.

I am glad to know that Mr. Thomsen is thinking of sending his desmid drawings to Dr. Krieger, or possibly to Dr. Grönblad. I can tell you that Grönblad will be very busy for the next two or three years, because he is working up the remainder of my USA collections, which will be described in one (or more) papers under the joint authorship of Grönblad & Scott, and this in addition to his own work and collections. For the last two or three years I have been corresponding occasionally with Dr. Krieger, but I don't know much about him because his replies to my letters are always very brief. Grönblad told me that Krieger's son, who was also his assistant, was killed in the war, and I gather that he has had a rather difficult time during the years since the war because of living conditions in the Soviet zone of Germany where he lives. About 18 months ago Krieger asked me to send him some representative collections from the USA, which he wanted for the purpose of making original drawings of several Cosmarium species that are found only in North America, such as C. dentatum, C. cosmetum, C. novae-terrae, etc., instead of having to rely on copying the drawings of older authors, for the forthcoming Lieferung of his Monograph, which will deal with the genus Cosmarium. Accordingly I sent him a set of samples, containing all the above and many others, which he was glad to get.

For the last couple of years Krieger has collaborated in an investigation of the shell structure of certain diatoms by means of the electron microscope, at very high magnifications, 30000X or more. They have published three short papers, with photos and very good drawings, showing some truly astounding details that were previously nether known nor even suspected. If you have not received these papers I suggest that you ask him for copies of them.

Krieger wrote me a few months ago that he was retiring on a pension, which will give him more time for his research and writing, though his income will be much reduced.

It is very kind indeed of you to offer to make some desmid collections yourself, instead of trying to find someone to do it, which might not be satisfactory. In return I shall be happy to reciprocate in any way that you wish, either in money, or by purchasing in this country any supplies of books that you may need.

With many thanks for your cordial and informative letters, I am,

Sincerely yours,

P.S. I am not a 'doctor' either, must plain Mister.

C. MÖLLER-MELCHERS
ESTACION ATLANTIDA
R. O. DEL URUGUAY

Nov. 23. 1952.

Dr. Arthur M. Scott
2824 Dante Str.
New Orleans La.

Dear Sr.-

Thank you very much for your letter of Nov. 9. I have not seen Mr. Thomsen this week but I may go to town (Atlantida to Montevideo 60 km) next week and will talk to him again and again about his drawings, some times we start fighting , but you are not supposed to do that with an old gentleman of 75. We know each other about 38 years and I apreciate him very much. He studied in Freiburg Botany, but did not take a dgree, all the same he knows a lot more than any niversity man. He is thinking of sending his drawings to Krieger, I believe he was in contact with K. father. I have seen a few of Groenblads papers and shall suggest your idea sending his work to G. Now please understand this with an open mind and excuse my beeing quite open with you. He said if I had had sent material to you he did not know if you were going to publish anything on uruguayan desmids, than he could not send his drawings to Krieger or Groenblad. Please let me know what I shall tell him. I have seen your advertisment some years ago wanting collections of desmids. (in the Microscope,England.) I suppose you try to get collections all over the world as I do with diatoms for reference sake and for study of the geographical distribution, but the old boy is a little touchy and I should not like to tread on his toes. I see that your study came out of the stage of a hoby as my diatom studies as well. Years ago 40 odd - Hustedt gave me an introduction to diatoms. We are both from Bremen, Germany. During the war I lost - black list- etc my position as manger of a Glucose and Starch factory, that I had built up during 25 years, the first in this country. Having nothing to do - I started again on my own hoby, that now is come to the stage of interesting investigation. Same as you I have great difficulties with literature and my small cash does not go far enough to buy all the old Standard works. But I am getting on quite nicely as I have specialised on Marine Plancton Diatoms, and when I want a change on peat bogs and semi fossil peat findings. So you understand now were the desmids come from (and leave out the Dr. - I am mostly self taught.) I shall be gladto collect samples for you. I would not find any body who would concientiously look for desmids for you, nobody is interested, the same with diatoms. I have a young girl now from the oceanografic institute and have showing her what diatoms are, but these girls will mary and then so long diatoms. She is realy very interested. Your samples arrived and I will hand these over to Thomse: he is always interested.

Now if you will do me a large favour please send me a few boxes of cover slides 18x18 or 15x15 - there is not one box in Montevideo to be had. I am making a collection of slides for Sweden and got stuck. Thank you, and dont bother about the desmid collection I shall make it.

I am sending you one of the first numbers of the Mikrokosmos, you can sbuscribe again, it is quite good. Thanks for the sample CMC I will try it when I get Chaetoceros plancton, and let you know.

yours sincerely

My desmid samples are from this coast, about one kilometer from the beach. Small water puddles and creeks in the dunes. If you find pine pollen , this is from the trees planted to keep the dunes from covering everything. I will try and take the pH. You are right it is on the acid side I should say.

The KMnO4 method can be altered to your needs. start with a low concentration and a short time say for instance two hours and not in the sun and no artificial warming. Just one or two drops of H2 SO4 and a diluted H2O2 solution. You will have to try several solutions to find what will suit you.

F. C. MÜLLER-MELCHERS
ESTACION ATLANTIDA
R. O. DEL URUGUAY

know PECTIN is used extensively in the States for making fruit yellies, marmelades and the like. Why dont you try pectin for mounting the desmids. I do not know the refractive index but it might work and they make a very good pectin in your country.

I have told Mr Thomsen that you have sent him your papers. The old gentleman is 75 years old and a little difficult. I have been asking him since a few years to write a paper on th desminds having such a beautifull collection of drawings of uruguayan desmids. But I cant get him started and I myself just know enough to get on with my branch of marine plancton diatoms , these givinge me quite enough headaches. But as I have been collecting desmids for him I shall revisit the spots and see what is left. I shall do so right away tomorrow and if there is any luck, mail the sample to you. How shall I preserve them, I have used formol for Mr Thomsen.

As soon as I get the answer from Germany and as soon as I can make the slides with CMC I will report results to you. I am sorry to say that just like you had not luck in getting answers on the results with CMC and have had very bad experience with co- investigators of diatoms. I believe it is meere jealousy that you might find something they did not find. You will excuse my outspokeness but it has hapened to me.

Thanking again I remain yours sincerely

F. C. Müller-Melchers

F. C. MÖLLER-MELCHERS
ESTACION ATLANTIDA
R. O. DEL URUGUAY

Oct. 11. 1952

Dr. Arthur M. Scott.
2824 Dante Street
New Orleans 18. La.

Dear Dr. Scott.

Please excuse me for not having anwered right away, but I have been living some time with Mr. R. Thomsen and your letter was handed to me only recently. Thank you very much for the sample of CMC. I shall wait some time before I can try it, as I should like to try it with fresh plancton and at the moment the marine plancton on this coast is very scarce and does not bring the forms for which I intend to use it. You are quite right surmising that a diatoms mountant should have a high refr. index, but in this case what I want is to make sildes that wil show a plancton comunity in a most natural way - and this is difficult with the genus Chaetoceros were the very long awns are apt to break. (often dried)

In the german monthly " Microcosmos" I lately read about a new mountant for all kinds of slides - insects, diatoms and plant tissue. It is called Kaurit and dissolves in Formaldehyde. I have written and asked for a sample. As soon as I get an answer I shall comunicate this answer to you. I had to write to a friend as the article did not give address of the makers, so it will still take some time.

I shall write to Mr. Thomsen and Prof. Phinney. During the war I wrote to Dow but had no answer, I suppose they have other things to do than making micro mountants.

Mr. Paul S. Conger is known to me and I have hade some correspondence with him. It is a strange coincidence that you write about his method of using clorine for bleaching algae. I had just tried this on peat samples as I wanted to dterminate specially the remaining plant tissues in order to try and find out the familes they belonged to. Now I have been using peroxide since quite a long to gether with Potasium Permanganate -KMn04 - to bleach diatoms, specially the plancton type (much more delicate then others and have had rather good results. I believe you could try this with desmids as well. a 10 to 20 % KMn04 solution [illegible] this in case of diatoms, beeing of silex the percentage can be a high one, now with desmids it may be necesary to use a lower percentage, you will have to experiment. Leave the desmids and KMn04 during a day or two in a warm place (on the windowsill in the sun) acidulate with a few drops of concentrated Sulfuric acid and add Peroxide - it will bleach instantly foaming - producing oxygen in statu nascendi. (The acid to be added just before bleaching. As I have seen Peridinium forms in my plancton bleachings resist this method it may be that it would do for desmids as well. But as you have Chlorine method, I suppose that will be sufficient for you.

Now as you write that you use the CMC for an interdiate mountant to be able to draw side vies of desmids, I remember that in Germany they used Quince mucilage to keep bugs like Paramecium more quiet for observation. That gave me an idea. This quince mucolage is Pectin. Now as far as I

Nov 9 1952

Dr. F. C. Müller-Melchers,
Estacion Atlantida,
R. O. del Uruguay.

Dear Sir,

Thank you very much for your friendly letter of October 11th, and also for the collection of freshwater algae from Las Toscas, which arrived about a week ago. This is a very nice sample, and though it is not especially rich in desmids it contains a good assortment of them. In addition to the ubiquitous forms, I have already noted some rarities, a few of which I cannot immediately identify and which may prove to be new varieties. From the relative abundance of certain desmid genera and species, such as Cosmarium, Euastrum, Netrium, and Desmidium, and the scarcity of others like Staurastrum, Arthrodesmus and Xanthidium, I should judge that this collection came from a peat bog or sphagnum bog, with acid water of a pH of about 6.5 to 7.0. The diatoms also, though I know little about them, seem to be quite similar to those that I see in soft-water collections from southern USA.

I am surprised to learn that Mr. Thomsen is 75 years old, and that he has not published his drawings of Uruguayan desmids. It seems a pity that such valuable material, representing a large amount of work, should go unpublished. If he does not intend to publish his results, perhaps he would be willing to turn over his drawings and notes to some specialist, like Prof. Gerald W. Prescott who is the best desmidiologist in this country, or Dr. Rolf Grönblad of Finland, who is one of the best (perhaps the best) in Europe. A year or so ago I sent Grönblad more than 3000 of my desmid drawings, and over 500 of my collections, which he is going to work up. I am unable to do this properly myself, because I am an engineer, not a botanist. The collection and study of desmids has been my hobby for the last 15 years. The southern part of the USA has been so little explored by algologists that I have found a great many desmid species and varieties that I am quite unable to identify, both from lack of experience, and especially from lack of the world literature, which is unavailable in any of the libraries here. So that is the reason for my collaboration with Prescott and Grönblad.

Your method of bleaching with $KMnO_4$ and H_2SO_4 is interesting and worth trying, though it seems a little drastic for desmids with their cellulose wall. Also your suggestion of pectin as a mountant is interesting, and this substance can be bought at any corner grocery store. I have also seen cherry gum recommended for the purpose of restricting the movements of protozoa, but this material cannot be bought so far as I know, and cherry trees do not grow here because of the hot climate.

With the same mail I am sending you a vial of Dupont's sodium CMC, also two vials of desmid collections from Florida, which Mr. Thomsen might like to look at, if he still uses the microscope. And if you happen to know some young man or woman, preferably with some knowledge of botany, who would like to make some extra money, I should be glad to pay $50.00 (U.S.) for say 25 collections of desmid material from good habitats similar to Las Toscas.

I used to subscribe to Mikrokosmos, but apparently they suspended publication during the war, and I have not received it since about 1941 or 42. Is it still published by Franckh'sche Verlagshandlung in Suttgart?

With many thanks, I am,

Yours sincerely,

F. C. MÜLLER-MELCHERS
ESTACION ATLANTIDA
R. O. DEL URUGUAY

August. 3. 52.

Dr. A. M. Scott.-
New Oeleans.

Dear Dr. Scott.

In the Bulletin of the Phycol. Society Vol III you have referd to a medium for micro mounts of Desmids. CMC - I have tried to get this medium without result.

As you have used this medium on Desmids I believe it might be good for plancton diatoms as well. Please let me know if your results have been good and where i can write to for CMC or if possible let me have a small sample. Thank you very much. Enclosed my last paper.

very truly yours

F. C. Müller-Melchers

Sept 22 1952

Dr. F. C. Müller-Melchers,
Museo de Historia Natural,
Casilla de Correo 599,
Montevideo, Uruguay.

Dear Dr. Müller-Melchers,

I am glad to comply with your request, and enclose herewith a small sample of Dupont Sodium CMC (sodium carboxymethyl cellulose), which is sufficient for making quite a number of mounts.

The note in Bull. Phycol. Soc. is misleading; I do not add the dry material to the liquid on the slide. I use it only for temporary liquid mounts of desmids, with a floating cover glass, and have not tried to make permanent slides with it. I like it better than glycerine because it has a lower refractive index, which gives better contrast for the delicate markings on the cell-walls, and it does not have the "clearing" effect that glycerine does, while its viscosity can be controlled by evaporation, either naturally or by warming on an electric warm-plate.

First I make a stock solution of about 5% by weight, and add a few drops of formalin to prevent mould growth. After placing some of the algal material on a slide and dispersing it, I add one, or two, small drops of the CMC solution with a fine pipette, and place the cover glass on it. Such a preparation will have about the same viscosity as pure glycerine. If I want a higher viscosity, I place the slide on the warm-plate, at about 65° C. for 10 minutes or so, watching it to see that it does not dry out entirely. If it gets too thick, the cover glass can be removed and another drop of the stock solution added to thin it.

I like this material because it helps in manipulating desmids into the various positions required for drawing the front, top, and side views, and for holding them in position, which is frequently very difficult in water. The refractive index of glycerine, 1.44, is too close to that of cellulose, about 1.52. The refractive index of a solid film of CMC is given as about 1.51, but in a 2% solution I expect the index would be very little higher than that of water 1.33, though I have no means of measuring it. Perhaps this would work for your diatoms, though I believe that generally they require mounting media of much higher index to bring out the finer markings.

About three years ago I distributed samples of this material to several algologists at the AAAS meeting in New York, also to some friends in Sweden and in Czechoslovakia, and asked them to report on it after trying it. I have received only one report, from Czechoslovakia, and this man says he does not like any viscous material for desmid mounts, because of a tendency to drift after the slightest movement of the cover glass. Mr. T. Ward Thompson, 142 Berkeley St., Boston, Mass., has been working with a similar material made by the Dow Chemical Co., and at his request I sent him a sample of CMC a couple of years ago, but have heard nothing further from him. Also Prof. Harry K. Phinney, Dept. of Botany, Oregon State College, Corvallis, Oregon, has been using CMC (on marine algae I believe), and writes that some phytopathologists at the College also like it. Perhaps you could get more information from these sources.

Sodium CMC is an industrial material made in large quantities by the

E. I. Dupont de Nemours & Co., Wilmington, 98, Delaware. It is used for such diverse purposes as the manufacture of printing inks, adhesives, cold-water paints, paper-making, stabilizerfor ice-cream, and as a gel for bacteria cultures. It is made in various degrees of viscosity, the sample which they sent me being a medium grade. The heaviest grades, 4WH and 4WXH, are said to gel at a concentration of 5% in solution, and might be suitable for making permanent mounts of algae. I have not tried them..

If you are interested after trying the small sample, I suggest that you write to the Chemical and Miscellaneous Sales Dept. of Dupont de Nemours, at the above address, and ask them to send you a sample of the heavy grades named above, with a descriptive bulletin that gives much more information about the material.

In your paper on Biddulphia chinensis I note that you are a friend of Sr. Ricardo Thomsen, who is a member of the Phycol. Soc., and is listed as being willing to exchange reprints of papers. The next time you see him, would you be kind enough to ask him to send me copies of any papers that he may have published on desmids? I have sent him all of mine, including a new one on Micrasterias that I am mailing today. I am very much interested in tropical and subtropical desmids, and should be glad to exchange some collections with him, if he is willing. I have some extremely rich gatherings from the southeastern part of the United States, which Dr. Krieger says are among the best he has even seen.

About a year ago I was in Washington, D.C., and had some nice talks with Mr. Paul Conger, of the Smithsonian Institution, with whom you are probably acquainted. I mentioned to him a method that I have found useful for destroying the cell contents of desmids, in order to obtain empty cells so as to be able to determine their wall markings. He has tried it on diatoms, and says that it is good under certain circumstances, and far more easy than the usual boiling in strong acids. Briefly, the method uses two common chemicals, hydrogen peroxide and "Chlorox" which is a 5% solution of sodium hypochlorite that is sold as a household bleaching and disinfecting agent. No doubt a similar preparation is sold in your country. To the water containing the diatoms or desmids, add about 10% of the "Chlorox", allow to stand for a few hours, or overnight, then add, slowly, the hydrogen peroxide. A brisk reaction takes place, with evolution of oxygen (and chlorine?). If the chloroplasts are not removed at the first trial, the process may be repeated, with no damage to my desmids, and of course your diatoms are still more resistant. I have even boiled desmids in the "Chlorox" solution before adding the peroxide, with no damage. Mr. Conger says that he has found the process useful in breaking up solid pieces of diatomaceous earth, soaking first in "Chlorox" and then adding peroxide.

Sincerely yours,

Shiranui, Uto,
Sept.,8th, 1956

Dr. Arthur M. Scott,
2824 Dante St.,
New Orleans 18, LA

Dear Dr. A.M.Scott,

I wish to return my best thanks for the two publications you were so kind as to send me.

These years I have been suspended from my position, and now I have newly gotten my position in Yatsushiro High School.

This summer I observed the desmids near Yatsushiro City. I wish to find that desmid is scanty in newly cultivated land from sea.

With my best wishes,

Yours sincerely,

M. Mori

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

July 22nd,-57

Dear Dr. Arthur M. Scott,

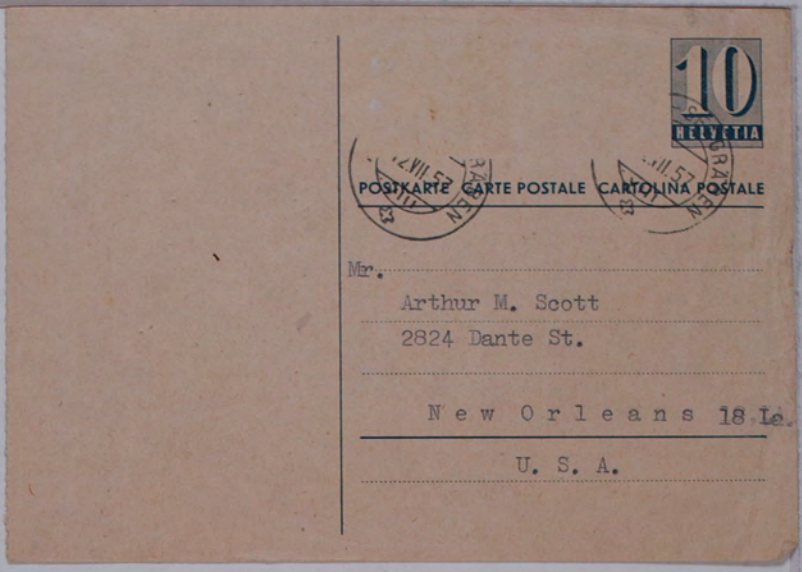
I wish to express my hearty thanks to you for the interesting papers which you have kindly sent to me. I was very much surprised to know Dr. Kriegerís death. We deeply lament his death.

I am now studying the distribution of desmids, comparing those in paddy field, low land which is cultivated in the sea with those cultivated up land among mountains,

Your sincerely,

M. Mori

M. Mori



Seegräben, 11. 7. 57
Kt. Zürich

Werter Herr Kollege ,

Mit vielem Dank habe ich Ihre und Kriegers Desmidiaceen-Arbeit , betitelt: " Einige Desmidiaceen aus Peru" , die in der Hydrobiologia erschienen ist, erhalten.

Auf einen Punkt möchte ich Sie indessen noch aufmerksam machen, nämlich, das der Name Eustrum latum schon vergeben ist, und Ihre Wiederholung somit eingezogen werden muss.

Eustrum latum spec. nov. findet sich bei MESSIKOMMER , E. "Beitrag zur Kenntnis der Algenflora und Algenvegetation des Hochgebirges um Davos Beiträge zur geobotanischen Landesaufnahme der Schweiz Heft 24, 1942 pag. 138 , Taf. III , Fig 7.

Noch in diesem Jahr sollten auch 2-3 Arbeiten von mir aus dem Druck hervorgehen und es wird mir ein Vergnügen sein, Ihnen je 1 Expl. davon überreichen zu können .

Mit freundl. Grüssen verbleibe ich
Ihr ergebener Edw. Messikommer

August 1 1957

Dr. Edwin Messikommer,
Seegräben, Kt. Zürich,
Switzerland.

Dear Dr. Messikommer,

Thanks for your card dated July 11th, advising me about the mistake in using the name Euastrum latum. It had also been noticed by Dr. Hannah Croasdale, who wrote me about it a couple of weeks ago.

The names for the Peruvian paper were selected by Dr. Krieger, so naturally it did not occur to me to question them, for his library resources for checking names must have been far superior to mine. But even if I had tried to check the name, I should not have succeeded, because I do not have your 1942 paper in which it was published. You have very kindly sent me copies of your papers since 1948; but of the earlier publications the only ones that I possess are photocopies of Rabenhausen 1927, and Obertoggenburg 1935.

I will make the correction at the first opportunity, and shall use the name Euastrum neolatum Krieg. & Scott, which ought to be safe enough.

It seems to be impossible to prevent such mistake occurring, even with the resources of a large library and card index. Prescott used the name Cosmarium rotundum in the paper by Presc. & Scott (1952) on South Australian desmids; it proved to have been used by Turner 1892 (1893). This error is being corrected in a paper by Scott & Grönblad on New and interesting desmids from southeastern United States, 1957; which you will receive soon, and the name of the desmid is being changed to C. calossissimum Scott & Grönbl., = C. rotundum Presc. & Scott. But in the new paper on USA desmids Grönblad chose the name Cosmarium strabo for a peculiar little desmid for which I had jokingly suggested the name C. cockeyedium ('cockeyed' is a slang or colloquial English word meaning skewed or crooked). You would think that "strabo" would be perfectly safe, but when I was in Michigan a month ago, working with Prescott's iconograph, I discovered that the name Cosm. strabo had been used by Brühl & Biswas (Loktak Lake, 1926), for a desmid which is obviously, from their description and illustration, nothing more than a forma of C. Lundellii var. ellipticum.

I have collaborated with Prescott and with Grönblad in several papers that are now approaching the publication stage, and of course I shall be sure to send you reprints as soon as they become available.

With best regards and good wishes,

Sincerely yours,

July 5 1956

Mr. Charles P. Mountford,
25 First Avenue,
St. Peters, S. Australia.

Dear Mr. Mountford,

I have just discovered a rather silly mistake in the paper by Scott & Prescott, "Some freshwater algae from Arnhem Land", and I hope it is not too late to have it corrected.

On page 4 of the Ms. there is a tabulation of 10 geographical areas, the first of which reads "The Eurasian land-mass". This should read "The Eurasian temperate zone". Will you please see if you can correct it?

The mistake occurred through my having confused the German words "massig" and "mässig", which have quite different meanings, and I discovered it the other day when reading another German paper where the word "mässig" occurred and the content clearly showed the meaning to be "temperate".

I haven't heard from Ray Specht since he came to California early this year. In his last letter from Adelaide he wrote that after spending about eight months in California he expected to drive through southern U.S. on his way to New York, and might have an opportunity to visit me in New Orleans. The time has nearly expired now, so I may have the pleasure of seeing him soon.

If there is anything new that you can tell me about publication of the Arnhem Land reports I should of course be very glad to hear it. Specht said that the printer was supposed to submit final proofs of the botanical volume this summer.

With kind regards,

Sincerely yours,

25 First Avenue.
St Peters.S.Aust.
Feb.7th.1955.

Dear Mr Scott.

I am ashamed to say that not even the first volume of the Arnhem Land reports has been completed. I have met with humbug and Departmental delaying tactics all along the line. But the scheme is definitely in the way and the first volume is slowly going through the press. We should now be able to travel surely, if slowly, toward the publication of all the research work of the expedition, which, except for the fishes, is practically complete. Your work will come in the third volume, and should Ray Specht be in Australia, he will be the immediate editor with whom you will deal

I am really sorry that a really good piece of research work, like yours is lying idle, but for the time being, there is little we can do about it. I will know better the position by the time you return from overseas.

yours sincerely
Charles. P Mountford
Charles.P.Mountford.

Arthur.M.Scott.
2824 Dante St
New Orleans. 18.L.A.
U.S.A.

Please return.
Scott

April 21 1955

Prof. R. Margalef,
Calle Encarnacion 68,
Barcelona, Spain.

Dear Prof. Margalef,

It was very kind of you to send me the reprint of your paper on the Laguna de Ariguanabo that I asked for.

In my last letter I mentioned that it was three years ago that my wife and I visited Cuba, but on taking out my Cuban collections I find that this one was made on Dec. 26 1948, more than six years ago. Tempus does fugit, indeed!

My material from Ariguanabo contains a good many more desmids than yours, perhaps because I am accustomed to collecting them. I have seen all that you list, and a quick glance at a single slide showed the following that I could recognize at first sight: Eu. abruptum, Cosm. contractum, C. scrobiculosum, a smooth form of C. dentatum without any spines or teeth, Micras. pinnatifida, M. truncata v. pusilla, Onych. laeve and v. micracanthum. In addition there are several others that I cannot name off-hand.

The Cosmarium sp. (Lam. II,9) is probably C. triplicatum, though I did not see any empty cells to make an exact determination.

C. dentatum varies considerably in the number and size of the teeth. The typical form has small short teeth on the lower lateral margins and a few intramarginally near the basal angles, none on the upper lateral margins nor the apex. There are no teeth in the central part of the face, which is punctate-scrobiculate with a central internal thickening. The cell is remarkably like C. Askenasyi, as West & West observed, though C. Askenasyi is much larger and differently shaped; I have it from Indonesia and North Australia. In some of my collections from southern USA there is a smooth form of C. dentatum, like the one I just saw in the Cuban material, and there is still another form with small slender teeth, which may properly be termed spines, all around the margin and a few intramarginally near the basal angles.

I had the pleasure of meeting Hermano Leon in Havana; in fact it was his assistant, Hermano Alain, who took me to the Laguna de Ariguanabo. The Laguna is not very easy of access, particularly after heavy rains as was the case just before my visit. The association of macrophytes seemed to me quite peculiar; I refer to Eichhornia crassipes growing in company with Nymphaea alba and Utricularia. In the southern part of USA, E. crassipes has become a serious pest, covering entire lakes and slow streams, and for me it is an indicator of conditions unfavourable for desmids. On the contrary Nymphaea and Utricularia are highly favourable for desmids. In the thousands of habitats that I have seen I can recall only one (in Louisiana) where Eichhornia, Nymphaea and Utricularia grow together.

With my best regards and thanks,

Sincerely yours,

March 5 1955

Prof. R. Margalef,
Calle Encarnacion 68,
Barcelona, Spain.

Dear Prof. Margalef,

I have just received from Paris a very interesting book by Bourrelly & Manguin, 1952, "Algues d'Eau Douce de la Guadeloupe et Dependances", and therein I find a reference to a paper that you published in 1947, "Algas de Agua Dulce de la Laguna de Ariguanabo", (Inst. Biolog. Apl. IV). This paper is not among those that you have kindly sent me, and if you have a reprint available I should be grateful if you would send it to me. If not, please give me the complete citation to the journal in which it was published, so that I may try to get a photocopy.

Three years ago my wife and I made a short visit to Cuba, between Christmas and New Year, partly for pleasure, and partly so that I might try to get some desmid collections. Before starting the trip I had made a careful study of two extremely interesting books, "Itineraires botaniques dans l'ile de Cuba", by Frere Marie-Victorin, Directeur de l'Institut Botanique at Montreal, Canada. These two volumes contain excellent phytogeographic and geologic descriptions of many parts of Cuba, and from my study I arrived at the conclusion that in general the soil conditions and chemistry in Cuba were unfavourable for desmids, because of their high calcium and magnesium content. However, there is one region, at the extreme western tip of the island, in the Province of Pinar del Rio, where the terrain is flat, the soil is sandy and siliceous, and there are numerous shallow lagoons with aquatic plants such as Nymphaea, Cabomba, Myriophyllum, and Utricularia, which I know to be indicators of favourable desmid conditions.

After spending a few days in Havana, and making some collections from places within 40 or 50 miles radius, including the lagoon of Ariguanabo, I rented an automobile and chauffeur, and we srarted out for Pinar del Rio, where I expected to spend two or three days exploring the lagoons. But near a small village named Concepcion del Sur the car skidded on a wet and slippery road and crashed into a conerete bridge railing. My wife and I were painfully though not seriously injured and we had to return as quickly as possible to New Orleans. So I never reached Pinar del Rio, and I have not much desire to go back to Cuba.

My collections from Ariguanabo are the best of the few that I made; the others contain few or no desmids. Even Ariguanabo contains only a comparatively small number of desmids, and those are mostly of species that are common in southern USA. I have not yet worked up this material, but one of these days I shall get around to it, and then your paper will be very helpful.

Last week I sent you a paper by Grönblad & Kallio describing a very strange new desmid genus that I found in Brazilian material.

With kind regards, sincerely yours,

Dr. Scott. A.M.
2824. Dante St. New Orleans. La.
U.S.

Kora, Shiranui-mura, Uto-gun
Kumamoto-Ken, Japan.

Dear Dr. Scott A.M.

I have found you in the list of Phycological Society of America and I am very glad to write you.

I am told desmid is abundant in shallow pockets or ditches among sand dunes or plains in Louisiana. In Japan, desmid is common in the ponds among the sandy deposit (granit decomposition) of alluvial fan. They often have a luxurient supply of ground-water in their basins and the chlor-content of their water is vividly lower than that of neighbouring district. But even in sand dune, desmid does not thrive close to sea-shore as the chlor-ion penetrates from the seawater.

I am interested in the freshwater algae from lowland or from the lower-course of river. I have sent my small report. I wish your kind advice to me.

Yours truely
Michiyasu, Mori.

5/IV. 1955

Dr. Arthur M. Sco

2B 24 Dante St.
New Orleans 18. LA.

U.S. America

PAR AVION
航空

この郵便物には何物も封入又は添附できません
Nothing may be contained in or attached to this letter.

折込線

ここにも通信文を記載することができます This space is also for correspondence.

Midoriyama-cho, Koya, Shiranui-mura, Uto-gun, Kumamoto-ken, Japan.

Dr. Arthur M. Scott
2B. 24 Dante St.
New Orleans IB. LA.

Shimomizuma,
Kora, Uto-gun, Kumamoto-ken.
Japan.

Dear Dr. A. M. Scott

I recieved your two mails on 23. Mar. Thank you very much for your kindness.

I am very glad to find the description that the sandy district of Gulf-district is abundant in desmid and to hear your precious oppinions about it. I have been wondered why the old district of geological age and the region of igneous rock are rich in desmid.

According to your paper, I suppose, the chemical compounds of water are main factors for desmid-environment and the geological character of basin merely serves to keep the water favourable for desmid.

I have now also similar impression after I made a survey in a sandy-district in Japan.

I was also astonished at the curious desmid of Scottia, and I hope you will soon find the same species in North America.

With my best wishes

Yours sincerely
Michiyasu, Mori.

April 4 1955

Mutual Benefit Health & Accident Assoc.
1219 Richards Bldg.
New Orleans 12, La.

Policy 1090H-237825-49M

Gentlemen,

My wife and I are going to Europe this summer, and since the above policy does not protect us outside of North America I request that it be suspended at 12.01 am May 3rd 1955 and reinstated at 12.01 am August 28th 1955. The expiration date of the policy would therefore have to be extended by 118 days.

Please advise how you will handle.

Very truly yours,

Dec 21 1954

Dr. J. A. Martins d'Alte,
Instituto de Botanica, Universidade do Porto.
PORTO. Portugal.

Dear Sir,

On my return from a vacation I received the reprint of your recent paper on Portuguese desmids, and I wish to thank you very much for it.

In the list of publications of the Institute I notice one by Dr. A. Rozeira, Manipuño de Desmidias da Guine Portuguesa, and since I do not know Dr. Rozeira's address, I should be much obliged if you would ask him to send a reprint to me, and another to Dr. Rolf Grönblad, Centralgatan 86, Karis, Finland. I am now working with Dr. Grönblad on some very rich desmid material from Uganda and the Sudan, and I am anxious to obtain all the literature on African desmids.

With many thanks in advance, I am,

Sincerely yours,

April 18 1952

Murphy,
417 N. Broadway,
Joliet, Ill.

Gentlemen,

I am enclosing herewith a microfilm from which I want you to make 5x7 enlargements of the first 73 frames of text. Do not print the remainder consisting of illustrations, because I already have prints of them.

Leave about 1" margin on the left side of the sheet for binding, then enlarge the text as much as possible on the 5x7 sheet. I do not care about margins or borders.

Enclosed is $4.00 in cash. If there is any change you may return it in stamps.

Very truly yours,

NEW YORK STATE COLLEGE OF AGRICULTURE
AT CORNELL UNIVERSITY
ITHACA, NEW YORK

CORNELL UNIVERSITY AGRICULTURAL
EXPERIMENT STATION

WILLIAM I. MYERS, DEAN

DEPARTMENT OF BOTANY

15290 - Desmides of La.

September 25, 1952

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

Dear Sir:

I wish to thank you for sending me a copy of your separate on Desmides of Louisiana. I am glad to have this paper for my reference file. Maybe a little later on I will have something in the line of desmides to send to you. Under separate cover I am sending you separates on Algae, which may be of interest to you.

Yours very truly,

W. C. Muenscher

W. C. Muenscher
Professor of Botany

WM/mm

April 4 1953

Dear Dr. Messikommer,

Our mutual friend, Lektor Einar Teiling, has told me that you are one of several European algologists who are compiling iconothecas of fresh-water algae. He has suggested that for future papers I obtain additional copies of the plates, for distribution to these men, and I shall try to do so.

In the meantime I am sending you extra copies of the reprints which I have available, which you may cut up for your iconotheca.

A week or so ago I sent our friend Ruzicka two sketches of desmids enclosed in a thin transparent membrane, similar to those that he described in his recent paper. But there is a big difference; in one these there is one whole and one semicell of the same species; in the other there are three cells of three species and two genera. Perhaps my suggestion that the desmids had been secreted by an animal was not so crazy after all; at least it is the only explanation I can think of that will fit this phenomenon. The animals might be rotifers, or tiny fishes or tadpoles. Rotifers are known to eat algae, and I have actually seen two instances of a very large soft-bodied rotifer with desmids inside the body cavity.

Sincerely yours,

Jan 29 1955

Mr. C. P. Mountford,
25 First Ave.,
St. Peters, S. Australia.

Dear Mr. Mountford,

It is now more than two years since I sent you the Ms. of the paper "Some freshwater Algae from Arnhem Land", and naturally Prof. Prescott and I are anxious to know when it may be printed. Early last year Mr. Specht wrote that he thought that work on the Botany volume of the Report might get under way by the end of 1954, but I have had no reply to a letter I wrote him last September enquiring about this and other things.

My reason for writing you now is to let you know that I am going to Europe this summer, leaving here in May and returning in September. Prof. Prescott also goes away every summer during the vacations from June to October, so neither of us would be able to check proofs during this period.

I hope you will drop me a few lines at your convenience and let me know how things are progressing. Have any other volumes of the Report been issued yet?

With kind regards,

Sincerely yours,

To open cut at top

BY AIR MAIL

ADELAIDE 12 15PM SOUTH AUS

AIRLETTER

Mr. Arthur M. Scott,
2824 Dante Street,
NEW ORLEANS. 18, LA.
U.S.A.

First fold here

Third fold here

Second fold here

If anything is enclosed, letter will be sent by ordinary mail.

25, First Avenue,
ST. PETERS, S.A.
12th January, 1953.

Mr. Arthur M. Scott,
2824 Dante Street,
NEW ORLEANS. 18, LA. U.S.A.

Dear Mr. Scott,

By yesterday's mail I received your paper on the algal flora collected on the Arnhem Land Expedition, also the plates.

Please accept my congratulations for such an outstanding piece of research and the high quality of the illustrations.

I also have your letter of 6th December asking for alterations in the bibliography. That has been included in the manuscript.

Mr. Specht has taken the duplicate copy to have a look over it. No doubt you will hear from him in the near future.

With my very best wishes,

Yours sincerely,

C. P. Mountford.

(C.P. MOUNTFORD)

May 5 1953

Mr. C. P. Mountford,
25 First Ave.,
St. Peters, S. Australia.

Dear Mr. Mountford,

When the printer submits proofs of the plates for the paper "Some Freshwater Algae from Arnhem Land" by Scott & Prescott, I wish you would be kind enough to ask him to run off ten prints of each of the plates, without any text, and send them to me. Of course I shall gladly pay his charges for this.

The reason for this request is that certain algologists, principally in Europe, are compiling what they call "iconothecas" of illustrations of algae. These are "scrap-books" of cut-out illustrations of all the algae that they can lay their hands on, arranged in generic and specific order. Reference to such an iconotheca makes much easier the task of running down a rare or possibly new form, to see whether it has been published before, instead of having to wade through the voluminous and scattered literature.

Naturally I am anxious to know when the Botanical volume will appear, and if you can give me an approximate date I should appreciate it very much. Just now I am impatiently awaiting the reprints of another paper on desmids from S. Australia that was published in Trans. Roy. Soc. S. Australia last January.

I asked Ray Specht to order for me a complete set of the volumes of the Reports of the Arnhem Land Expedition, and this is merely a reminder to you to see that my name is on the list. Your several articles on Arnhem Land in the National Geohraphic magazine are highly interesting, and I have read and re-read each of them several times.

Sincerely yours,

Dec 6 1952

Mr. C. P. Mountford,
25 First Ave.,
St. Peters. S. Australia.

Dear Mr. Mountford,

In the bibliography on page 101 of the MS which I sent you about a month ago, there is an item reading as follows:

Scott, A. M., and Prescott, G. W. 1952. The algal flora of southeastern United States VI. Additions to our knowledge of the desmid genus Euastrum. Hydrobiologia (in press).

This paper has now been published, and I can give you the full citation, which should read as follows:

Scott, A. M., and Prescott, G. W. 1952. The algal flora of southeastern United States VI. Additions to our knowledge of the desmid genus Euastrum 2. Hydrobiologia IV(4): 377-398. 3 Pl.

Will you please be kind enough to make the necessary correction, and oblige,

Yours sincerely,

October 25 1952

Mr. C. P. Mountford,
25 First Avenue,
St. Peters, S. Ausyralia.

Dear Mr. Mountford,

Herewith I am sending you two copies of a MS on "Freshwater Algae from Arnhem Land", by Scott & Prescott, describing the algae found in the collections made by Mr. Ray Specht during the 1948 Expedition. In another package I am sending the original drawings of the 30 plates which illustrate the paper. Both these packages are being sent by registered mail, "return receipt requested", but I should be glad if you would acknowledge their receipt, by airmail, because on a previous occasion I never received the "return receipt" for a MS sent to Mr. Brian Womersley.

The MS is not in such a presentable shape as I would have liked. I had intended to get it copied by a commercial firm, but found that this would have cost about $100.00, so I wrote it again myself. Even this third copy has numerous errors, but I have proof-read it carefully, and I think all the corrections are easily legible. I don't know what you will do about checking the printer's proof, but if you care to send me the galley-proof by airmail, I shall gladly check it and return it also by airmail. Of course I have retained another copy of the MS for this purpose, and for my records.

You will note that I have included in the MS an alphabetical list of the genera and species. This is not intended to be included in the paper, but is for the purpose of compiling an index, since I have no doubt that this Botanical volume of the Expedition report will be indexed.

Of the 30 plates, 28 are full size, and 2 are small ones, intended to be inserted in the paper as text figures. Text figure No. 1 is a sketch map of the region, and text figure No. 2 is of an interesting new variety of a Staurastrum that I found in the second lot of material that Mr. Specht sent me, after the large plates were completed.

Our paper describes all the algae from these collections, with the exception of the diatoms. Prof. Prescott made arrangements with Dr. Ruth Patrick, Academy of Natural Sciences, Philadelphia, to work up the diatoms, and the last I heard from him, a couple of months ago, was that she had her report just about completed, and was going to draw the necessary illustrations. I assume that she will send her paper and drawings directly to you. I should think that her paper on the diatoms would best be treated as a separate chapter in the botanical volume, since diatoms are usually handled by a different group of specialists, who, as a rule, are not much interested in the other freshwater algae. Naturally, you will have to make the decision as to this.

Will you please make a note that Prescott and I would like to have a total of 300 reprints of this paper, including the 100 copies that Mr. Specht said would be allotted to us without charge. If you will have these reprints sent to me, with the invoice, I shall send a remittance immediately either to you or to the printer.

Both Prof. Prescott and I have greatly enjoyed the opportunity of working on Mr. Specht's material, and I think I can say, without egotism, that the paper will be one of the most important ever published on Australian freshwater algae.

Sincerely yours,

Cc to Mr. Ray Specht.

NEW YORK STATE COLLEGE OF AGRICULTURE
AT CORNELL UNIVERSITY
ITHACA, NEW YORK

CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION

WILLIAM I. MYERS, DEAN

DEPARTMENT OF BOTANY

L. KNUDSON, PROFESSOR
L. C. PETRY, PROFESSOR
W. C. MUENSCHER, PROFESSOR
L. F. RANDOLPH, PROFESSOR
D. G. CLARK, PROFESSOR
R. T. CLAUSEN, PROFESSOR
H. P. BANKS, ASSOCIATE PROFESSOR
C. H. UHL, ASSISTANT PROFESSOR

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

Dear Sir: I wish to thank you for favoring me with a reprint of your article on the interesting "New Varieties of Staurastrum Ophiura." Under separate cover I am sending you some papers on algae that may be of general interest to you. Should you be able to spare a copy of your article I would appreciate it if you could send one to Mr. George Schumacher, c/o Emory University Field Station, Newton, Baker County, Georgia. I am sure he would appreciate one since he is working on plankton algae of some Georgia Lakes.

Sincerely yours,

W. C. Muenscher

May 21 1950

Dr. Walter C. Moore,
Loyola University,
New Orleans, La.

Dear Dr. Moore,

I heard your lecture some time ago, on the subject of fish mortality in Lake Providence, but since I know little about limnology it was difficult for me to follow. Therefore I am glad to have your reprint which I can study at leisure. I hope this "No. 1" is the forerunner of many similar studies on other Louisiana lakes.

Last year I visited several lakes in north and central Louisiana, for the purpose of collecting desmids, but was considerably disappointed in the results, most of them being hard-water lakes unsuitable for desmids. They included Caddo Lake, Lake Bistineau, Black Lake, Catahoula Lake, and Lake Chicot in the Chicot State Park. If your collections contain desmids, I should greatly appreciate an opportunity of examining them, and perhaps (with your permission) of adding some of the material to my own Louisiana gatherings. Probably your collections are made with a plankton net, but I get much larger quantities, and greater variety of forms, from squeezings from aquatic plants such as Myriophyllum, Ceratophyllum, Utricularia, etc.

I hope you will not be offended if I offer a small criticism. It seems to me that a good many limnological studies are made by investigators who are more familiar with the microfauna than the microflora, with the result that the algae are merely mentioned, or if any identification is given, it is only to the genus. But the algae present in a gathering afford a reliable indication of the characteristics of an aquatic habitat, much better, I believe, than the fauna. Several authors have proposed classification schemes based on the particular species of desmids present, or on the relative abundance of the various groups of algae, such as the Myxophyceae, Chlorophyceae, Desmideae, and Bacillarieae. For this purpose, however, it is necessary to carry the identification at least to the species, and frequently to the variety. For instance, Micrasterias radiata, specific form, is tolerant of a wide range of pH values, and is found in both soft and hard waters. But most of the dozen or so varieties of this species are strictly acid-water forms, never found in a pH higher than about 6.5.

Recently I received from Prof. Gunnar Nygaard, Copenhagen, a very valuable book, "Hydrobiological Studies on some Danish Ponds and Lakes", 1949, embodying the results of many years investigations. I am sure you would find it very interesting, and if you have not seen it, I should be glad to lend it to you.

If you would like to see some really rich desmid collections from Florida, with many new and rare species, come over to my house some evening, or on Saturday or Sunday. I would like you to see my outfit, which I think is pretty good for an amateur, including one of the finest microscopes in the city, which you might like to play with for a while. And I can show a few tricks for drawingswith the camera lucida which have surprised several miscoscopists to whom I have shown them. But please phone me first and let me know when you are coming.

Sincerely yours,

June 7 1950

Herrn Ejnar Munksgaard,
Nørregade 6,
København K., Denmark.

Dear Sir,

Will you please send one copy each of the following publications to:

Dr. Minoru Hirano,
Dept. of Botany, Faculty of Science,
University of Kyoto,
Kyoto, Japan.

Gisen, S. Danish Charophyta. K. Dansk. Vidensk. Selsk. Biol. Skrift 3 (1) 1944

Jørgensen E.G. Diatom Communities in some Danish Lakes and Ponds. Ibid. 5 (2) 1948

Nygaard, G. Hydrobiological Studies on some Danish Lakes and Ponds. Ibid 7, 1949.

Please send me your invoice and I will send you a cheque immediately.
If you wish, you may refer to the author of the last-named book, Lektor Gunnar Nygaard, Sundvej 12, Hellerup, who knows me.

Very truly yours,

BIOLOGY DEPT.
SALEM COLLEGE
WINSTON-SALEM, NORTH CAROLINA

FOUNDED 1772

25 November 1960

Dear Dr Scott:

I am much indebted to you for the long, informative letter on your adaptations of the camera lucida for drawing desmids, and also particularly favored by the reprints with their lovely pictures. I have shown them to my "advanced" biology students (plant morphology is the only course in botany that can claim to be remotely advanced here!); they showed a real glimmer of interest and admiration. Who knows, maybe they will become dedicated to something after all? With hopes for an honors program in the horizon, this is all to the good.

With best wishes,

Yours ever,

Dan McKinley

Daniel McKinley

BIOLOGY DEPT.

SALEM COLLEGE

WINSTON-SALEM, NORTH CAROLINA

FOUNDED 1772

15 November 1960

Dear Mr Scott:

Recent correspondence with Dr Hannah Croasdale of Dartmouth has acquainted me with her method of drawing desmids by use of a camera lucida. She has described briefly certain modifications that you have made in an Abbe Camera Lucida. Do you make use of standard equipment in this modification? Or, if not, is it something that I could devise by trial and error?

Dr Croasdale indicates that your drawings of desmids are better than hers. I wonder if you possibly have any extra reprints of your papers on algae? I should certainly appreciate receving a copy of any that you have a supply of.

One of my students has brought in some very rich material from the mountsins recently. A month ago, a jar of muck that was full of Spirogyra in all stages of conjugation. Many fine desmids, too. This seems to be very good "country" for them.

With best wishes,

Daniel McKinley

Daniel McKinley

November 19 1960

Dr. Daniel McKinley,
Biology Dept.,
Salem College,
Winston-Salem, N.C.

Dear Dr. McKinley,

For several years I used a Bausch & Lomb camera lucida of the Abbe type with an ordinary laboratory type microscope with a vertical monocular tube. In 1946, when microscopes again became available after the war, I contemplated the purchase of a binocular scope with inclined ocular tubes, but was worried by the knowledge that if the camera lucida were attached to the inclined ocular tube it would require a drawing board inclined to the table at the corresponding angle, and that the board would have to be placed some distance back from the edge of the table, decidedly inconvenient, though Bourrelly in Paris is still using this arrangement.

It seemed to me that it ought to be possible to make some modification that would enable the drawing to be made on the horizontal surface of the table, and right alongside the scope. After a little experimenting I found that this could be accomplished very simply, by merely detaching the mirror from the camera lucida and supporting it on a separate stand, made from a piece of ¼" x 1" aluminum bar bent to the required shape and screwed to the table. The "head" of the camera lucida with the semi-reflecting prism is left in place on the inclined ocular tube, and simply swung out of the way when it is not in use. The mirror is supported in a plane at 45° with the plane of the table, as usual. So that I could place a plastic dust-cover over the scope I made a new and shorter mirror bar, to avoid spoiling the old long one by cutting it off; this is not too difficult if you are handy with tools.

In my set-up the center of the mirror is about 6" horizontally from the optical center of the right-hand eyepiece, and 12½" above the table. This longer optical path results in a slightly larger drawing, and the 6" horizontal distance gets the drawing paper away from the base of the scope and avoids interference from the knobs of the mechanical stage, which formerly used to project into the drawing area.

There is one peculiar and unexpected result from this set-up. If you have a desmid in the microscope field, with its long axis in a north-south direction, you will find after you have traced its outline through the camera lucida, that the drawing is rotated counter-clockwise through an angle of about 30°, corresponding to the angle of the inclined ocular tube. This is quite disconcerting at first, for the muscles of the hand and wrist try to direct the pencil to follow the image seen by the eyes, and it takes a few days practice to overcome this tendency.

All of my drawings of desmids of average size, say from 25 to 100 u, are made with the combination of a 44x apochromatic objective and 20x compensating eyepiece, which gives a drawing magnified about 1400x. This is considerably larger than most desmidiologists draw, but it enables me to make a more accurate drawing and to show the details more clearly. Hannah Croasdale, Prescott and Grönblad are now using the 20x eyepiece. Prescott even bought a 30x eyepiece, but found, as I could have told him, that this is too high a power and destroys the definition. For very small desmids, say less than 25 u, I frequently use a 60x dry apochromatic objective, which gives a drawing magnified about 2200x.

Another way of getting a larger drawing is by interposing a negative lens between the mirror and the drawing paper. I made a stand to support such a lens

about 3" diameter and of about minus 1½ diopters strength, placed about three inches below the mirror. You could use a smaller lens of lower strength if it were placed close to the head of the camera lucida, and such lenses could be bought fairly cheaply from any optical shop that grinds spectacle lenses. Mine was part of a war-surplus achromatic telescope lens.

My drawings are made on a tracing paper named Albanene #105L, made by Keuffel & Esser. I buy it in packages of 250 sheets 8½" x 14", and I cut the whole package on a circular saw to make sheets 7" x 8½". Then I assemble about 50 sheets into a pad by gluing a strip of brown Kraft paper along one of the long edges. For the large plates in my publications I use the same paper, fastened to the drawing board at the corners by thumb-tacks or small pieces of draftsman's tape. Under this I place the individual camera lucida drawings, and juggle them until I get a good arrangement and fit. Then I trace them on to the larger sheet. Prescott uses the vluish tracing cloth, but my paper is more transparent, cheaper, and just as satisfactory. Habrah is now using it, and likes it very well.

I am enclosing a sample of one of my camera lucida drawings, which you may keep, and under separate cover I am sending reprints of my papers written in collaboration with Grönbkad. I have also published a number of others in collaboration with Prescott, but if you need them I would like you to get them from him, because he always orders twice the number of reprints that I do, and my supply is very low: in fact most of the earlier papers are exhausted.

Larry Whitford visited me early this year and evinced quite an interest in my microscope set-up and method of working. If you ever come to New Orleans I would be delighted to make your acquaintance.

Sincerely,

Illinois State Normal Univ.
Biology Department
Oct 8th 1950

Dr. Arthur M. Scott,
2824 Dante
New Orleans 18 La.

Dear Sir,

Thank you for your reprint. I am right at this time at work teaching the desmids and I appreciate your reprint.

Sincerely,
Blanche M. Avery