



Hunt Institute for Botanical Documentation  
5th Floor, Hunt Library  
Carnegie Mellon University  
4909 Frew Street  
Pittsburgh, PA 15213-3890  
Telephone: 412-268-2434  
Email: [huntinst@andrew.cmu.edu](mailto:huntinst@andrew.cmu.edu)  
Web site: [www.huntbotanical.org](http://www.huntbotanical.org)

The Hunt Institute is committed to making its collections accessible for research. We are pleased to offer this digitized item.

#### *Usage guidelines*

We have provided this low-resolution, digitized version for research purposes. To inquire about publishing any images from this item, please contact the Institute.

#### *Statement on harmful and offensive content*

The Hunt Institute Archives contains hundreds of thousands of pages of historical content, writing and images, created by thousands of individuals connected to the botanical sciences. Due to the wide range of time and social context in which these materials were created, some of the collections contain material that reflect outdated, biased, offensive and possibly violent views, opinions and actions. The Hunt Institute for Botanical Documentation does not endorse the views expressed in these materials, which are inconsistent with our dedication to creating an inclusive, accessible and anti-discriminatory research environment. Archival records are historical documents, and the Hunt Institute keeps such records unaltered to maintain their integrity and to foster accountability for the actions and views of the collections' creators.

Many of the historical collections in the Hunt Institute Archives contain personal correspondence, notes, recollections and opinions, which may contain language, ideas or stereotypes that are offensive or harmful to others. These collections are maintained as records of the individuals involved and do not reflect the views or values of the Hunt Institute for Botanical Documentation or those of Carnegie Mellon University.

#### *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.

recieved in some quarters and hotly in others. I think that it is the only reasonable approach that we have in our Pennsylvanian deposits.

I think for a lark one of these days + will try to compare the sedimentation of the Penn. of Ohio and the Paleocene of Dakota. Do you think this would have any merit? I do not know what it would prove. It may be an interesting corollary to Schopf's "Was decay important in the formation of coal"

Al I think this is about enough- hope you are not too bored.

Meanwhile our best regards to you Betty and Paul,

as ever

*Rein et al*

RUSSELL A. BRANT

GEOLOGIST

479 W. ROSSLYN AVENUE

WORTHINGTON, OHIO

LUDLOW 1064

March 22, 1954

Dear Al and Betty,

Long time no hear. Just now I am a little more relaxed than I have been for some time so I just thought that I would let you know that we still think about you.

We have not seen your folks since last fall, but expect to see them one of these sundays. I did make the aquantance of one of your Harvard friends, Paul Miller by name, from Minot. Had a moderately long visit with him about Survey support for a summer project- only we don't have the money.

I have been progressing with a report on the Lower Kittanning in Ohio, which will probably come out in a month or two. How is coal research coming along in Dakota- generally- geologically as well as botanically and technically? Our petrography lab is in full swing at present. We are still preparing the coal blocks and still have some collecting to do.

I have busied myself with German during the evenings for the past few months, have done fairly well untill the last month when a long series of illnesses have overtaken the entire family, This includes one fracture of the phalanx and ~~wrist~~ the associated joint which I encountered in an unfortunate meeting with the little red wagon. Mostly we are somewhat well except for my sinusitis, Oh Glorious climate! Do you like the Dakota weather yet?

Do you see much of the geologists? Give them my regards when you do - also those fellows you work with- Ellman, Hoepfner, Eleur, Oppelt; I don't remember too many of the maintenance gang but if he is still there say hi to Bob Wills.

Our young sprout is flourishing at about 19 lbs with <sup>10</sup>teeth now. He is growing like a weed and is taking on additional personality every day. You and Betty of course are watching and enjoying similar developments, though somewhat more advance, in Paul. You did not give me the ETA on the new one Al. has this event occurred yet?

I wish we could have visited a little more at the Toronto meeting, I did not get more than brief meeting with you this time. It is remotely possible that we may come up to Dakota sometime this spring or summer, at which time we can visit, I hope.

This letter seems to be jolly well mixed between professional and personal gossip. But I have often wondered if Jerry W. ever got together with Laird on the DTA apparatus. We are thinking of some experiments along that line here. These would probably be through or in conjunction with the OSU engineering experiment station. Illinois has produced some very interesting experiments - as you are probably familiar- along this line; you probably recall Glass's results on Illinois coal. Have you gotten to do any work on the Pollen studies of the Lignite beds? Also what is the status of your GSA Monograph- Was your dissertation to come out as a memoir? I have forgotten - forgive me.

My own activities will shortly take me to field to do some grass roots geology. We had an interesting conference last week. Cross was here from WVA, and Bill Merrill from Illinois ( I don't believe you know him) + <sup>5</sup>sturgeon from a <sup>10</sup>hour to confer with ~~the~~ us on the defining of Pennsylvanian units. You may be interested that we will probably adopt the base of the Coal bed as the base of the cyclothemic unit, and we will map the pennsylvanian units on this basis. This has been the 1st step that I have seen to get us out of our stratigraphic chaos since I have been here. No doubt this will be warmly

the greater glory of science is concerned.

My research program is coming along quite well. I just published an expansion of that work I reported at Boston when you were there. I have about a half-dozen other projects in various stages of completion. The pollen monograph is now at the top of the priority list, and I should have it done very soon. Getting it published is another question, of course. There has been some talk of it being published as a GSA Memoir, as I apparently told you once. That is no certainty. Anyway, I think it's an important piece of work (but see above comments re fond parentage) and should be put into print.

I was indeed interested to hear of your contact with Paul Miller, whom I knew and liked very much at Harvard. I used to beat him in pool quite often. I wished that you had said a bit more about him, where he is now, and all that sort of thing. The last time I saw his father, who is superintendent of schools in Minot, he said Paul was still in the army, so I have now idea what he's up to now. I have always been quite amused to reflect on how I kidded him about his N. Dak. origin, never for a moment thinking I might some day live here. If you see him again please tell him that we would be very honored to have a visit from him when he comes back this way.

None of us have done anything about the DTA apparatus. I have been quite interested in some of Glass's results on some samples that I sent him and have thought for some time that it would be interesting to do something jointly with him on the DTA of various components of lignite. Something may come of that yet, but currently we are rather skeptical about the precision of the technique. The DTA boys are all too cosy about discussing the intimate details of their procedures to inspire much confidence in the skeptic's breast. Our big boss, Dr. McMurtrie, a chemical engineer, feels even more strongly than I that DTA workers should put their technique on a sounder scientific basis, so that results could be compared from worker to worker, before any further expansion on the present rather sandy foundation is attempted.

Something on the sedimentation of the Paleocene would be very worthwhile, but I would doubt that you would get too far with comparisons of it with the Pennsylvanian of Ohio. As I see it, the Fort Union lignitic series are exclusively fresh-water deals and must be very different in origin from most angles from the cyclothemic series with which you are working. Perhaps I have misinterpreted what you meant by "compare" though. I would say that something on the sedimentation of the Fort Union would be a big and very interesting job that could stand on its own feet.

Hope you and all the brood are in thriving condition to meet the rigors of an Ohio spring.

Best wishes.

Lignite Research Laboratory  
Grand Forks, North Dakota

29 March, 1954

Dear Russ:

Yours of 22 March was appreciated. Things have been going along here at a fast pace. Our daughter, Martha Jane, was born on February 13. I thought you had been sent an announcement. It was my intention that the Brants be so honored, and you were on the list, so if you didn't get one, it was just a mistake. She has been an exciting little lady indeed. She developed pyloric stenosis (hypertrophy of the pyloric muscle) and chalasia (very relaxed and ballooning esophagus) at three weeks and had to be operated on for the former, which is very serious since it cuts off all passage of food. She recovered amazingly fast from the operation and is none the worse for it at all now--perhaps a little behind in growth and so forth but not much. During the crucial period it was very hard on the parents, of course--and I might add, on the grandparents!

Paul is becoming more and more interesting, and, making allowances for the prejudices of fond parents, I think he's an unusual child. He talks quite well now and is even more competent physically. His birthday is this week.

Our biggest current concern is housing. The situation depresses me so that there is no question that it affects the quality and quantity of my work. We just don't seem to be able to find anything decent. As you may remember my telling you, we moved out of Park Village last September, into a ground floor apartment--very unsatisfactory: no privacy at all. Betty hates it and so do I. But we get no or little response to ads in the paper and really are quite desperate. Of course, I have never been much of a booster for this part of the country, as you know. (But not at all because of the weather--I like that fine) But I think with adequate housing we could have made a go of it.

Professionally, I continue to be very well pleased and enthused. There is no denying, though, that personal matters do spill over into ones business affairs, and I think I have about reached the limit of endurance as far as personal subjugation to

May 24, 1956

Mr. Russell Brant  
Ohio Geological Survey  
Columbus, Ohio

Dear Russ:

Thanks for devoting the major part of Monday morning to helping get information on the I. B. M. card technique. Of course, I also enjoyed the opportunity to see you again, though we certainly didn't have much time for social visiting. Perhaps there will be such an opportunity one of these days.

Under separate cover I am sending you a recent reprint of mine which might be of some interest, and several copies of the postcard that I described to you in Columbus.

With best regards to you and all, I am,

Yours very truly,

  
Alfred Traverse

AFT:rlw

Shell Development Company  
Exploration and Production Research Division

in July.

A few weeks ago I was to Williams County watching the drilling that Mr. Schaeffer, President of Baukol-Noonan, mentioned at the conference last February. It was a good trip, through very exciting country. (If I wanted to make my fortune and had a little money to invest, I'd start a gas station or motel out there. Williston will need all sorts of such things.) I didn't learn much about lignite or even about drilling (which was my purpose) because the drilling crew was having trouble with its bits and weren't getting any decent cores. Schaeffer apparently thought that I am a geologist in the sensu strictu, rather than latu, and was somewhat disappointed that I couldn't take one look at the surface structure and tell him where to dig to find 500,000,000 tons of lignite. I gave him your name and address (c/o Ohio Geol. Surv.) and told him to get in touch with you, saying that you might have some useful advice, if he sent you the maps and drilling logs. He would, of course, pay you as a consultant. I think it would be a good idea to help him if you can. He expressed great interest in your training. If lignite becomes a big thing (which it well may), and Mr. S. stays interested, you might have a big job out here some day.

A letter came from the National Science Foundation the other day asking me to rate a research program on Ohio Coals to be carried out in Orton Hall, under the direction of Dr. G. H. Gady. This was a bolt out of the blue to me. The prospectus mentioned a chief technician. I naturally wondered if this might be none other than R. A. B. I must say I was surprized to see Gady as head of the project. I should certainly like to know something about the behind-the-scenes story of this.

In closing may I say that all is going well with us. Betty had a fairly easy time of it (labor took only six hours); she is well; Paul is well. I have a garden at the University, which may produce enough vegetables to pay for the seed and effort. My work is getting along quite well. I have spent most of the time so far getting ready to work. In the year since I got my Ph.D. I have read a large share of the important work in coal petrography. I think now, between my study of Tertiary paleobotany and my more recent work with lignite petrography I am as well suited for this job as any man in the world (despite the fact that Schopf, in his usual forthright manner told me that I was a misfit).

Sincerely as ever,

We are taking our leave in September, will go to Indpls.

Grand Forks  
9 June, 1952

Dear Russ:

It was good to hear from you, of course. I can with difficulty tell you how much Betty and I miss the Brants, this despite the fact that we didn't really see very much of you. But we always planned to do so, once things got straightened out a little with us. How typical of human behavior! One is constantly putting things off until it is too late. But perhaps fate will provide the Traverses and Brants another opportunity. Anyway, we both enjoyed you both very much. It would have been fun to go on joint geological and botanical and social trips this summer, wouldn't it? (My botanizing hasn't been very EMIA systematic this year, and probably won't be. I have been keeping abreast of the local flora as seen from roadside and hutmentside. I have a copy of Stevens' flora and run down species of Senecio, Melilotus, Vicia, etc. with startling ease in its keys. I guess they must be pretty good.)

In the way of reply to your letter: I didn't have any complaints about the bookcase. In fact, I felt bad for not having been on the spot to help you with it.//I should by all means have the fruits sent to Barghoorn inasmuch as he has the most experience and best reference collection in the country. He is very busy and would probably take some time to make the identification, but when he made it it would be correct.//My speciality is pollen, and I have no reference collection for seeds and fruits or woods, a situation which must be rectified. It isn't so much a question of special magic, this identification of angiosperm fossils, as it is one of having a collection of living things and having made an adequate study of same. I should recommend this idea to you re pollen.//How strange that you are thinking of doing pollen! Now there is a field I could have taught you something about.//The car washer is on its way. I fear that it is not in first class shape. I saw the same outfit for sale in Cambles last Sat., for \$3.50. A note said that new heads are available. I hope so.

I enjoyed reading your itinerary and comments. Betty and I had planned, a year ago, to spend this summer partly in driving around, but Betty now feels that travelling with little Paul (who is sturdy, at 13 lbs., and happy) would be a dubious pleasure. We can't figure how to handle some of the mechanics of it. For instance, what do you do when the adults want to repair to a restaurant to eat? Speaking of travel reminds me that we somehow lost the AAA books you gave us. I was sheepish about mentioning it. Guess we'll join the outfit ourselves when our present insurance runs out.

I expect to play around with Pollen a little bit: there seem to be very few people in Ohio who are interested - Seare + Clichy are all whom I have found - & there seem to be contemporary interest in the pollen content of some of the Peat bogs here but actual down to earth interest seems a little weak - in other words I haven't heard of many people doing any work in the area I thought that I might just move on here till a little time with the subject - I don't quite see a good program around ancient spores at present - most of the problems right now (as far as work is concerned) seem to be soluble by stratigraphy in lithologic terms - I wonder, Al, if you would send me the car washer - brush - hose arrangement that I left this - I have \$400 in the thing & can use the item & am not rich enough yet to buy a new one. Please give my best regards to your family and to Jerry, Bob, Drappell & Ben + the office girls  
your friend  
Rene

I left immediately for Columbus - attempted to find house - we finally settled for Wuying - rents are even more depressing than in G.F. - our address at our new location is 479 W. Rowley<sup>th</sup> Worthington, O. It isn't too crowded yet - the Urtica is predominant - especially Toxocarpus radicans or a pubescens we settled in literally a field of it.

Our house is much like yours as a town only larger - we have 4 rooms + bath - large (?) kitchen - Dining room - no basement - but its ours (or is the mortgage)

We have just gotten into the house - last week - & are still acquiring furniture - In case you should come down this way we hope that you can stay with us - we got one of those hideaway beds...

I was talking with Hubbard the other day about things in general & he (Vert. Paleontologist) <sup>(Fossil)</sup> said that he had picked up some interesting fructification at one of his collecting sites (said it was like Buffaloe berry (or something of the sort.) Would you be interested in making an examination (it is from algae + or -) or would you recommend that it be sent to Bartholomew or one of his students who has specialized in Fungi?? - Hubbard was "put out" because apparently Arnold did not have any answer specific for him (I guess the trouble is that the specimen was Polygonia)

Only way I would like to hear from you about it.

June 3<sup>rd</sup>

Dear Al and Betty;

It seems like a long time but it has gone fairly fast - at least in some ways.

We were happy to hear about the arrival of Paul laboratory & trust everyone passed well.

I'll tell you Al & I am a bit nostalgic at times & think we will especially miss the volcanizing that we all could have done.

Well - 1<sup>st</sup> I want to apologize about the way I left your book case in a rather helplessly looking mess? I hope that you got it together alright. At that time our schedule was becoming quite pressed - we finally got off about 6.00 PM - & got to Benigi (?) about 9<sup>00</sup> & stayed there that night - Driving conditions through out the trip were pleasant - although the scenery was obscured by fog - in fact it was foggy from Oakland Wis. to the Strait - In the straits we passed through a mile or so of flat ice - the kids were very interested in the ferry boat ride. - The trailer rode well at speeds of up to 47.5 MPH but serious "sway" developed over that speed. - We came right down the middle of the W. Penn. - Finally got to AK.  
End of Day 4.

R. F. B.  
479 W. Rosslyn Ave  
Worthington, Ohio



Dr. Alfred Traverse  
% Bureau of Mineralogy  
Grand Forks, North Dakota

re us - brief

re aaabks  
" Schaeffer  
" Cady

Sept. 11-15 Visit with my mother and sister.  
Sept. 16-18 Return to Grand Forks.

Futhermore, Betty's folks are taking their vacation the middle two weeks of September, and they will be going to the Adirondacks about the same time that we go to Ithaca. They may drive us to I., with us to return to Indpls. via train. That is not yet definite. Also, since Betty's grandfather has just built a new place in the Adirondacks, there is a probability that we will try to squeeze our schedule still more by winging up there for a few (2-3?) days after the Bot. Soc. meetings.

If it appears humanly possible, we'll stop in Worthington on our way to Ithaca, but I'm not sanguine about the possibility. The fact that everybody will be trying to get ready for the N. Y. trek, as well as visit, in the few days we are in Indpls. makes the possibility of a satisfying visit with the Brants seem remote.

But we surely hope that another year, or at most two years, will see us nearer the northeastern part of the country, so that a visit will be possible.

All the best to all of you from all of us.  
(Betty has been making good use of the clothes Rao gave her ~~from~~ for Paul.)

Yours as ever,

6 August, 1952

Grand Forks

Dear Russ,

Your letter was here when I returned from a rather unsuccessful coring trip to several of the mines in Ward Co. (The Minneapolis people provided the driller, mining engineer and equipment, and the latter was far too heavy and bulky for the job. It took three weeks to get three rather poor cores, because of the work of loading, unloading, setting up the monstrous stuff.) It was good to hear that you are getting settled to the extent of growing lawns and vegetables. Our garden is proving a bonanza. The soil must be all that they say it is. Anyway, I've never seen anything like the luxuriant growth of sweet corn, beets, chard, lettuce, squash and so forth. We have invested in a food locker, hoping to save the bulk of our surplus harvest.

Thanks for the inside info on the coal research program. I still retain doubts that they can get a decently trained person for the sort of salary they mentioned in the prospectus, but I may be wrong, or they may raise the pay. Who is John Melvin? How much will J. M. Schopf have to do with the new program?

Things here are about as usual. I am trying to finish work on the little paper I propose to give at the November meetings. I should be starting work on the revision for publication of my thesis. That will have to wait for a few weeks.//The two boys from the U. S. G. S. who are here to replace you (a rare compliment, it seems to me that you did the work of two) seem very nice fellows. One of them came out recently to Eddy Co., with an imposing list of people, including Mr. Burr, a mining engineer from Mpls., the geologist from Williston, for the Great Northern Railway, and me. The locals out there had reported a find of lignite. On seeing the first sample I told Mr. Burr that it is reworked lignite, rounded pebbles of stream worked coal. I further said that it would be very surprising if there were much of it. Mr. Burr was very enthusiastic about the deal and poch-poched me. He had the drillers spend a few days there, and I am delighted to report that I was quite correct.

Would love to see you this Sept., but: we have, as you know, only a little better than two weeks. Our schedule is:

Aug. 30-Sept. 1	Drive to Indpls.
Sept. 1-4	Visit in Indpls. (Betty's family and my father)
Sept. 5-6	Drive to Ithaca
Sept. 7-9	Bot. Soc. meetings
Sept. 10-11	Drive to St. Joe, Mich.

477 W. Rosslyn Ave  
July 15, 1952 Washington,  
O.

Dear Al,

It seems like a very long time so I am writing especially since I have the use of a typewriter.

We here are all fine- I might say that between the weather and the Rhus sp. that we are enjoying ND residents as well as missing their good company especially yours. We still have not gotten around to doing any botanizing, except in the economic way of attempting to grow grass and a small garden which has so far yielded excellent radishes. We did though discover a community of wild ginger (Asarum?) down in the woods last Sunday however- it looks like good territory for a little botany- doubt if Stevens will be of a great deal of help- I should have given you my copy to keep till we came back to ND.

A short Rundown of the proposed coal research program here. I am not entirely a reliable source of information since I have gotten most of my information indirectly and by a small amount of the Socratic method. Thus it seems, that some time ago after Cady came to consult for the OGS it was conceived that a laboratory sponsored by the State survey could render much to Science and Industry by the establishment of a well founded petrographic laboratory. There have been only a very few coals or samples ever examined here. I know of only three- perhaps two for sure that have been made. One of these two is under study at present in Pittsburg. It was apparently suggested that Cady write the prospectus and get his name on it to help it along on its submission to the Science Foundation. Apparently the research program would be directed by Cady and under him would be a chief technician. I am not here for your edification. Apparently someone with the technique and background will be imported. I broached the subject of our handling the project with our own personnel (to John Melvin) and the preceding sentence was the reply. It is probably high time that some attention is paid to the physical composition of the coals here and some correlation made with the applications of the different coals to their optimal use. I don't know what all of this will lead to, spending all of this money, but I hope it will be good.

I have been reading the typewritten copy (taken from tape recording) of the Permo-pennsylvanian symposium. I must say this and it is probably true only in my case, but I have never read such high class gibberish in all my life. The principle discussion was the famous cyclothem- I personally hold that there is probably much to the theory, but my only puzzlement is that there are so many versions of the theory. I think that the trouble is that no one cares to take time to set the information down on a map and treat it areally and statistically as it should be treated, and the result is merely foundering about in a sea of details.

My present inspiration is the detailed analysis of the the Meigs Creek Coal reserves including a study of the nature of the parting. I think that we will be able to turn up some facts of the fundamental (probably fundamental for the Meigs creek only) we have just finished the parting and are well stated on isopaching the lower bench. I expect that in about two weeks we will have gotten most of the work done. I plan then for a week or two in the field for the purpose of collecting analysis channel samples and filling in gaps that appear here and there on our maps.

I am hoping that it will be possible for us to get together when you visit Indianapolis. It is not too much of a drive over there. Though you are welcome to come to our house, and I think that we could put you up alright, you probably will have had enough driving. So, I am suggesting that you let us know when, and we will drive over that way and see you.

We were happy to hear that Betty and Paul did alright and we hope that the whole family is doing fine and well adjusted (or don't blow the dust off that book daddy- its time I had a change).

I guess that is about all for now its 1:15 am Our best regards to everyone there especially you .

as ever

Russ and the kids

is concerned.

Would you <sup>drop</sup> me a card about the Bot Soc Meetings -  
if any Paleobotany session will be in progress - I agree - Very vague  
possibility of attending.

I would like to know more about the occurrence of the lign.  
in Eddy Co. - not for the sake of lign. but for the sake of Pleistocene  
geology. I hope the ~~was~~ was properly ~~chagrined~~ <sup>chagrined</sup> in private  
if not public. - I might confide to you that his attitude  
toward geology & geologists was assuming to say the least.

Regards to you for properly identifying this "mangy dog" deposit -  
I have seen several in N. D. although they were in the lignite are (Palaean  
terrace).

Your vacation sounds packed to say the least. Good  
you all a good trip, and wish you our best wishes if you happen  
to one way or another to stop over in this part of the country.

Our best regards to you, Betty and Paul.

With best wishes

Reverend

Note to Betty -

How are things? We would love to see you while you are in Ind. You shouldn't have any trouble traveling with Paul. Just take bottles along. Waitresses are very obliging about washing them & adding the correct amount of boiled water. Especially if you stop at rather off hours. I fed the boys more often, <sup>than usual</sup> on our trips. We were out 1 week when Alan was 6 mos. + again at 9½, traveled out to ND at 3 mos + back <sup>and part</sup> at 15 mos. With Duane we traveled back & forth at 3 mos. and 7 mos. It's a help if you have a bottle warmer to plug in the cigaret lighter.

It's 1:30 AM and I'm getting too sleepy to make sense. So

good night

Rae

Dear Al,

August 10, 1952

While Rae is working up some business stuff for me I am going to write you a quick note.

I am quite interested to hear of anything additional that you might have to say on the coring of lignite or coal - our outfit plans to sample strip pit exposures by this method. We are to experiment on a 2 1/2" core barrel to begin with & hope to be able to take an undisturbed section of coal out that way. I mentioned the desirability of a prime 4-5-0.6" core and the thought evolved that 2 or 3 cores could be taken in one pit (this would likely satisfy chemical sampling). I would like your thoughts on why you think a large diameter core should be used in petrographic work.

John Melvin is our state geologist and lives my home. His title is Chief, Division of the Geological Survey, Department of Natural Resources.

As far as I know J. Schopf will have no direct connection with the laboratory. I suspect that he will very likely hold a sort of consulting aspect - I have no information that would indicate that he will have any direct part of the lab or research. This apparently is Codrington's baby as far as directing the program.

*Talva*  
The lignite lumps at ~~Velva~~ *Talva* were first reported by seismograph crews. The local people, assuming there to be a deposit of coal, then began digging in the sand and gravel, recovering erratic lumps of coal reputedly at the 10 - 12' level. Is the term "mangy dog" deposit a Brantism, or may I use it? Please advise.

Keep me informed about any developments in Columbus.

Best wishes to all.

Sincerely yours,

*AT*

ALFRED TRAVERSE  
Coal Technologist

cc Region V  
Dr. Traverse ✓  
File

Region V  
Box LL, University Station  
Grand Forks, North Dakota

August 19, 1952

Mr. Russell A. Brant  
479 W. Rasslyn Avenue  
Worthington, Ohio

Dear Russ:

Your letters are always interesting - this most recent one of August 10 was especially full of news in general and interesting comments on the progress of coal science in Columbus in particular.

Our experience with coring lignite in Ward County was a little disappointing. I had hoped <sup>for</sup> 100% recovery or near it. We got about 90%, which I am told is good going. We used a double core barrel, NX(2 1/8" core) size; also an approximately 4" single barrel. The single barrel does not protect the core enough and was unsatisfactory, but I still think that the larger the size of the core the better the possible recovery.

I am returning to the idea that the best petrographic sample, from a mine with fresh cut faces, can be obtained by the column method - if some sort of power saw can be adapted for the purpose. Cores can (and must) be used where conditions prevent column sampling. The percent of recovery is the prime reason for superiority of the column method. The amount of coal available at any level is another. Remember that one section requires, roughly, an inch cube of coal. With a core it obviously wouldn't do to lose during preparation a couple of sections at one level, not to mention the desirability of having duplicate material for, e.g., maceration study.

Another thing is that, unless you have a portable rig, coring is very laborious. We had an outfit from the Mining Division which had to have a heavy tripod, with stagings, and a bulky platform set up for each hole. We spent two weeks sampling three mines.

Botanical Society meetings, which I am attending, are at Cornell and are a part of the A.I.B.S. meetings. There will be a large paleobotanical session on Monday - Wednesday, September 8 - 10. I hope that answers your question.

RUSSELL A. BRANT

GEOLOGIST

479 W. ROSSLYN AVENUE

WORTHINGTON, OHIO

LUDLOW 1064

January 29, 1953

Dear Al,

I guess this is the first note since Boston except the Christmas card, which we admired very much. It was very nice seeing you up there in Boston Al, I wish we could have had a little more time to visit, but you know how rushed those things are; I particularly enjoyed the meeting or trip to the laboratory at Harvard, and of course the personally guided tour of the campus together with the historic sights and anecdotes were much appreciated. I hope that we will be able to get together again before too many years lapse.

I am sending you under separate cover a proposed outline of coal research by Dr. Cady, and although it is possible that you have received such an outline I have no way of checking on this, I think that maybe you should be on our list for coal publications, although for sometime to come I anticipate that they will be only on the coal, its geology and reserves, and that we will not have petrographic work until sometime in the future. We have completed one report- that of the M<sub>2</sub>igs Creek Bed of Ohio since I have arrived; this will be in print soon- less than a month from now I anticipate. I have not heard anything of the good old N. D. Lignite report for months- I presume that it still supposed to be published.

One of the reasons that I am writing this letter is that I would like to see Laird's DTA apparatus put to some possible use on lignite problems. I wrote Laird a day or so ago suggesting the possibilities, though not suggesting any cooperation or how to do it or any of that. As you probably know Laird and your superior never were on terms of real cooperation (at least while I was there). So all I am doing is suggesting that you might mention the fact that there is a DTA on the campus (which I presume will work) to Jerry of Dr. Burr. I will be writing to Jerry at a later date and probably touch on the subject at that time. I have no idea what might come out of the studies, but you have read and heard several papers involving the use of DTA especially during the last two years. It is just possible that some fundamental discoveries may be made relative to the relationship of water to lignite or light shown on the technology of removing water economically- I don't know I am just suggesting that there is an apparatus that is already set up that might be utilized, and which as far as I know is just lying fallow. Well enough of that for a while- if something is being done with the gadget in the ways suggested above I would surely like to know.

The Brants have been in moderately good health, colds around, and the children have just had the chickenpox. We hope that you are all well and that the weather is to your liking. Our best regards to you, Betty and Paul. Also give our regards to my friends and your colleagues there at the laboratory too.

Sincerely

*Dean*  
R.E.D.

Region V  
Box LL, University Station  
Grand Forks, North Dakota

February 3, 1953

Mr. Russell A. Brant  
479 W. Rosslyn Avenue  
Worthington, Ohio

Dear Russ,

Thanks for your nice letter. It gave me a good opportunity to use my stereoscopic microscope. We enjoyed your Christmas card also.

I haven't received the outline by Dr. Cady yet, but I wonder if it is not the National Science Foundation proposition about which I wrote you last June.

The information about the equipment for differential thermal analysis was noted with interest, and I have talked with Jerry about it, so that when and if anything develops, we'll be informed. Although it would be very interesting to take a crack at the outfit, the manpower situation here will probably make it impossible, at least in the immediate future. But I didn't even realize we had the equipment nearby and am glad to know that.

Very truly yours,

*RA*

Alfred Traverse  
Coal Technologist

cc Region V  
Dr. Traverse ✓  
File

Dear Al,

This comes as an after-thought to my letter. I have some random samples of coal from my thesis area in Montana- I have told you about this. I am guessing that the sediments are of early Oligocene age, by method of relative position.

Would you be interested in examining this stuff for microfossils? If so please let me know and I will send it to you. I have no compelling interest in this I just thought that you might be interested inasmuch as the material appears to be Oligocene.

I will be sending you a copy of our Meigs Creek Coal study shortly, it is being printed at this time.

with warm regards

Russ

February 5, 1953

Region V  
Box LL, University Station  
Grand Forks, North Dakota

February 11, 1953

Mr. Russell A. Brant  
479 W. Rosslyn Avenue  
Werthington, Ohio

Dear Russ,

The Meigs Creek study is anticipated  
with interest.

If the Oligocene (?) stuff you describe  
is well documented (precise location, etc.), it  
would be interesting to look at it. When I could  
get around to it, I can't be sure, but if you are  
willing to be patient, send it.

Very truly yours,

*at*  
Alfred Traverse  
Coal Technologist

cc Region V  
Dr. Traverse ✓  
File

RUSSELL A. BRANT

GEOLOGIST

479 W. ROSSLYN AVENUE

WORTHINGTON, OHIO

LUDLOW 1064

April 1, 1953

Dr. Alfred Traverse  
Coal Technologist  
U.S. Bureau of Mines  
Grand Forks, North Dakota

Dear Al,

I just thought that I would get a note off to you. I presume that by this time you have gotten a Meigs Creek report. If by any chance the others such as Ellman or Oppelt care for a copy, I will be glad to send copies. It is just possible that there may be some data of interest to them in it.

I wonder if you could give me a rough estimate of how much money your laboratory cost, neglecting housing. If it would not be a great deal of trouble, I would like to get an idea with, perhaps, a partial breakdown—at least to refresh me on how much equipment you have. This information would be of value to us in our own anticipated program which is beginning to start in a small way.

I notice in the Science Weekly that Mr. Burr has resigned. I hope that all is well and that the change is for the better. I would be very interested to find out what things are like up there. Are the U.S.G.S. fellows still there? Regard 'em for me.

I understand that Laird has a whopping big appropriation this biennium. I hope that he is in a position to utilize it all.

Have you been out to Inkster of late? This springtime down here leads me to thinking about the valley up there. Spring is in full tilt; and although I have not been able to get to the woods, Rae has, and she reports quite a blooming assemblage of phanerogams—Trillium, Windflowers, Dutchman's breeches, Ginger—all just on a short walk. I think we will take a hike with "Gray" this weekend and see what we can find.

I have about wound up the frenzie of germanium letters that have occupied us for the last month or so, and we are now progressing on the geologic study of another coal bed—the lower Kittanning No. 5. I am hoping that we have some results on this in a couple of months. We also have some other small areas in southern Ohio that I expect to work on this summer.

Well, there are no other earth shaking developments to report at this time. Give my regards to the staff members up there and any of my other friends that you may meet.

Region V  
Box LL, University Station  
Grand Forks, North Dakota

April 14, 1953

Mr. Russell A. Brant  
479 W. Rosslyn Avenue  
Worthington, Ohio

Dear Russ,

Heartiest congratulations on "Lignite Resources of North Dakota", a copy of which Bill Culbertson just gave me. It will certainly be a handy manual for my use in working on "anthracologic" problems.

On page 1 of the report, you mention lignite in the Hell Creek formation. Could you give me more details? If I thought I could find it, it would probably be interesting flora-wise.

A reply to your letter of April 1 will be on its way soon.

Very truly yours,

*AD*

Alfred Traverse  
Coal Technologist

AT:dm

cc *✓* Dr. Traverse  
File

Approximate cost of equipment purchased for the lignite  
 microstructure laboratory, Lignite Research Laboratory,  
 U. S. Bureau of Mines, Grand Forks, North Dakota

(2) American Optical Company Research Microscopes, & Accessories.....	\$2700
In my opinion, two microscopes for research work are im- perative, in order to be able to make comparisons of preparations side-by-side.	
American Optical Company Photomicrographic Apparatus.....	500
American Optical Company Stereoscopic Microscopes.....	450
American Optical Company Lamps for Microscopy.....	250
This is the absolute minimum; I plan to add some sort of arc lamp for photomicrography.	
American Optical Company Polarizing Microscope.....	600
This item was ordered for me before I came. My interest in mineral matter is not very great, and it is doubtful if I shall make much use of the equipment in the near future.	
Spencer Microtome.....	500
Photovolt Exposure Photometer.....	75
International Size 2 Centrifuge and Accessories.....	600
Only necessary if neceration work is planned.	
Henes.....	60
Copper Slide Warming Table.....	50
Lindberg Hotplate, 12 x 20 inches.....	95
(2) Buehler Metallographic Polishers and Accessories.....	1200
It should be noted that the cost of this would have been con- siderably less if, instead of two one-wheel polishers, a single multiple wheel polisher had been ordered. One single wheel polisher was on hand when I came here, however	
Delta Band Saw.....	262
Buehler cut-off machine.....	650
Note that, although it is very handy to have both of these machines available, the band saw alone can handle all of the necessary jobs. The cut-off machine is slightly preferable for doing a neat job on small blocks of coal, but a bandsaw with the appropriate band will cut any kind of coal effectively.	
Total.....	
7992	

This includes nothing for furniture, for equipment made in the laboratory,  
 for basic supplies, for books or journals, nor for darkroom equipment.

Approximate cost of equipment purchased for the lignite  
 microstructure laboratory, Lignite Research Laboratory,  
 U. S. Bureau of Mines, Grand Forks, North Dakota

(2) American Optical Company Research Microscopes, & Accessories.....	\$2700
In my opinion, two microscopes for research work are im- perative, in order to be able to make comparisons of preparations side-by-side.	
American Optical Company Photomicrographic Apparatus.....	500
American Optical Company Stereoscopic Microscope.....	450
American Optical Company Lamps for Microscopy.....	250
This is the absolute minimum; I plan to add some sort of arc lamp for photomicrography.	
American Optical Company Polarizing Microscope.....	600
This item was ordered for me before I came. My interest in mineral matter is not very great, and it is doubtful if I shall make much use of the equipment in the near future.	
Spencer Microtome.....	500
Photovolt Exposure Photometer.....	75
International Size 2 Centrifuge and Accessories.....	600
Only necessary if maceration work is planned.	
Hones.....	60
Copper Slide Warming Table.....	50
Lindberg Hotplate, 12 x 20 inches.....	95
(2) Buehler Metallographic Polishers and Accessories.....	1200
It should be noted that the cost of this would have been con- siderably less if, instead of two one-wheel polishers, a single multiple wheel polisher had been ordered. One single wheel polisher was on hand when I came here, however.	
Delta Band Saw.....	262
Buehler cut-off machine.....	650
Note that, although it is very handy to have both of these machines available, the band saw alone can handle all of the necessary jobs. The cut-off machine is slightly preferable for doing a neat job on small blocks of coal, but a bandsaw with the appropriate band will cut any kind of coal effectively.	
Total.....	
	7992

This includes nothing for furniture, for equipment made in the laboratory,  
 for basic supplies, for books or journals, nor for darkroom equipment.

If I can be helpful in any way, through having recently equipped a coal-microstructure lab, please feel free to call on me.

Best wishes to all.

Very truly yours,

*AT*

Alfred Traverse  
Coal Technologist

Enc.

AT:dm

cc: Mr. Lankford  
Region V  
✓ Dr. Traverse  
File - 023  
Day File

*W. Howell*

Region V  
Box 11, University Station  
Grand Forks, North Dakota

April 21, 1953

Mr. Russell A. Brant  
479 W. Rosslyn Avenue  
Worthington, Ohio

Dear Russ,

Your lignite report is in hand and of much interest to me. I have yet to receive a copy of the Meigs Creek report of which you have written several times - hence the lack of comment.

As you may know by now, Bill Culbertson of the U.S.G.S. is still here, but is being transferred to Tuscaloosa, Alabama in June. His assistant, Roy Kepferle, has gone back to graduate work at South Dakota School of Mines.

Your botanical comments are interesting - of course, there is very little sign of vernalisation here. I haven't been to Inkster since last fall, which I regret to report. Perhaps that will be amended later in the spring.

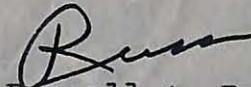
About the equipping of this suite for the study of lignite microstructure: I now have the job finished, with the exception of a very few items. I enclose a list of equipment and approximate cost, with comments. Note that, in addition to the items on this list, a very well equipped darkroom is absolutely essential. If a darkroom must be provided, allowance must be made for it also. My list includes no allowance for books and journals - this has been a large item here because of the lack of appropriate library facilities. Neither have I shown any expenditure for supplies, which must be available to use the equipment (microscope slides and coverslips, Carborundum powder, etc., etc.). Nor is there any allowance for the many pieces of equipment I have had made here - i.e. hone-stand and drain board - nor for furniture, including shelves, filing cases, etc. You will note that my total for equipment is about \$8,000. If you were to add to that an amount necessary for supplies, the total would be about \$10,000. Note that this does not include darkroom equipment <sup>equipment</sup> made in our shop, or furniture, or books.

the Lower Kittanning study. There are some nice big blank spots in it. I trust that your work is moving along on the petrology of lignite and I hope you will find a little time to do some pollen studies as well. Pollen is so much more interesting than these confounded spores which as far as I'm concerned have lost their botanical identity for the most part.

Al, did I ever send you the sample of an Oligocene?(coal) Since I inquired of your ~~office~~ <sup>office</sup> ~~months~~ <sup>months</sup> ago we have moved and in other ways have been disturbed and if I haven't I have lost track of it.

The Brants are all in fine condition. We recently wound up a session of measles on all three kids but they seem to have snapped back in good shape. Poison ivy continues to dominate the scene in spite of repeated efforts with spray tank and 2-4-D. I trust that you, Betty and Paul are all fine and enjoying the Dakotas and Grand Forks in particular. I hope your garden continues to be a bonanza again this year. Please give my regards to the staff up there that I know and if you run into any of the geologists do the same to them.

With best regards,



Russell A. Brant  
Coal Geologist  
DIVISION OF GEOLOGICAL SURVEY

RAB:sch

new stereo  
has to get all the  
geegaws.

RUSSELL A. BRANT  
GEOLOGIST  
479 W. ROSSLYN AVENUE  
WORTHINGTON, OHIO  
—  
LUDLOW 1064

RECEIVED

JUL 2 1953

U. S. Bureau of Mines  
Grand Forks, North Dakota

June 26, 1953

Dr. Alfred Traverse  
Robertson Laboratory  
U. S. Bureau of Mines  
Grand Forks, North Dakota

Dear Al,

Thanks for the reprint on the preview of the Brandon Study. I'll probably digest it this evening. I thought you might be interested that the N. S. F. has granted us \$24,000 (reduced from \$31,000) under the auspices of Dr. Cady. We are now in the process of getting the details and the mechanics all ironed out and to start ordering equipment. Your summary of your lab equipment and costs thereof has been useful in the determination of our path and selection of equipment. We have a man on our staff, one Gilbert Smith, who has studied petrographic techniques under Cross at Morgantown and if all goes well he will apparently be our chief technician. Cady will give the project close attention and we hope to start operations in September. I just thought you might be interested in this recent development. The technique, as you probably recognize, will be the polished block with thin sections being used only as an appended technique to be used in special cases.

Thank you for your kind remarks about the Meigs Creek Study. It certainly is not the sort of thing one such as yourself would pour over but it did come together in fairly nice shape. We are recently working on the results of another coal bed in Ohio - Lower Kittanning which is of current interest because germanium has been found in it. Jim Schopf is doing particular work on coal to run along with Stadnichencko's geochemical work. I shouldn't wonder at all but what Schopf will drop in to see you if he hasn't already done so. He is making a wide sweep and I think he said he would be in the Dakotas. I suppose particularly to look over the uraniferous lignite.

Not too much new here. I have been in the field a little bit, mostly on mine location work - horribly unrewarding, however we will have to do a little geology in connection with