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## **Leo Baekeland Diary Volume 1, 1907-1908**

Extracted on Jul-15-2014 09:04:49

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[[binding]]  
1  
Ap. 3  
1907  
to  
Jan 22,  
1908

[[cover]]  
RECORD



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[[notes on inside cover, left-hand page]]

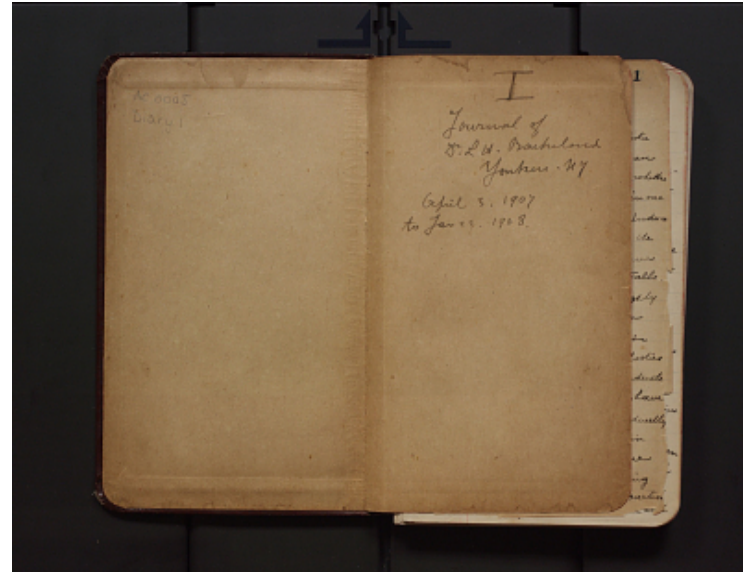
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Diary 1

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I  
Journal of  
Dr. L. H. Baekeland  
Yonkers, NY

April 3, 1907  
to Jan 22, 1908



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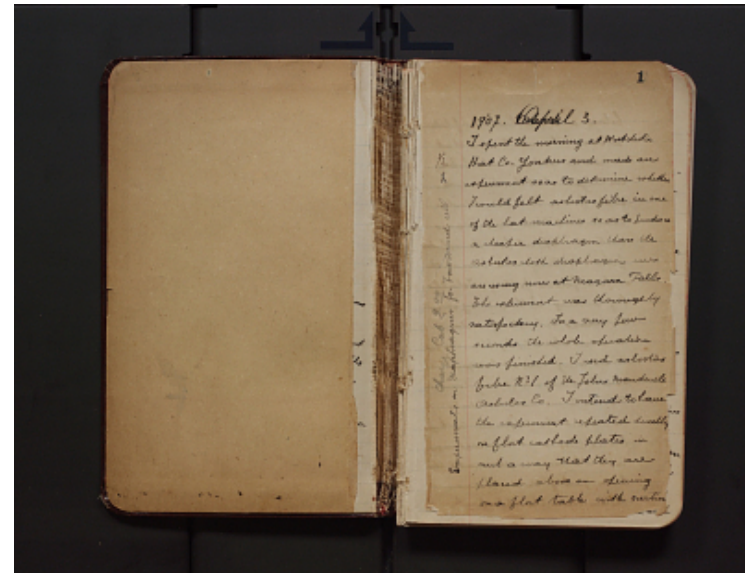
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[[written sideways in left margin - Charge Cab \$2.00  
Experiments on Diaphragms for Townsend cell 1/2 x]]

1907. April [[written over March]] 3.

I spent the morning at Westchester Hat Co. Yonkers and made an experiment so as to determine whether I could felt asbestos fibre in one of the hat machines so as to produce a cheaper diaphragm than the asbestos cloth diaphragm we are using now at Niagara Falls. The experiment was thoroughly satisfactory. In a very few seconds the whole operation was finished. I used asbestos fibre No.1 of the Johns Mandeville Asbestos Co. I intend to have the experiment repeated directly on flat cathode plates in such a way that they are placed above an opening on a flat table with suction



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below and a distributor of fibre above. It occurs to me that in order to utilize shorter fibre, we might stretch cheesecloth either free or over the cathode plate and thus produce an initial support for the asbestos fibre. Wetting and pressing the surface favors felting. I shall try wetting with gummy solutions or ~~perhaps~~ silicate of soda. We might also apply the iron paint we are using now at Niagara Falls so as to bind everything together. It occurs to me that in order to counteract the difference in hydrostatic pressure at the diaphragm in the cells we might make the lower part of the diaphragm thicker than the upper part.

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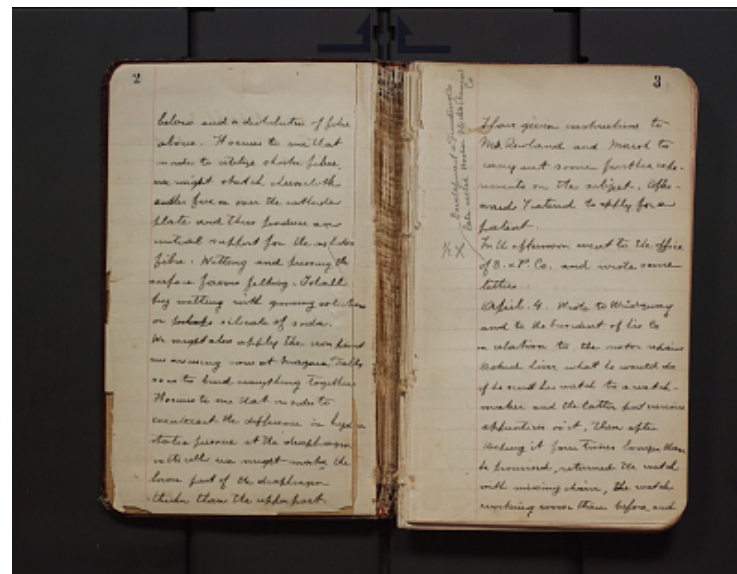
3

I have given instructions to Mr. Rowland and Marsh to carry out some further experiments on the subject. Afterwards I intend to apply for a patent.

In the afternoon went to the office of D. & F. Co. [[left margin note - points to this and says Development & Funding Co. later called Hooker Electrochemical Co.]] [[margin note - 1/2 X (meaning charge for half day's work)]] and wrote some letters.

April. 4. Wrote to [[Wridgway (?)]] and to the President of his Co in relation to the motor repairs. Asked him what he would do if he sent his watch to a watchmaker and the latter put various apprentices on it, then after keeping it four times longer than he promised, returned the watch with missing chain, the watch working worse than before and

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a bill much higher than what you were estimated.  
In the afternoon went to the office explained to Rowland and Sperry my idea for making asbestos diaphragm and showed them samples.

[[margin - 1/2 X]]

Discussed the advisability of making a small 50A. Townsend cell for laboratory use and for insuring "operating" in such countries where patent rights require this qualification

[April 5. Read tonight before the N.Y. Section of Am. Chemical Society my paper "On the Danger of Overspecialization" Quite [some?]] discussion after the meeting. The discussion deviating mostly on side matters, as for instance What is the soul? Have we right

[[end page]]

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to kill animals for pleasure or food. Was glad to see that to some my paper gave food for thought. Breneman as chairman made some laudatory remarks. I hope the paper will ~~not?~~

~~shock more and rouse some controversy as soon as it is published. If it does not it will have missed its purpose, viz. to awaken some of us from our one-sided torpid life.~~

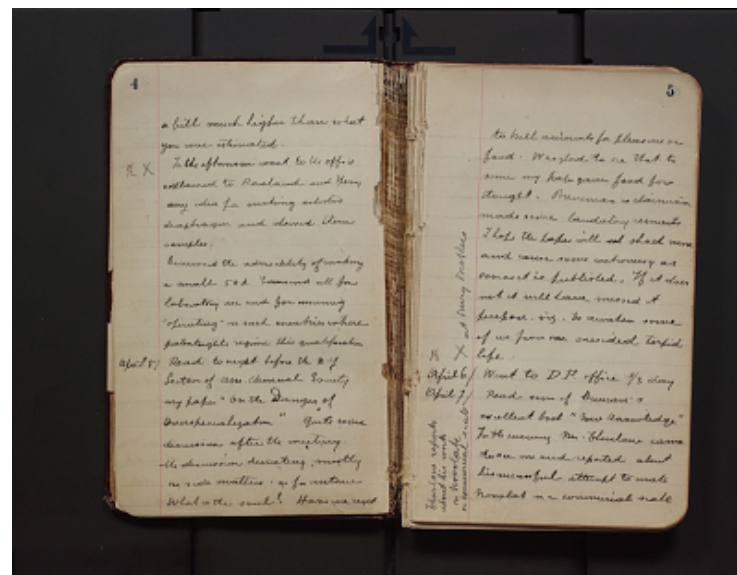
[[margin - 1/3 X at Berry Brothers

April 6/ Went to D.F. office 1/3 day

April 7/ Read some of Duncan's excellent book "New Knowledge" In the evening Mr. Thurlow came to see me and reported about his successful attempt to make Novolak on a commercial scale

[[margin - Thurlow reports about his work on Novolak on commercial scale

[[end page]]



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at Berry Bros. Detroit. The product was better than what we have made thus far in our laboratory but great objection against smell  
April 8 Received letter from Alfred Hooper, confirming report and objecting against smell. I recommend adding alone or mixed Nitrobenzol, Sassafras oil, Wintergreen oil or Cedar oil to the varnish so as to mask the smell.

Thurlow made an asbestos sample by drying the material in a vacuum I believe this will solve the problem.

April 9. Strong Blizzard raging all day N.E. winds snow several inches thick. I wrote a letter to the "Globe" answering ~~[[strikethrough]]~~ a letter ~~[[strikethrough]]~~ a

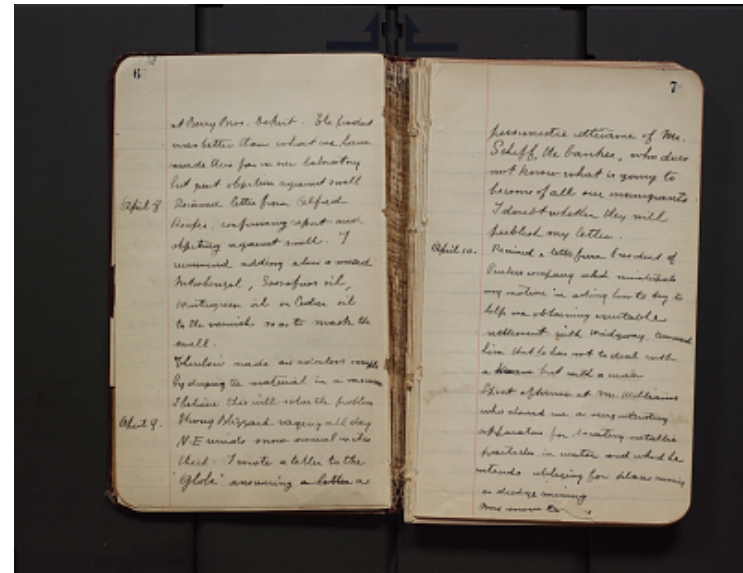
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7  
pessimistic utterance of Mr. Schiff, the banker, who does not know what is going to become of all our immigrants. I doubt whether they will publish my letter.

April 10. Received a letter from President of Peerless company which misinterprets my motive in asking him to try to help me obtaining equitable settlement with Wridgeway. Assured him that he has not to deal with a Knave but with a man.

Spent afternoon at Mr. Williams who showed me a very interesting apparatus for locating metallic particles in water and which he intends utilizing for placer mining or dredge mining.

More snow today  
[[end page]]



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April 11. Brady examined motor today. reported bearings of crankshaft molten out on account of insufficient lubrication. The careless people at Peerless's shop had not finished the motor. Left the side oil pipes out so that crank case could not lubricate, hence overheating. A most careless and reckless piece of work.

April 12 Went to N.Y. Spent from 10 P.M. to 4:30 P.M. at D. & F. C. (one day) Development & Funding Co., which later became Hooker Electrochemical

Evening took supper at Mrs. Seligsberg then afterwards Trustee meeting Chemist's Club

April 13 Dinner in honor of Mr. Nichols at Chemist's Club. A great success. I was called upon to speak after Parker had satirized my lecture on "Overspecialization" got back at

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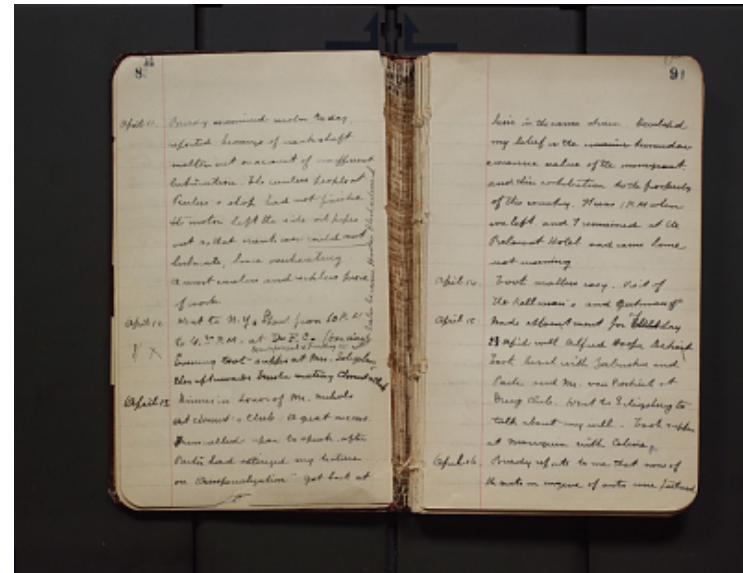
9

him in the same strain. Developed my belief in the ~~economic~~ tremendous economic value of the immigrant and their contribution to the prosperity of this country. It was 1 P.M. when we left and I remained at the Belmont Hotel and came home next morning.

April 14. Took matters easy. Visit of the Kellman's and Gutman

April 15. Made appointment for Tuesday 23 April with Alfred Hooper Detroit. Took lunch with Zabriskie and Parker and Mr. van Boskich at Drug Club. Went to Seligsberg to talk about my will. Took supper at Mouquin with Celine.

April 16. Brady reports to me that none of the nuts in engine of auto were fastened



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in such a clumsy inefficient way so as to surely fall off after awhile- another piece of carelessness of the "Peerless" Co.

[[margin: Ap]] Spent the day rewriting: Immigration and over population April 17. Corrected "Overspecialization" and sent it to Prof. Cattell (Editor Science)

[[margin: 1/2 X]] Spent 1/2 day at D.F.Co

April 18. ~~Met Z~~ Answered another unconciliatory letter of Peerless Co

In the afternoon had a pleasant visit from Mr. Alfred Williams. I mentioned to him my intention to use X rays and ultra violet rays on some organic compounds of the terpene group so as to try to change them into their isomeres. Had the enjoyment of reading "Respectability" by Elbert Hubbard

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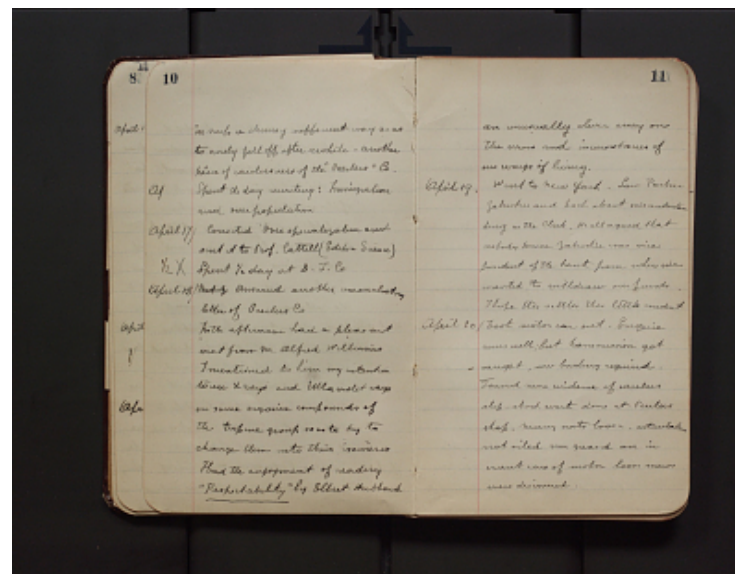
11

an unusually clever essay on the errors and inconsistencies of our ways of living.

April 19. Went to New York. Saw Parker, Zabriskie and Boch about misunderstanding in the Club. We all agreed that nobody knew Zabriskie was vice president of the bank from where we wanted to withdraw our funds. I hope this settles this little incident

April 20. Took motor car out. Engine runs well; but transmission got caught, new bushing required. Found more evidence of careless slipshod work done at Peerless shop. Many nuts loose. Articulation not oiled nor greased an in crank case of motor loose screws were discovered.

[end of page]



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[[margin: Morality based on reason & other philosophic considerations.]]  
[[underline]]Anvil Club [[underline]] mtg]]

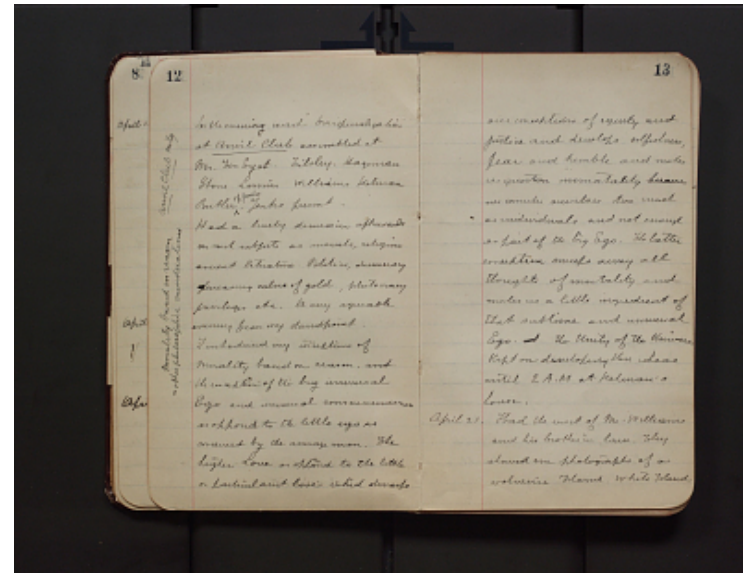
In the evening read overspecialization at [[underline]]Anvil Club  
[[underline]] assembled at Mr. Von Eyck. Tilsley, Hagiman, Stone,  
Loomis, Williams, Kelman, Butler of Yonkers, Jenks present.  
Had a lively discussion afterwards on such subjects as morals, religion  
ancient literature, Politics, democracy decreasing value of gold,  
plutocracy, privileges etc. A very agreeable evening from my standpoint.  
I introduced my inception of morality based on reason, and the  
conception of the big universal Ego and universal consciousness as  
opposed to the little ego, as conceived by the average man. The higher  
Love as opposed to the little or particularist love which dwarfs

[[end page]]

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our conceptions of equity and justice and develops selfishness, fear and  
humble and makes us question immortality because we consider  
ourselves too much as individuals, and not enough as part of the big  
Ego. The latter conception sweeps away all thoughts of mortality and  
makes us a little ingredient of that sublime and universal Ego. The Unity  
of the Universe. Kept on developing these ideas until 2 A.M. at Kelman's  
house.

April 21. Had the visit of Mr. Williams and his brother in law. They  
showed me photographs of a volcanic Island. White Island  
[[end page]]



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in New Zealand which has a lake of hydrochloric acid and deposits of sulphur.

~~[[margin - Single Taxers]]~~ In the evening went to a lecture of the Manhattan single tax club. ~~[[strickethrough]]A[[strickethrough]]~~ Small room on 125th. ~~[[strickethrough]]~~ does not ~~[[strickethrough]]~~ made a very uninspiring impression. Miller the lecturer spoke very well also another man. The other ones impressed me as a rather impractical lot.

April 22 ~~[[strickethrough]]~~ Ap ~~[[strickethrough]]~~ Spent one half day at the office.

~~[[margin - 1/2X]]~~

In the evening took train to Niagara Falls.

April 23 Spent one day at the works ~~[[carat - of Hooker El. Ch. Co.]]~~ and took notes of several matters which require immediate attendance.

~~[[margin - 1/ X]]~~

Pauley has not rigged up the heating drum so as to allow sufficient heating.

~~[[end page]]~~

~~[[start page]]~~

15

Told him to change it. Make the inlet and outlet on hub much larger and draw the combustion gas of a coal stove through it.

Vacuum pans cause considerable losses on account of "priming" and caustic leaking through perforated tubes in steam chest. Have made typewritten memorandum.

~~[[margin - Charge /\$22.00 hourly expenses Trouble with vacuum pans at Hooker's]]~~

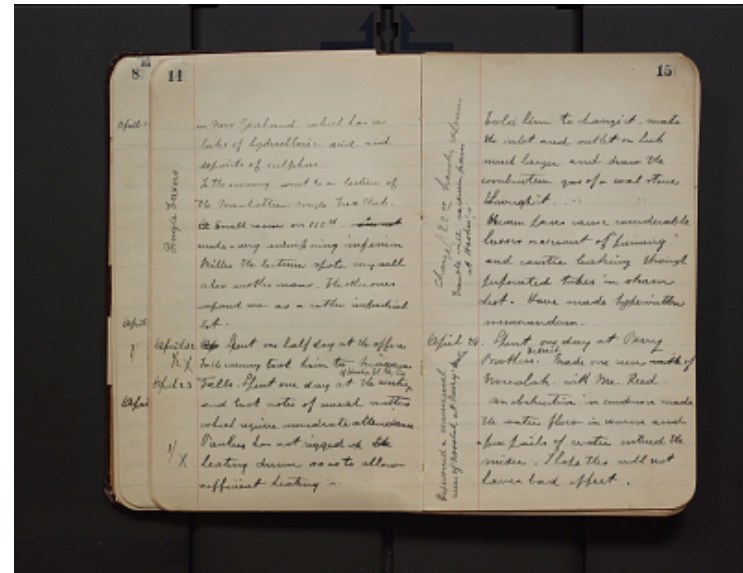
April 24. Spent one day at Berry Brothers. Detroit Made one run

~~[[strickethrough]]~~with ~~[[strickethrough]]~~ of Novolak with Mr. Reed.

An obstruction in condenser made the water flow in warm and a few pails of water entered the mixer. I hope this will not have a bad effect.

~~[[Margin - Supervised a commercial run of Novolak at Berry Brother]]~~

~~[[end page]]~~



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started at low temperature then let heat up and kept finally as high as possible. Left the operation in charge of Mr. Reed

Reed

I suggested vacuum drying of Shellac for their own shellac Dept. Also to dissolve Shellac in cathode liquor then heat the solution (after straining) with chlorine gas so as to produce bleached shellac.

This trip costs me about \$15.00

Spent the evening with Mr. Hooper at City Club and took night train to Niagara

April 25. Spent morning at Niagara works. Saw Mr. Cohn the lawyer who has the matter

above

[[margin - 1/X]]

[[end page]]

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[[margin - Visit to Larkin's in Buffalo]]

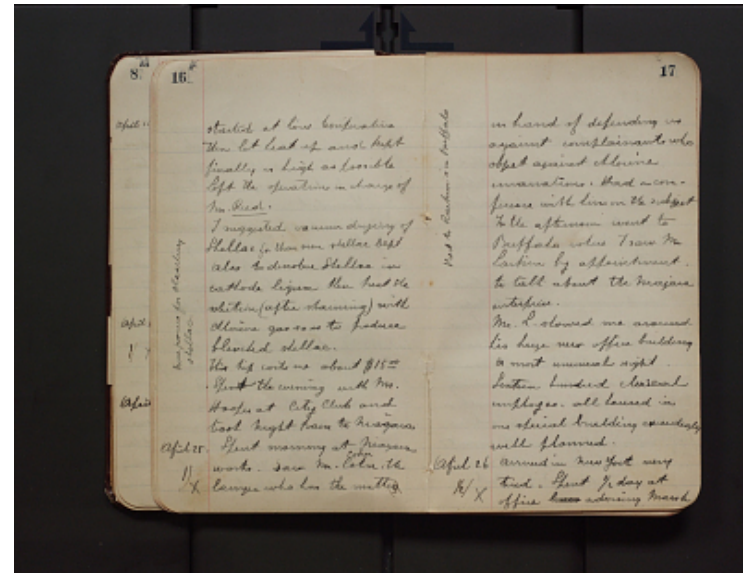
in hand of defending us against complainants who object against chlorine emanations. Had a conference with him on the subject.

In the afternoon went to Buffalo where I saw Mr. Larkin by appointment to talk about the Niagara enterprise.

Mr. L. showed me around his huge new office building a most unusual sight. Sixteen hundred clerical employees, all housed in one special building exceedingly well planned.

April 26 Arrived in New York very tired. Spent 1/2 day at office advising Marsh

[[margin - 1/2x]]



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as to some very necessary alterations to the Niagara Plant Saw ~~Thomas~~ Parker and submitted him my paper on Townsend Cell so that he may report to his company on the merits of same. Came home in afternoon very tired.

April 27. Stayed home. I feel very tired and nervous. Unfit to take up any work. The complications of our unnecessarily complicated living irritate me. If I could do so without inconveniencing my wife I certainly would go and live somewhere where we could dispense with servants and had a simpler and more natural life. But my

[[margin - My wish for a simpler way of living]]

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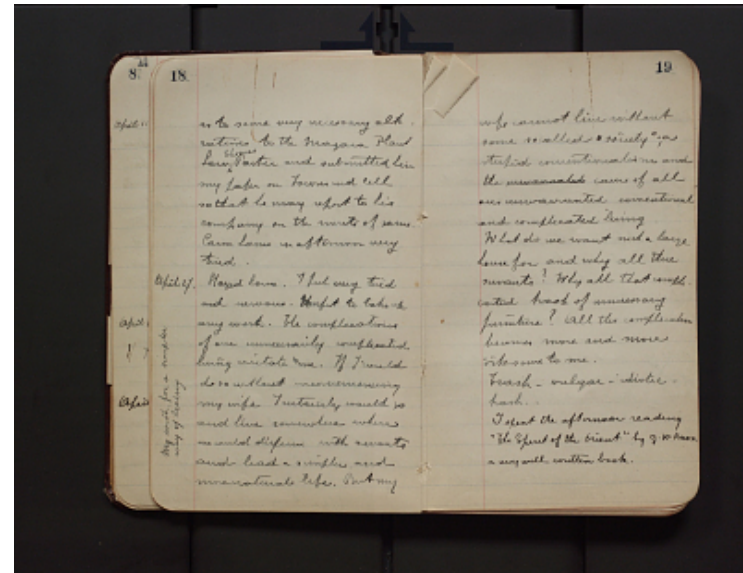
wife cannot live without some so called "society"; a stupid conventionalism and the ~~unwarranted~~ ~~cause~~ of all our unwarranted conventional and complicated living.

What do we want such a large house for and why all these servants?

Why all that complicated trash of unnecessary furniture? All this complication becomes more and more irksome to me.

Trash - vulgar - idiotic - trash..

I spent the afternoon reading "The Spirit of the Orient" by G. W. Knox a very well written book.



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April 28. I intend to apply for patent rights for the asbestos felt and give free license to the Development and Funding Co. for the right to use the process as a cell diaphragm reserving myself the right of using it for any other purposes.

I intend to try impregnating wood with waste sulphite lye.

[[margin - Impregnation of wood with sulphite lye.]]

April 29. One day at office of D & F. Co. various consultations and correcting paper on Townsend cell.

[[margin - 1/X]]

April 30. Spent the day examining testimony of Mr. [[Main?]] (Goodwin suit.)

[[margin - Goodwin vs. Eastman suit]]

May 1 Spent another full day on the same subject.

May 2. Spent 1/3 day at office

[[margin - X1/3]]

May 3. Stayed at home various work.

May 4. Spent 1/2 day at office. dictated several letters and corrected paper

[[margin - X1/2]]

[[end page]]

[[start page]]

21

on Townsend. cell.

May 5. Adams came here from Peerless Co to attach the missing ~~parts~~ vents of auto engine.

Have sent them a check

May 6. Damp cold rainy weather. Spent the day clearing up my old papers and letters.

May 7. All day busy correcting mistakes on automobile

May 8. One full day at office of D. & F. Co.

[[margin - 1/X]]

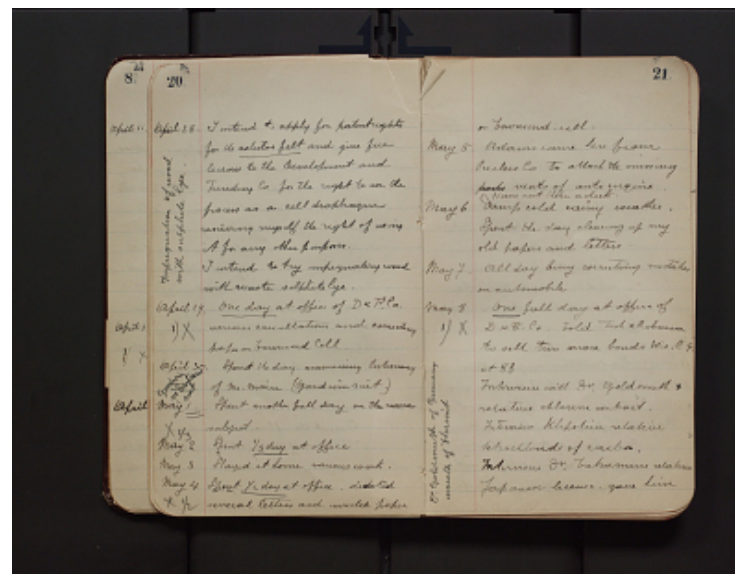
Told Tish & Robinson to sell two more bonds Wis.C.4 at 88

Interview with Dr. Goldsmith + relative chlorine contract.

[[margin - Dr. Goldsmith of Germany inventor of thermit  
Interview Klipstein relative tetrachloride of carbon. Interview Dr.

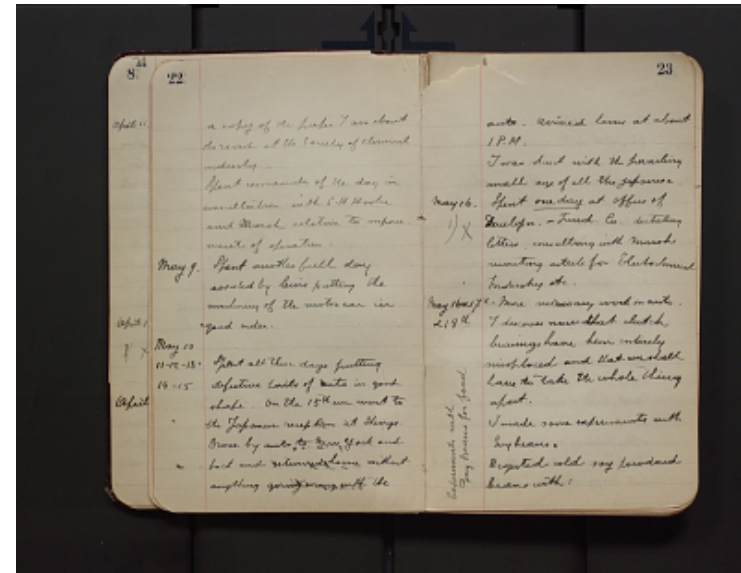
Takamine relative Japanese license gave him

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 a copy of the paper I am about to read at the Society of Chemical Industry.  
 Spent remainder of the day in consultation with E. H. Hooker and Marsh relative to improvements of operation.  
 May 9. Spent another full day assisted by Lewis putting the machinery of the motor car in good order.  
 May 10 11-12-13 14-15 Spent all these days putting defective parts of auto in good shape. On the 15th we went to the Japanese reception at Sherrys.  
 Drove by auto to New York and back and returned home without anything going wrong with the  
 auto. arrived home at about 1 P.M.  
 I was struck with the prevailing small size of all the Japanese  
 May 16. Spent one day at office of Developm. & Fund. Co. dictating letters, consulting with Marsh rewriting article for Electrochemical Industry etc.  
 May 16 & 17th & 18th More necessary work on auto. I discover now that clutch bearings have been entirely misplaced and that we shall have to take the whole thing apart.  
 I made some experiments with soybeans.  
 Digested cold soy powdered beans with:  
 Experiments with Soy Beans for food



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1. NaCl: 10% solution

2. NaOH: 1% solution

I did the same thing with soy previously deprived of oil by extraction with CCl<sub>4</sub>.

Results: NaCl solution had dissolved a very small quantity of proteins precipitable by considerable dilution but even then the amount was so small as to cause only a slight precipitate.

Same result for Soy extracted with CCl<sub>4</sub>

NaOH had dissolved considerable amounts which were reprecipitated after adding acetic acid.

But I am inclined to think that fats may have been saponified

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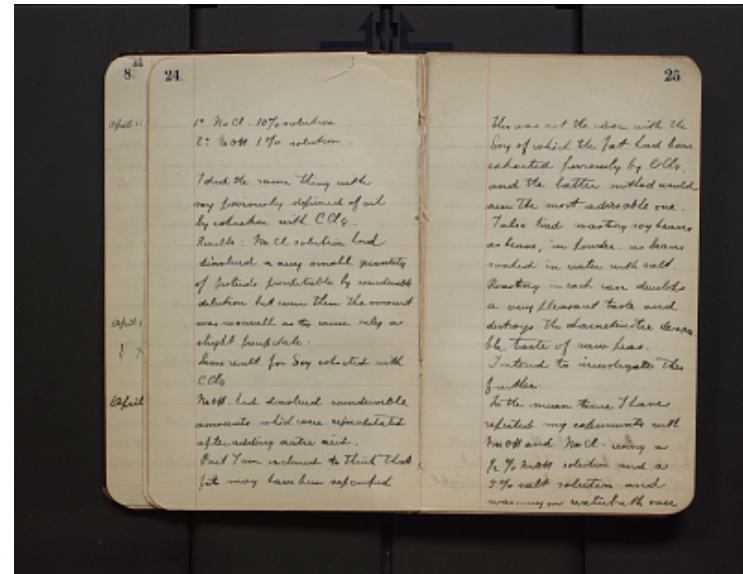
This was not the case with the Soy of which the fat had been extracted previously by CCl<sub>4</sub> and the latter method would seem the most advisable one.

I also tried roasting soy beans as beans, in powder, as beans soaked in water with salt. Roasting in each case develops a very pleasant taste and destroys the characteristic disagreeable taste of raw peas.

I intend to investigate this further.

In the mean time I have repeated my experiments with NaOH and NaCl using a 1/2% NaOH solution and a 5% salt solution and warming on waterbath over

[[end page]]



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night.

[[margin]] Impregnation of wood with sulphite liquor on pencil wood obtained from Byron Goldsmith]]

A few days ago I tried impregnation of wood with waste sulphite liquor as obtained from the pulp plant at Mechanicsville (West Virginia Pulp and Paper Co) tried vacuum impregnation followed by standing then slow but effective drying in laboratory stove.

Samples used were lead pencil cedar and basswood. Color was not changed much but I see no great difference in general aspect. Will have to try strength on testing machine.

May 19. Sunday. Did some further work with soy beans. I find that soaking the beans over night

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in salt solution then heat and dry and roast the swelled beans produces a very palatable product.

[[margin - More on soy beans]]

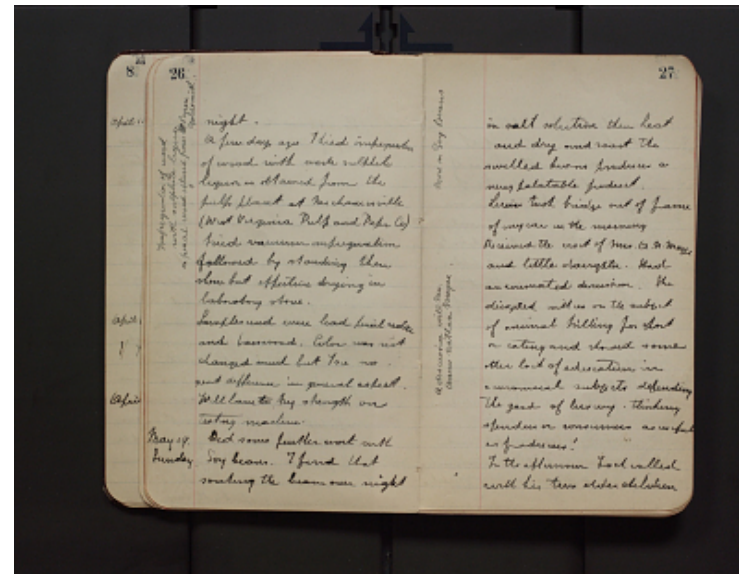
Lewis took bridge out of frame of my car in the morning

[[margin - A discussion with Mrs. Annie Nathan Meyer]]

Received the visit of Mrs. A. N. Meyer and little daughter. Had an animated discussion. She disagreed with us on the subject of animal killing for sport or eating and showed some other lack of education in economical subjects defending the good of luxury. Thinking spenders or consumers as useful as producers!

In the afternoon Toch called with his two older children

[[end page]]



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and stayed for supper.

[[margin - Simplicity of life]]

We also received visit of Mr. & Mrs. Jewett. Topic of conversation: simplicity of life: [[wrong of hunting from one to another?]]; necessity of home life so as to contribute directly to education of children. Mr. J. makes an excellent impression. he is the son of a theologian and [[?]] often has little use of narrow-minded theology.

May 20 [[margin - 1)X]]

Spent one day at office of Hooker D. & F. Co. finishing article for Electrochemical Industry. writing letters consulting with Marsh and attending to publication arrangements for report of my paper on Dr. Roebers

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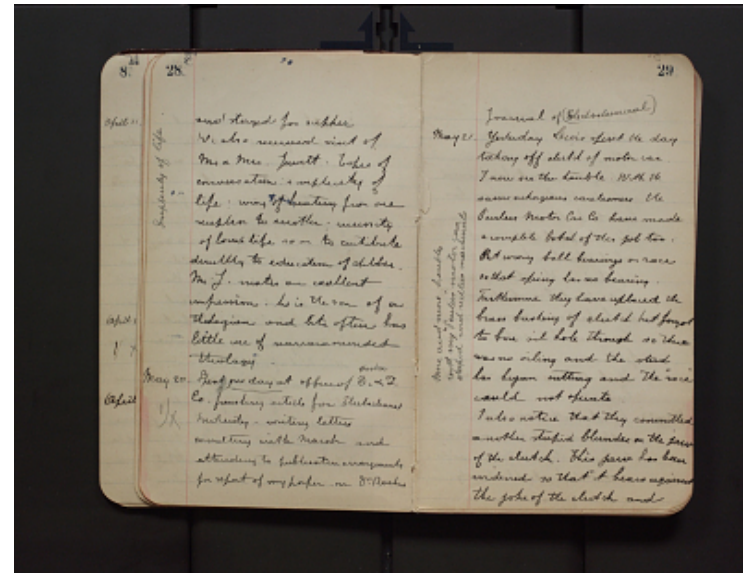
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Journal of (Electrochemical)

[[Margin - More and more troubles with my "Peerless motor car stupid and reckless machinists]]

May 21. Yesterday Lewis spent the day taking off clutch of motor car. I now see the trouble. With the same outrageous carelessness the Peerless Motor Car Co. have made a complete botch of this job too. Put wrong ball bearings on race so that spring has no bearing. Furthermore they have replaced the brass bushing of clutch but forgot to bore oil hole through so there was no oiling and the stud has begun cutting and the "race" could not operate.

I also notice that they committed another stupid blunder on the jaw of the clutch. This jaw has been widened so that it bears against the yoke of the clutch and



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this acts as a brake. I shall have to change that too at the first opportunity. All of the work has proved so bad that everything has had to be done over again. The only part of the machine which thus far has not been refitted is the steering gear and that too shall have to be looked over some day. I am disgusted with those fellows.

Spent all day on the car with Lewis.

May 22 Spent another day on the car with Lewis and have concluded to leave things as they are now and at the first opportunity

[[end page]]

[[start page]]

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make some further ~~chang~~ necessary changes.

May 23 Worked in laboratory on Soy. Salted and roasted soy, imperfectly desaturated then ground in sausage grinder gave a brown powder rather palatable. I want to see whether it keeps.

I spent the afternoon writing letters.

[[Margin- soy beans]]

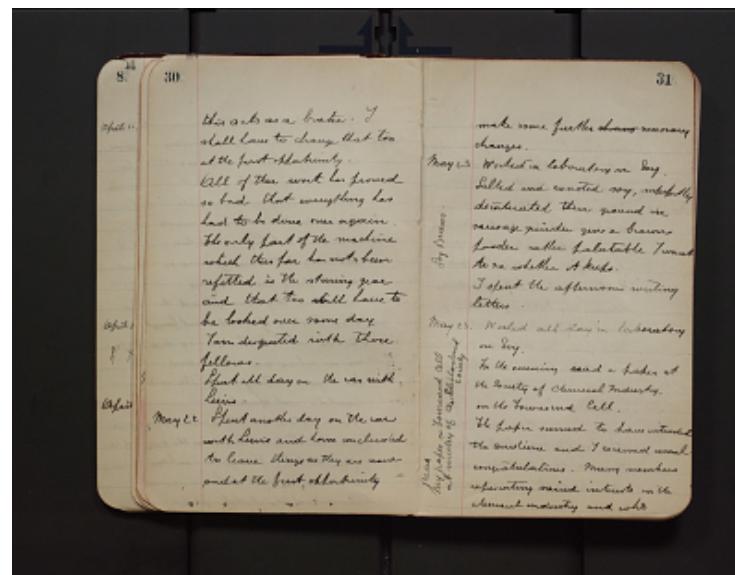
May 24 Worked all day in laboratory on Soy.

[[margin, Read my paper on Townsend Cell at meeting of the Electrochemical Society]]

In the evening read a paper at the society of Chemical Industry on the Townsend cell.

The paper seemed to have interested the audience and I received several congratulations. Many members representing varied interests in the chemical industry and who

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rarely come to the meetings were present Took the 11:40 P.M train and arrived home about 1 P.M.

[[margin: Wall street traders]]

May 26. Intimidated by the many newspaper reports about the intended ~~cho~~ invalidation of the charter of the Consolidated Gas Co. I am taking into consideration changing my holding and buy some 7 or 8% earning stock. On inquiry Mr. Seligman tells me that the later newspaper articles are supposed to have ~~augmented~~ been inspired by insiders who thus try to depress stock so as to buy back what they sold last week on a rise. A contemptible game again

[[end page]]

[[start page]]

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and all this to fleece the unwary small investor as myself. I decided to wait

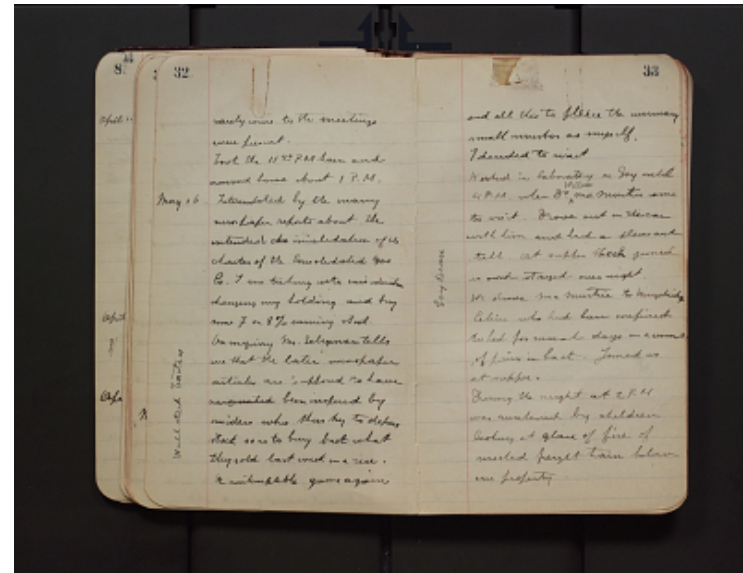
[[margin - Soy Bean]]

Worked in laboratory on Soy until 4 P.M. when Dr. William McMurtrie came to visit. Drove out in the car with him and had a pleasant talk. At supper Boch joined us and stayed over night.

We drove McMurtrie to Kingsbridge.

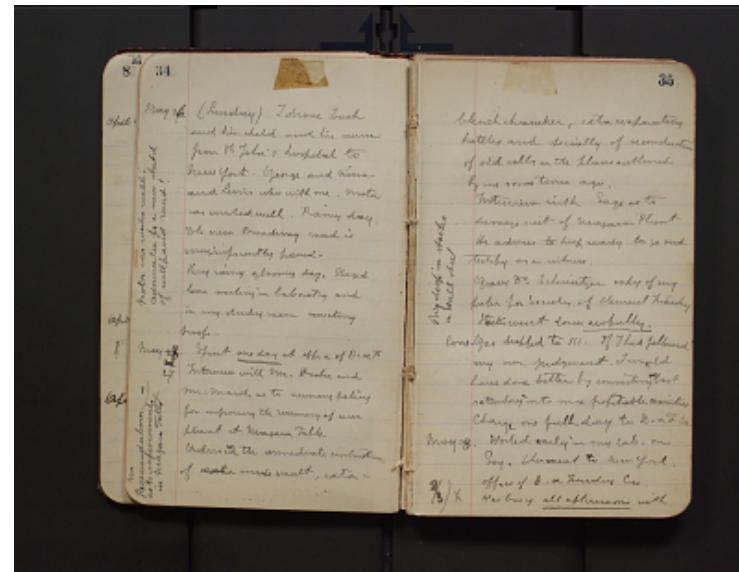
Celine who had been confined to bed for several days on account of pains in back, joined us at supper.

During the night at 2 P.M was awakened by children looking at glare of fire of wrecked freight train below our property.



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34  
May 26. (Sunday) I drove [[Boch?]] and his child and his nurse from St John's hospital to New York. George and Nina and Lewis were with me. Motor car worked well. Rainy day. The new Broadway road is magnificently paved.  
Very rainy gloomy day. Stayed home working in laboratory and in my study room correcting proofs.  
[[margin - Motor car works well. Admiration for a new stretch of well paved road!]]  
May ~~27~~ ~~27~~ ~~27~~ 28  
~~Spent one day~~ at office of D. & F. Interview with Mr. Hooker and Mr. Marsh as to summary policy for improving the running of our plant at Niagara Falls.  
Advised the immediate construction of extra anode vault, extra-  
[[margin - My Recommendations as to improvements in Niagara Falls  
[[end page]]  
[[start page]]  
35  
bleach chamber, extra evaporating bottles and specially of reconstruction of old cells in the plans outlined by me some time ago. Interview with Sage as to damage suit of Niagara Plant. He advises to keep ready to go and testify as a witness.  
Gave Dr. Schweitzer copy of my paper for Society of Chemical Industry. Stocks went down awfully.  
[[margin - Big drop in stocks in Wall Street]]  
Cons. Gas dropped to 111. If I had followed my own judgment, I would have done better by converting last Saturday into more profitable securities.  
Charge one full day to D & F Co.  
May 28. Worked early in my lab. on Soy. Then went to New York office of D. & Funding Co.  
[[margin - 2/3/x]]  
Was busy all afternoon with



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[[Vertical Margin Note: Damage suit in Niagara Falls]]  
various matters then had consultation with Mr. Gray  
(Mr. Sage's partner) at the N.Y Bar association until 6:20 P.M relative  
the testimony the damage suit which has been started at Niagara Falls.  
I outlined the examination of myself as witness.

Charge 2/3 day.

I came home after supper.

May 29. Did some work in laboratory then busied myself with further  
study of testimony of Goodwin case . vs. Eastman

[[margin - Goodwin - Eastman suit]]

Lovejoy told that formula of their dope was prior to Dec. 16 1902

[[lanylin]] acetate 5 parts

Fusel oil 15 to 18 parts

[[end of page]]

[[start page]]

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camphor. 3 to 5 parts

Cooper's No. 4 96 parts.

(22 nitro cellulose

74 wood alcohol]

Wood alcohol 30 to 40 parts.

This was used from Feb 1897 until 1902.

From the fall of 1900 until the ~~and~~ 1902  
used also the following formula

Fusel oil 15

Camphor 3

Nitro cellulose ~~75 to 100~~ 22

Mixture of wood

alcohol & acetone

in about equal quantities

[[large bracket facing left encompassing last 3 lines]] ..75 to 100

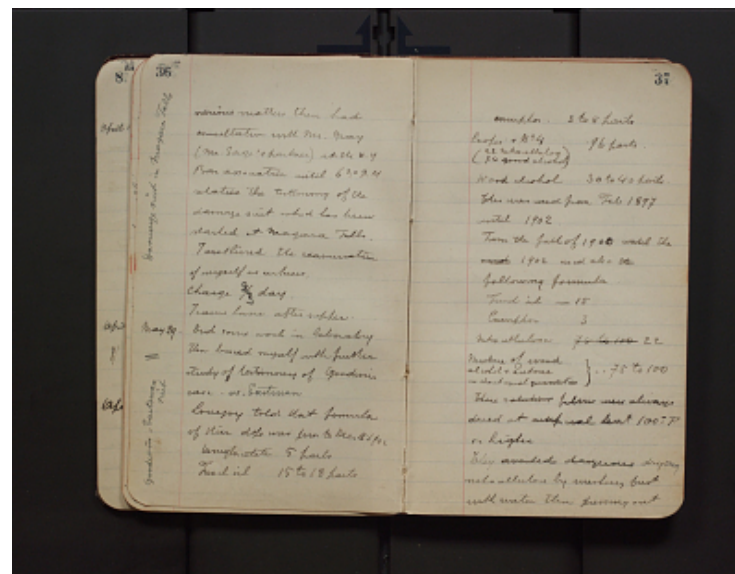
These ~~solutions~~ films were always

dried at artificial heat 100<sup>o</sup> F or higher

They avoided dangerous drying nitro cellulose by washing first

with water then pressing out

[[end of page]]



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then washing out the water with amylalcohol which does not dissolve nitrocellulose but removes the remaining water. Then by redistillation of the fusel oil they were able to dehydrate the latter and the nitrocellulose never became dry ~~until~~ before dissolving. As substratum for producing adherence they used: Silicate of Na as beneficial ingredient in the other the beneficial ingredient was gelatine.

Silicate of soda was dropped in favor of gelatine. They used silicate as long as their dope contained amyloacetate.

Cinematograph films are 0.005 of an inch thick, some film was made 0.0032 of an inch

[[Margin - Cinematograph films.]]

[[end page]]

[[start page]]

39

The substratum was applied in a pool (jelly) and squeegeed on. All the remainder of the day was devoted to write up testimony for damage suit against Niagara Plant.

May 30. Wrote some letters in the morning and finished writing up testimony for D. & F. case. 1/3 day

[[margin- 1/3/x]]

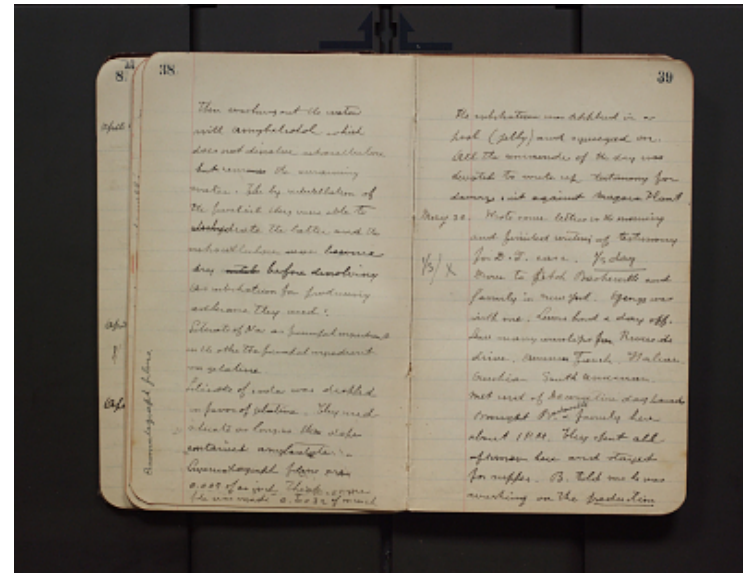
Drove to fetch Baskerville and family in New York. George was with me. Lewis had a day off. Saw many warships from Riverside Drive. American French. Italian. Austrian. South American.

Met end of Decoration day parade

Brought Baskerville & family here about 1 P.M. They spent all afternoon here and stayed for supper. B. told me he was working on the

production

[[end page]]



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of Radium which if successful would mark an epoch in chemistry. Thurlow was in Laboratory and told me he had obtained some further encouraging results in new synthetic product solvent of nitrocellulose. Drove the Baskervilles and their two children home at night. Nina and George accompanied me. We arrived here at about 10:15 P.M.

[[margin - the Baskervilles visit us.]]

~~June 1.~~ May 31. Spent most of the day in the laboratory, with Thurlow

June 1./ Spent day partially in Laboratory partially fitting up car with odometer. Drove to Young's in afternoon. In evening went for a small drive with Mandels.

[[end page]]

[[start page]]

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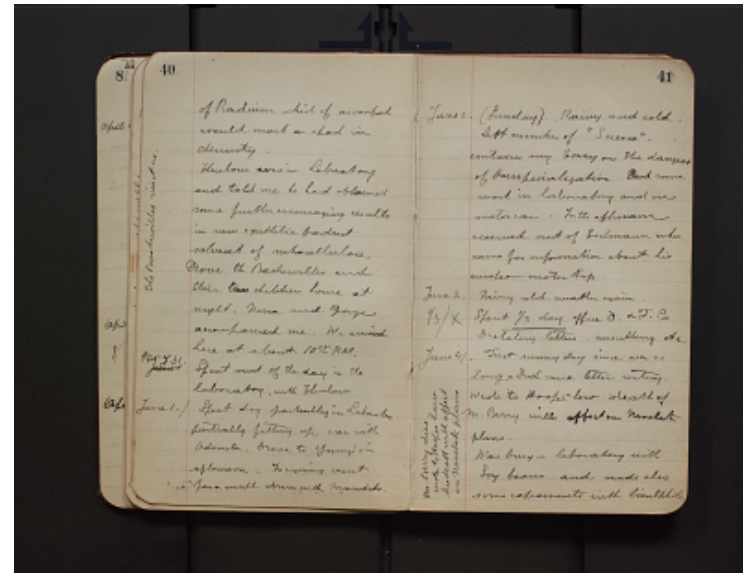
June 2 (Sunday) Rainy and cold. Last number of "Science". contains my Essay on the dangers of Overspecialization. Did some work in the laboratory and on motor car. In the afternoon received visit of Erdmann who came for information about his european motor trip.

June 3. Rainy cold weather again. Spent 1/3 day office D. & F. Co Dictating letters, consulting, etc.

[[margin - 1/3x]]

June 4/. First Sunny day since ever so long. Did some letter writing. Wrote to Hooper how death of Mr. Berry will affect our Novolak plans. Was busy in laboratory with Soy beans and made also some experiments with bisulphite

[[margin - Mr. Berry dies wrote to Hooper how his death will affect our Novolak plans]]



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waste liquor. I intend to apply for a patent for impregnation of wood alone a in conjunction with other antiseptic products. Thought to make a good impregnant because it contains extractive materials which will confer strength and second because it contains products which coagulate albumen and will probably act as an antiseptic.

[[Margin - Soy Beans and sulphite impregnation of wood]]

Wrote to mother and sent check of \$100.

[[margin - two short lines]]

June 5. ~~Sunday~~ cold and rainy]]

~~June 6]]~~

[[margin - Sold 200 shares Gas and reinvested in 200 S&R. Con.]]

Went to New York. Charge half day to D. & F. Co. Consultation with Sage. Hooker & differnt work and interview with Mr. Lufbery.

[[margin - 1/2x]]

June 6. Spent ~~half day~~ (charge) at ~~at~~ from 11 A.M to 5:10 P.M. at

[[end page]]

[[start page]]

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D. & F. Co. ~~Interview~~ with Mr. Lufbery.]

Charge ~~half~~ 2/3 day.

[[Margin - 2/3 / X]]

June 7. Went again to New York.

One half day fully occupied at D. & F. Co. writing foreign letters for patent matter.

[[margin - 1/2x/

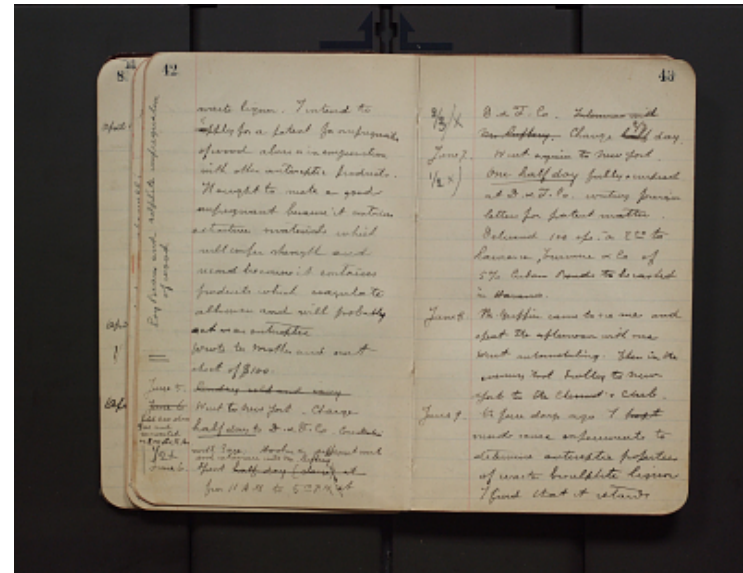
Delivered 100 cps. a 2.50 to Lawrence, Turmue & Co of 5% Cuban Bonds to be cashed in Havana.

June 8. Mr. Griffin came to see me and spent the afternoon with me.

Went automobiling. Then in the evening took trolley to New York to the Chemist' Club.

June 9. A few days ago I ~~kept~~ made some experiments to determine antiseptic properties of waste bisulphite liquor. I find that it retards

[[end page]]



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fermentation in bouillon and coagulates gelatine from gelatine solutions  
June 11. Went to see Professor Ira Woolson relative to future testing of impregnated wood

Half a days work at office of Development and Funding Co.

[[Margin - 1/2 X]]

June 12. One full days work for D. & F. Co. partially at office partially at laboratory of Dr. McKenna

[[Margin - 1/X]]

June 13. Paid my taxes. Went to New York to ask Dr. McKenna to make some cement tests with me in which cement is mixed with bisulphite waste liquor. The tests were made by one of his assistants.

Spent 1/2 day at Development & Funding Co.

[[Margin - Experiments of sulphite waste liquor for Portland cement]]

[[margin - 1/2 / X]]

[[end page]]

[[start page]]

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June 15. Worked in laboratory and spent day at home

June 16. Sunday. Drove to Bidemeyers in the morning.

In the afternoon stayed home. An unpleasant afternoon

June 17. I wrote a letter to my mother and I enclosed banknote for 50 Lire \$ for Leonie.

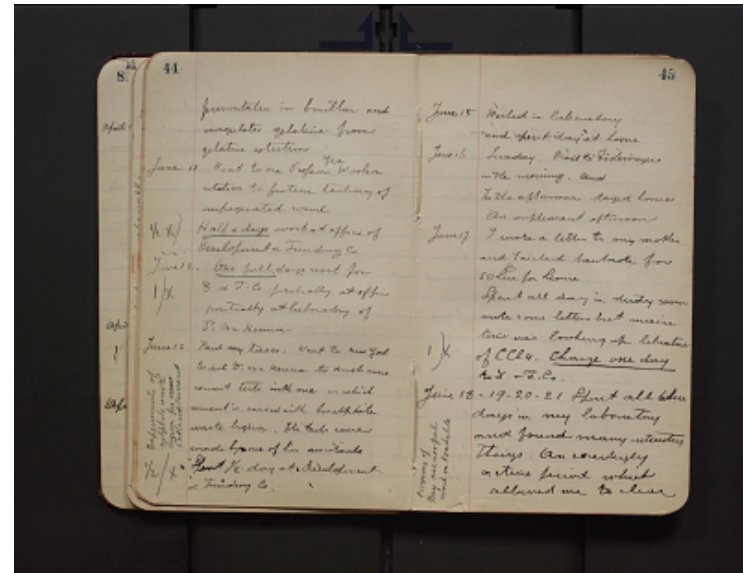
Spent all day in study room, wrote some letters but main time was looking up literature of  $CCl_4$ . Charge on day to D. & F. Co.

[[Margin - 1 / X]]

June 18-19-20-21. Spent all days in my laboratory and found many interesting things. An exceedingly active period which allowed me to learn

[[margin - Beginning of my successful work on Bakelite]]

[[end page]]



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[[margin - First spelling of Bakalite  
many mysterious reactions with which Thurlow has been struggling unsuccessfully since over a year. See laboratory notes marks CLS and BKL.

I consider this days very successful work which has put me on the knot of several new and interesting products which may have a wide application as plastics and varnishes. Have applied for a patent for a substance which I shall call Bakalite.

Have found also a very practical solution for

[[end page]]

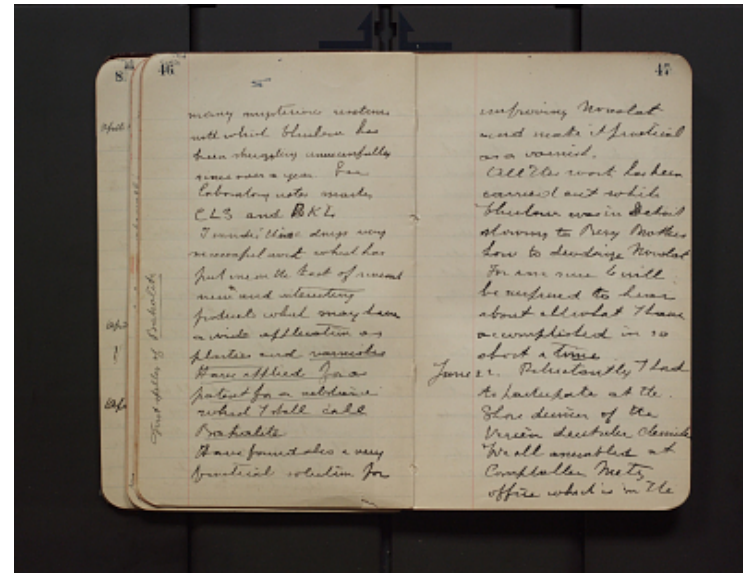
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improving Novolak and make it practical as a varnish. All this work has been carried out while Thurlow was in Detroit showing to Berry Brothers how to deodorize Novolak. I am sure he will be surprised to hear about all what I have accomplished in so short a time.

June 22. Reluctantly I had to participate at the Shore dinner of the Verien deutreler Chemists. We all assembled at Comptroller Metz office which is in the

[[end page]]



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[[margin - My trip with motor car to shore dinner of Chemists club Metz as a controller of N.Y City]]

Stuart building just over a clothing store which occupies the first floor. Dr. Benson had come with me from Hastings. Metz was in his office - pay day. surrounded with many other people. - clerks - attorneys etc. He was not on his desk but was standing around chatting and joking and mingling in different groups.

His motor car was there too.

Hoffmann - Culman Hugo Lieber ~~and~~ then ~~Plant~~ and three or four other chemists whose name I do not remember had also their motor cars, so that all

[[end page]]

[[start page]]

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the members of the excursion could be accommodated.

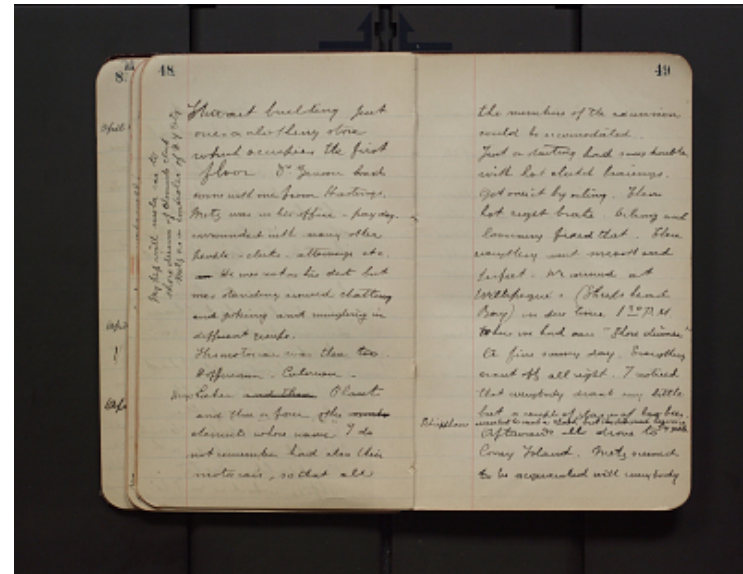
Just on starting had some trouble with hot clutch bearings. Got over it by oiling. Then hot right brake. Oiling and loosening fixed that. Then everything went smooth and perfect. We arrived at Willipeque's (Sheephead Bay) in due time 1:30 P.M. where we had our "shore dinner"

A fine sunny day. Everything went off all right. I noticed that everybody drank very little but a couple of glasses of beer.

Schipphaus wanted to make a speech but they drowned his voice by yells.

Afterwards all drove to Coney Island. Metz seemed to be acquainted with everybody

[[end page]]



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[[margin - Metz]]

from the "Giant Scotchman" at the "End of the World" show, to the manager of the Scenic railway.

[[margin - Schipphaus]]

We tried to lose Schipphaus by giving in the hands of the giant of the "End of the World" who led him in a labyrinth. Drove home at 5 P.M. with Zinsser, Moore, & Bowman. Car ran beautifully over that excellent Coney Island ~~Drive~~ Boulevard. Took supper at Mouquins then all went to Princeton Club thence home. Put Zinsser at his house about 11:30 P.M.

[[margin - Zinsser]]

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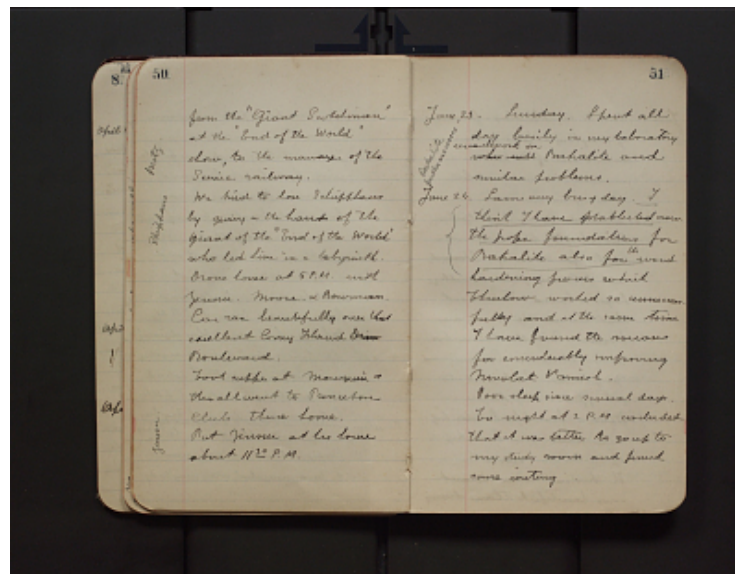
51

June 23. Sunday. Spent all day busily in my laboratory ~~whic~~ whic will ~~research~~ research work on Bakalite and similar problems.

[[margin - Bakalite further successes]]

June 24. Same very busy day. I think I have established now the proper foundations for Bakalite also for the wood hardening process which Thurlow worked so unsuccessfully and at the same time I have found the means for considerably improving Novolak Varnish.

Poor sleep since several days. To night at 2 P.M. concluded that it was better to go up to my study room and finish some writing.



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June 25. Work in my laboratory. finished up everything as far as preliminary research work of Bakelite is concerned. Wrote a few letters in the afternoon.

[[margin - Bakelite]]

June 26. Lewis drove me to the Yonkers Pier where I took the Hudson boat for Albany. ~~Found out~~ Many girls and college boys on board. Found out that this was the boat races between Cornell Columbia Navy, Wisconsin Syracuse and Georgetown. Concluded to get off at Poughkeepsie.

What a beautiful ~~this~~ trip ~~on the Huds~~ this boat trip up the Hudson ever is!

The Hudson never appeared more beautiful than during

[[end page]]

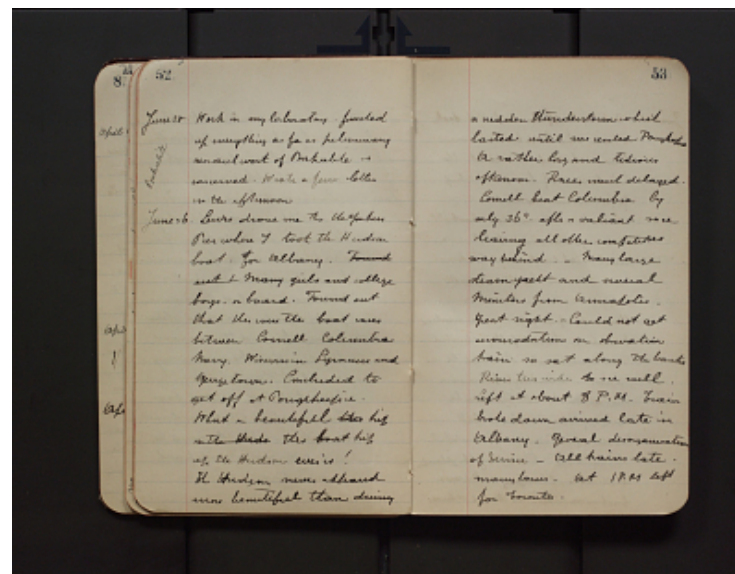
[[start page]]

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a sudden thunderstorm which lasted until we reached Poughkeepsie. A rather long and tedious afternoon. Races much delayed. Cornell beat Columbia by only 36" after a valiant race leaving all other competitors way behind. - Many large steam yacht and several monitors from Annapolis. Great night. - Could not get accommodation on observation train so sat along the banks

River too wide to see well. Left at about 8 P.M. Train broke down arrived late in Albany. General disorganization of service - All trains late. many hours. at 1 P.M. left for Toronto.

[[end page]]



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June 27. Nearing Buffalo met E. H. Hooker on train who had been on same train. He told me about the tribulations of his motor trip to Jamestown exhibition.

Arrived at Toronto about 1:30 in King Edward Hotel. A most excellent well kept large modern hotel. Good service.

[[margin - Chemical meeting Toronto University]]

University of Toronto. Fine modern buildings beautifully situated Fine equipment. Listened to papers. - ~~Evening~~

~~afternoon garden party at Rosedale house of Mr. Osler, M.P. brother of Dr. Osler. Beautiful grounds. Band of Highlanders with kilts playing. Drove back in carriages to Hotel thence~~

[[end page]]

[[start page]]

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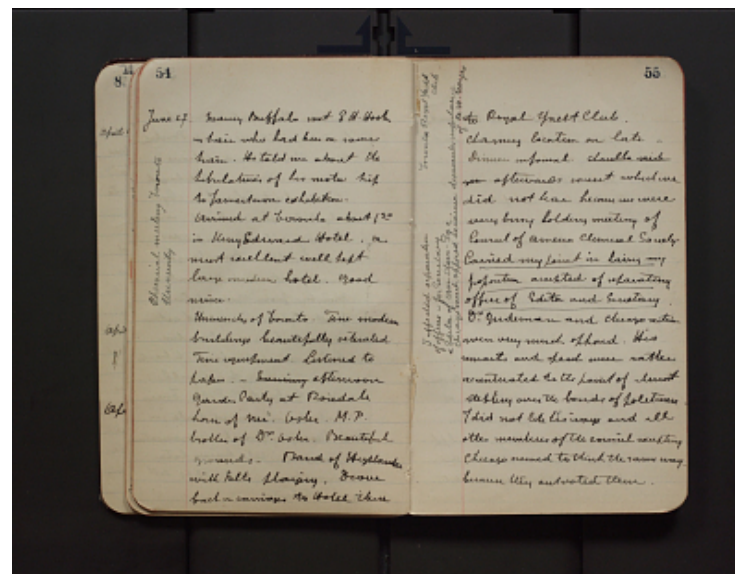
[[margin - Toronto's Royal Yacht Club]]

to Royal Yacht Club. Charming location on lake - Dinner informal.

~~chancellor said~~ afterwards concert which we did not hear because we were very busy holding meeting of Council of American Chemical Society. Carried my point in having my proposition accepted of separating office of Editor and Secretary. Dr. Gunderman and Chicago section were very much opposed. His remarks and speech were rather accentuated to the point of almost stepping over the bounds of politeness. I did not like his ways and all other members of the council excepting Chicago seemed to think the same way. because they out voted them.

[[margin - I effected the separation of offices - for secretary & Editor of Am. Chem. Soc. Chicago much opposed because diminishes importance of A.W. Noyes]]

[[end page]]



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Returned home by the last boat after ~~anot~~ an otherwise quiet evening.  
~~July~~ June 28 Further meeting at University. Lunch in dining hall of University. Very interesting collection of ~~indian~~ paintings of indian subjects. Council meeting in the afternoon then drive in carriages furnished by Toronto committee and afternoon tea at the Lieutenant Governor's. Drive home all then in the evening formal dinner. Speeches did not amount to much.

*[margin - Am. Chem. Soc. trip to Guelph Agricultural station. Then Cobalt mines]*

~~July~~ June 29 Left the station at 9:30 with special train for ~~of the~~ for ~~Lake Temiskaming~~ Guelph Agricultural college. a fine well equipped institution

~~end page]~~  
~~start page]~~

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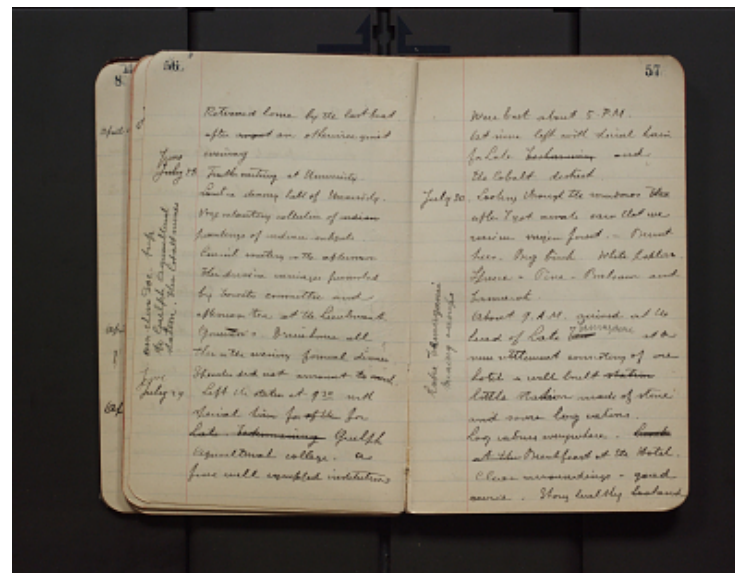
were back about 5 P.M.

At nine left with special train for Lake ~~Temiskaming~~ and the Cobalt district.

July 30. Looking through the windows ~~the~~ after I got awake saw that we were in virgin forest. - Burnt trees. Big birch. White poplar, Spruce, Pine, Balsam and Tamarak  
*[margin - Lake Temisgammin mining camps]*

About 9 A.M. arrived at the head of Lake ~~Temiskaming~~ Temagami at a new settlement consisting of one hotel a well built ~~station~~ little station made of stone and some log cabins.

Log cabins everywhere. ~~Lunch at the~~ Lunch at the ~~Breakfast at the Hotel. Clean surroundings - good service. Strong healthy last~~ Breakfast at the Hotel. Clean surroundings - good service. Strong healthy ~~last~~  
~~end page]~~



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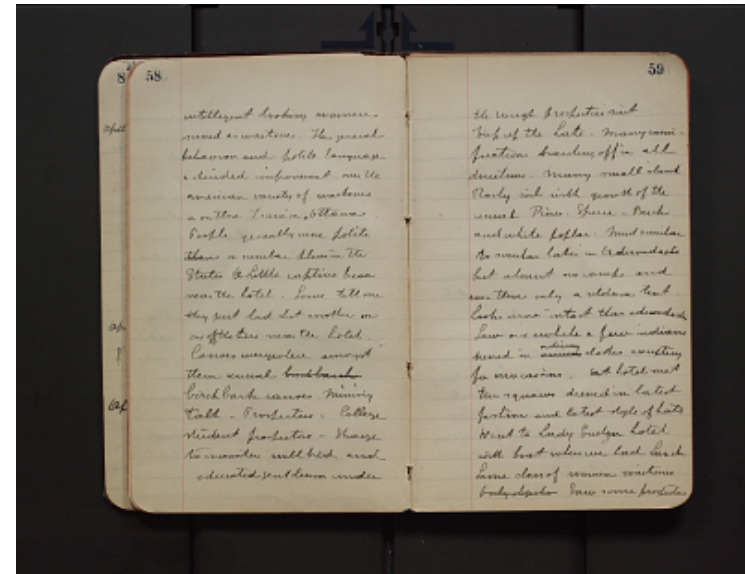


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intelligent looking women served as waitresses. Their general behavior and polite language a decided improvement over the american variety of waitresses or on those I saw in Ottawa. People generally more polite than in number places in the States. A little captive bear near the hotel. Some tell me they just had shot another on one off the trees near the hotel. Canoes everywhere amongst them several ~~birchbark~~ birch bark canoes. Mining talk. Prospectors. College student prospectors - strange to encounter well bred and educated gentleman under ~~[[end page]]~~ ~~[[start page]]~~

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the rough prospectors suit. Trip up the Lake. Many river junctions branching off in all directions. Many small island Rocky soil with growth of the usual Pines, Spruce. Birch and white poplar. Much similar to similar lakes in Adirondacks but almost no camps and even then only a seldom tent. Looks more intact than adirondacks. Saw once awhile a few indians dressed in ~~[[america]]~~ ordinary clothes excepting for moccasins. At hotel met two squaws dressed in latest fashion and latest style of hats. Went to Lady Evelyn hotel with boat where we had lunch. Same class of women waitresses ~~[[Only objecti]]~~ Saw some prospectors ~~[[end page]]~~



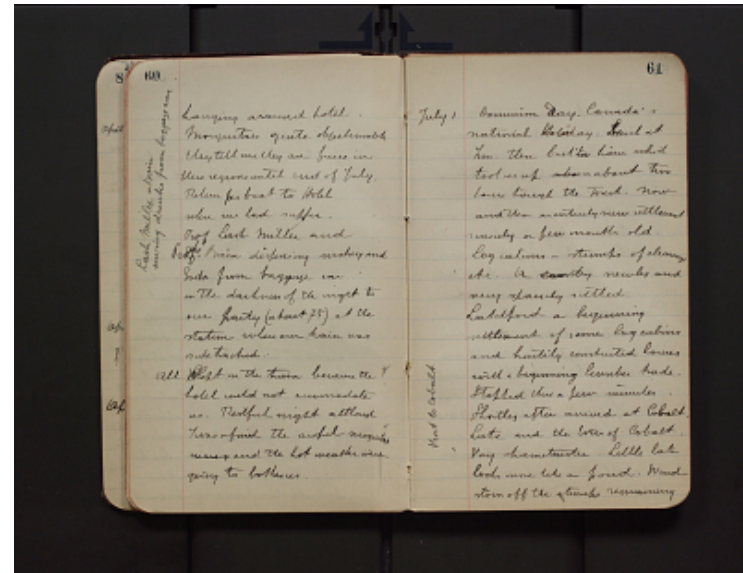
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hanging around hotel. Mosquitoes quite objectionable they tell me they are fierce in these regions until end of July. Return by boat to Hotel where we had supper. Prof. Lash Miller and Prof. Bain dispensing whiskey and soda from baggage car in the darkness of the night to our party (about 75) at the station where our train was sidetracked. Lash Miller & Bain serving drinks from baggage car  
All slept in the train because the hotel could not accomodate us. Restful night although I am afraid the awful mosquitoes ~~were~~ and the hot weather were going to bother us.  
[[end page]]  
[[start page]]

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July 1 Dominion Day. Canada's national Holiday. Lunch at Inn then back to train which took us up ~~abo~~ in about two hours through the forest. Now and then an entirely new settlement scarcely a few months old. Log cabins - stumps of clearings etc. A country newly and very sparsely settled. Latchford a beginning settlement of some log cabins and hastily constructed houses with a beginning lumber trade. Stopped there a few minutes. Shortly after arrived at Cobalt Lake and the town of Cobalt. Very characteristic. Little lake looks more like a pond. Wood torn off the stumps remaining Visit to Cobalt  
[[end page]]



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[[Margin:Cobalt [caret:new] Mining camp beginnings & boom]] everywhere. and between them lined up irregularly any kind of ~~wooden~~ hastily constructed flimsy wooden shanties, some of them covered with galvanized iron. ~~lo~~ some tents and log cabins all lined up without regular order. Few of any painted ~~ne~~ all in the raw.

~~Few~~ Here and there a newly unpainted wooden structures indicating the location of an entrance to a shaft or a concentrator.

Everything in the first stages of a mining camp. Assayer office - mining engineers - or general store - ~~and agents~~ real estate and mining agents

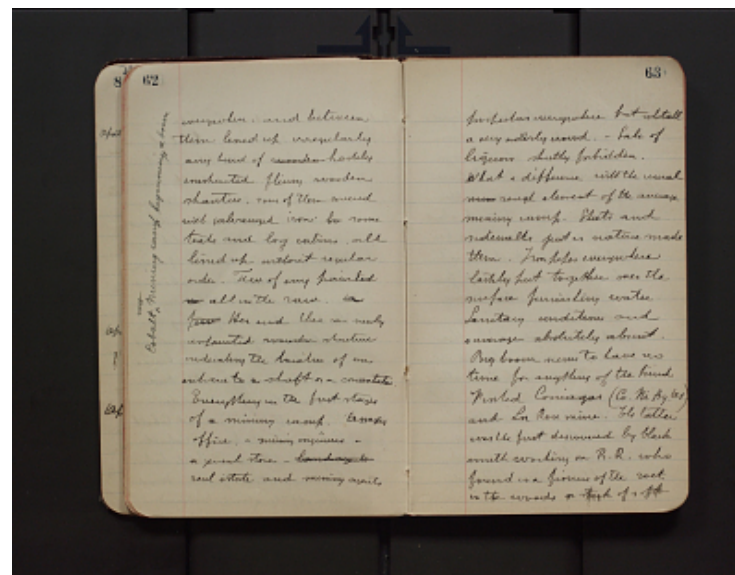
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prospectors everywhere but whitall a very orderly crowd. - Sale of liquors strictly forbidden. What a difference with the usual ~~min~~ rough element of the average mining camp. Streets and sidewalks just as nature made them. Iron pipes everywhere hastily put together over the surface furnishing water. Sanitary conditions and sewerage absolutely absent. Big boom seems to have no time for anything of the kind Pented Coniagos (Co. Ni Ag. bes) and La Rue mine. The latter was the first discovered by black smith working on R.R. who found in a fissure of the rock in the woods or streak of soft

[[end page]]



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metal which he took for lead. Consequently he ~~made~~ filed a claim for a lead mine which turned out to be a vein of almost pure silver. I saw the vein on the surface between the rock about 4 to 5 inches wider. Could be polished with a knife so as to show the native metal from which indicated other veins in other fissures. Nipissing just a short distance further and other mines showed the same abundance of unusually rich ore.

Lunch at the rudimentary hotel at Cobalt. A big wooden box divided in small wooden partitioned

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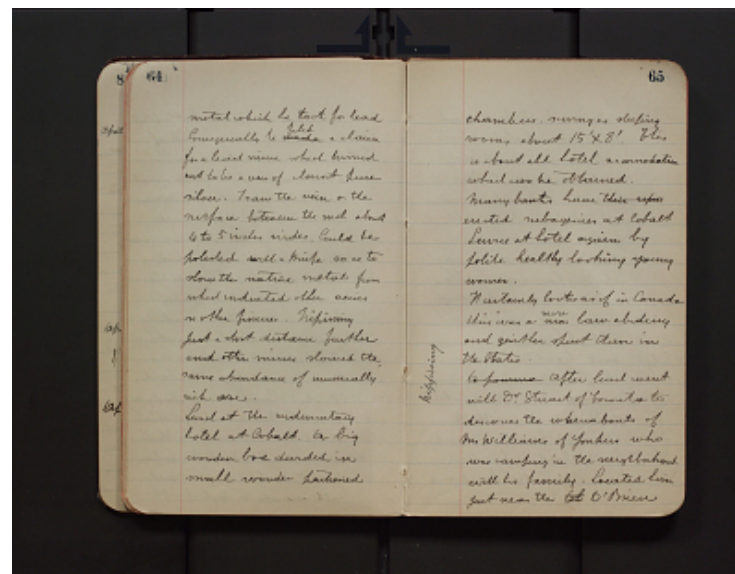
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chambers serving as sleeping rooms about 15' X 8'. This is about all hotel accommodation which can be obtained. Many banks have ~~their~~ ~~reps~~ ~~erected~~ subagencies at Cobalt. Service at hotel again by polite healthy looking young women. It certainly looks as if in Canada there was a more law abiding and gentler spirit than in the States.

[[margin - Nipissing]]

~~A~~ forma ~~After~~ lunch went with Dr. Stuart of Toronto to discover the whereabouts of Mr. Williams of Yonkers who was camping in the neighborhood with his family. Located him just near the ~~Ob~~ ~~O'Brien~~

[[end page]]



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mine, where he had rigged up three comfortable tents overlooking the town of Cobalt. His children seemed to have been much bothered by mosquitoes. At 5 P.M. our train left for ? where we stopped at the club and where we had dinner. Thence we continued our trip and arrived next morning about 9 A.M. at Toronto.

July 2. Took boat to Lewiston thence electric cars along Gorge and over Buffalo went to East Aurora to the Roycroft Inn. Was received by Hubbard who called us "brother" shook hand and

[[margin - Roy Croft Inn]]

[[end page]]

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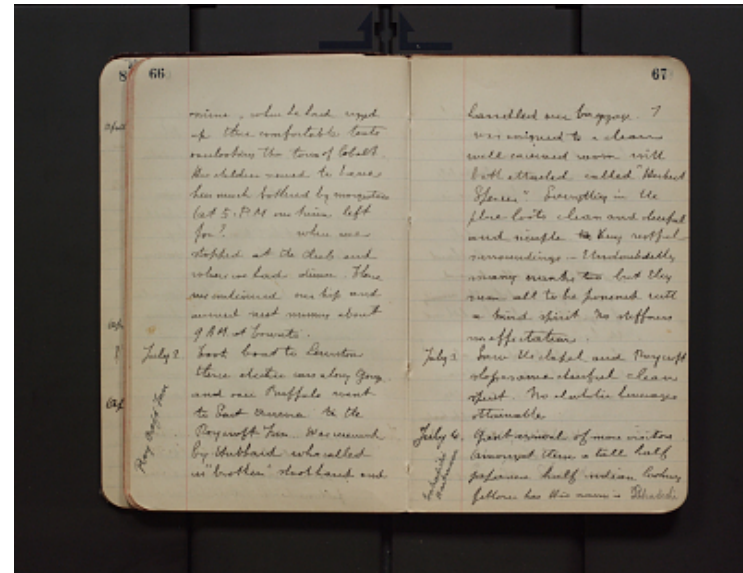
handled our baggage. I was assigned to a clean well conceived room with bath attached called "Herbert Spencer". Everything in the place looks clean and cheerful and simple. Very restful surroundings. - Undoubtedly many cranks too but they seem all to be possessed with a kind spirit. No stiffness nor affectation.

July 3. Saw the Chapel and Roycroft shop - same cheerful clean spirit. No alcoholic beverages obtainable.

July 4. Great arrival of more visitors amongst them a tall half Japanese half Indian looking fellow His name is Sakadichi

[[margin - Sakadichi Hartmann]]

[[end page]]



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[[Margin - July 5 July 6 July 7]]

Hartmann. Also a short man with grayish hair brilliant black eyes and ~~brow~~ tawny skin. looks like an Armenian his name is :

Morning assembly in chapel ~~First~~ An address by Hubbard on Health. Excellent and very witty. Develops the necessity of right living for health and the harm of drugs.

Then we walk to Spring about 1/4 mile further, where under some trees near the river a natural ~~amphitheater~~ amphitheater exists and ~~wer~~ where some benches arranged one above the other complete

[[end page]]

[[start page]]

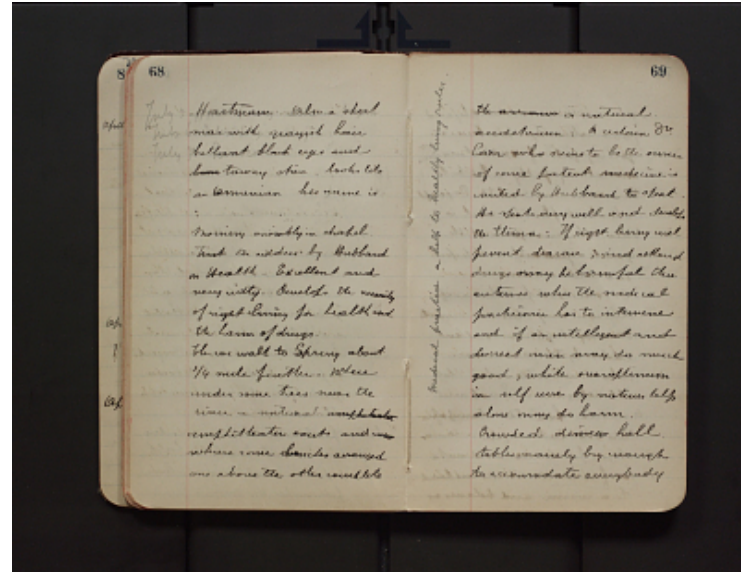
69

~~the arran~~ a natural auditorium: a certain Dr. Carr who seems to be the owner of some patent medicine is invited by Hubbard to speak. He speaks very well and develops the theme : If right living will prevent disease, and although drugs may be harmful there are times where the medical practitioner has to intervene and if an intelligent and discreet man may do much good, while overoptimism in self cure by natures help alone may do harm.

Crowded dinner hall tables scarcely big enough to accommodate everybody

[[margin - medical practice a help to healthy living rules]]

[[end page]]



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yet everything goes simply and good naturedly. waitresses are young girls of excellent manners several very pretty who take the summer courses at the Raycroft school. After their work is over they mingle with guests ~~just as if~~ with perfect ease and assurance.

One does not feel here as if there were any classes or servants. ~~Evening~~ Afternoon excellent address by the American who develops the idea that all religions in Europe and America bear the stamp of their oriental origin. A religion for slaves and not for free men Man is compared to a worm and behaves as

[[end page]]

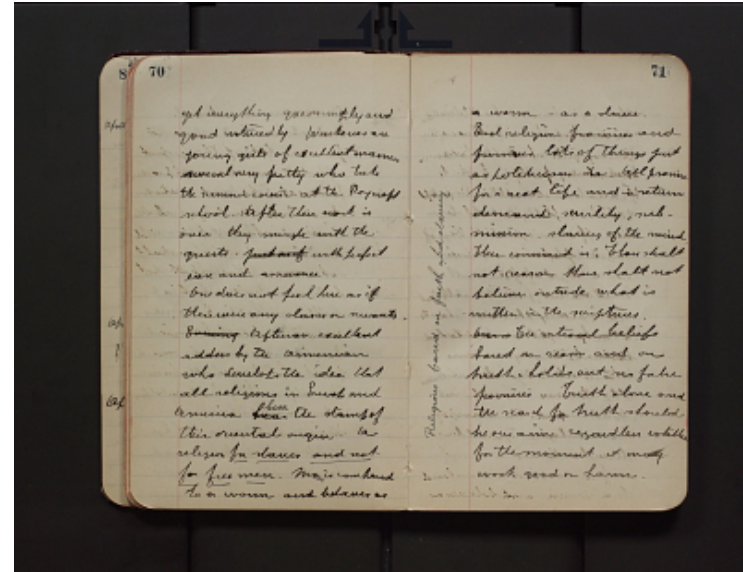
[[start page]]

71

worm - as a slave. Each religion promises and promises lots of things just as politicians do. All promise for a next life and in return demand servility, submission slavery of the mind. Their command is; thou shalt not reason thou shalt not believe outside what is written in the scriptures. Our rational beliefs based on reason and on truth holds out no false promises, truth alone and the search for truth should be our aim regardless whether for the moment it may work good or harm

[[margin - religions based on faith and slavery]]

[[end page]]



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A Mr. Schneider had developed the day before the following theme: musical education backwardness. Children get piano lessons not to educate them musically but to show them off at a recital. - Sign of respectability Learning music with the object of [[proving]] with it. Music has two sides the intellectual and the emotional side.

[[Margin - wrong musical education]] The latter has most adherents and has made many victims. Witness several great musicians who became insane in about the same way as overindulgence in all stimulants.

[[end page]]

[[start page]]

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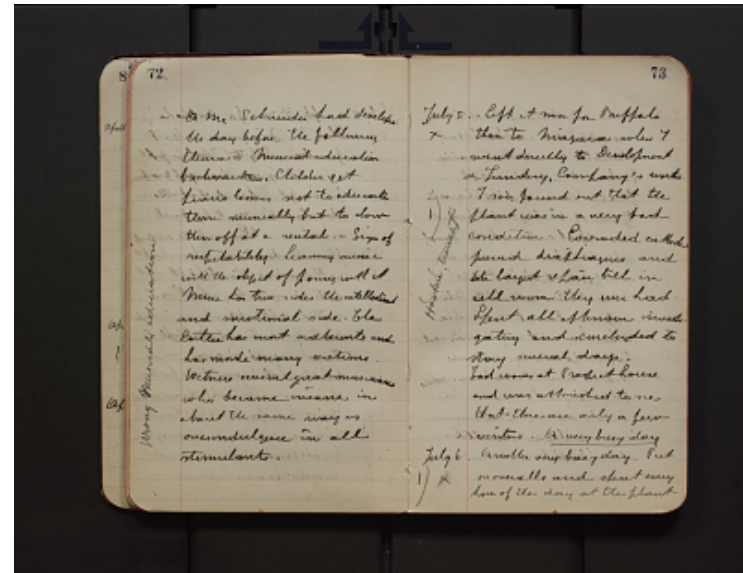
July 5th

[[margin - 1/x Hooker troubles]]

Left at noon for Buffalo then to Niagara where I went directly to Development and Funding Company's works. I soon found out that the plant was in a very bad condition. Corroded cathodes pierced diaphragms and the largest repair bill in cell room they ever had. Spent all afternoon investigating and concluded to stay several days. Took rooms at Prospect house and was astonished to see that there are only a few visitors. A very busy day

July 6 Another very busy day. Put on overalls and spent every hour of the day at the plant

[[end page]]



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July 7. Sunday Another day in overalls. I conclude that trouble is due to many causes.

[[margin - 1/X]]

Malfunction of diaphragm portion of the edges not being in contact with the cathode from which they are separated by interposed rubber shields. This allows asbestos to be impregnated with acid liquor instead of alkaline liquor. result: corrosion. Have found convincing proof to that effect.

[[margin - Hooker troubles]]

Once corroded, Cl and anode liquor escaped through the iron of side plates and continue corrosion.

[[end page]]

[[start page]]

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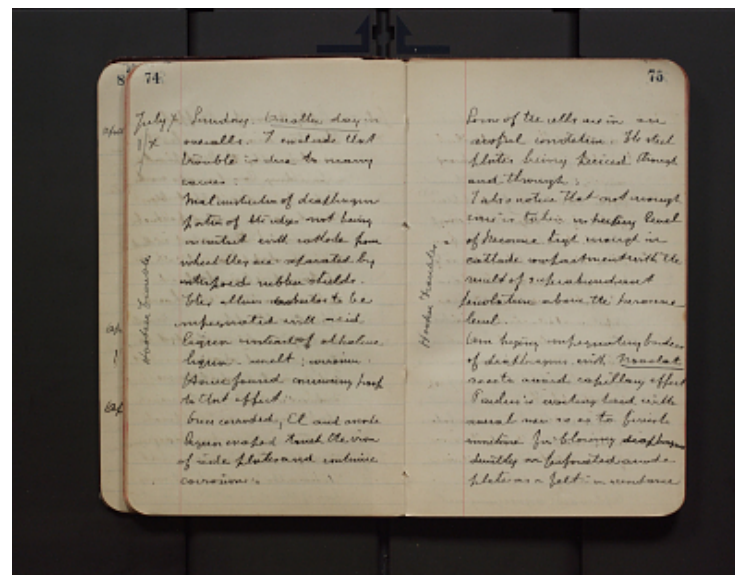
Some of the cells are in an awful condition. The steel plates being pierced through and through.

I also notice that not enough care is taken in keeping level of kerosene high enough in cathode compartment with the result of superabundant percolation above the kerosene level.

Am trying impregnating borders of diaphragms with Novalak so as to avoid capillary effect. Parker is working hard with several men so as to finish machine for blowing diaphragms directly on perforated anode plates as on felt: in accordance

[[margin - Hooker troubles]]

[[end page]]



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[[margin - Hooker troubles]]

with my method for which I applied for a patent. I am trying also to improve my patent diaphragm paint by the addition of one of the following ingredients: soap, starch - pulverized roisin. I try these materials so as to produce a less permeous diaphragm paint and thus start a cell on lower percolation.

July 8 Another busy day "in overalls".

[[margin - 1/X]]

We succeeded in making a rather good diaphragm after my method. using soap lye instead of silicate for binding the fibers and wetting ~~under~~ the flucculent asbestos fiber under a sheet of wet burlap. Afterwards squeezing out

[[margin]] Hooker troubles [[/margin]]

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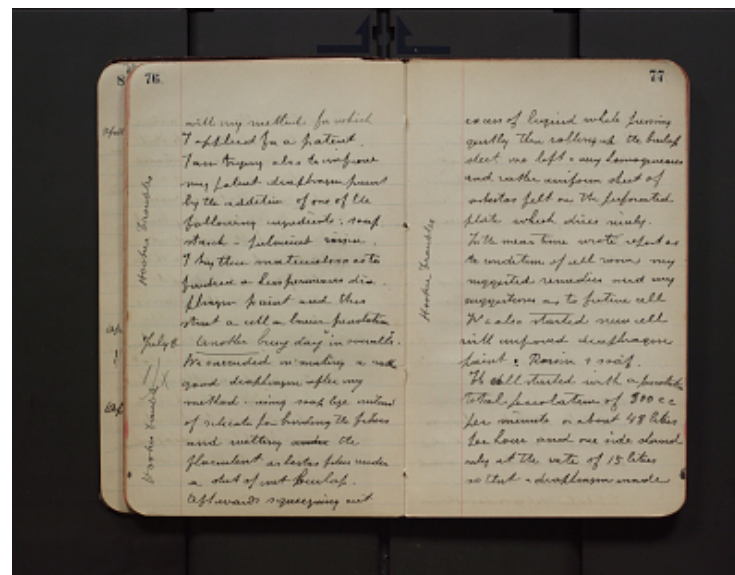
[[start page]]

[[preprinted]] 77 [[/preprinted]]

[[margin]] Hooker troubles [[/margin]]

excess of liquid while pressing gently then rolling up the burlap sheet we left a very homogeneous and rather uniform sheet of asbestos felt on the perforated plate which dries nicely. In the mean time wrote report as to conditions of cell room my suggested remedies and my suggestions as to future cell. We also started new cell with improved diaphragm paint. Roisin + soap. The cell started with a ~~percolation~~ total percolation of 800 cc per minute or about 48 liters per hour and one side showed only at the rate of 15 liters so that a diaphragm made

[[end page]]



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more carefully would percolate in total at the rate of 30 liters per hour and thereafter about 15 minutes. Half an hour later the percolating liquid was almost clear.

I notice that paint mixed with starch does not dry up well it shelves off. It could not be used unless starch is boiled first. I believe the addition of plain soap will be better.

After lunch had a consultation with Cohn of Cohn & Chounnien in regard to damage suit which has been started by some residents near the works.

[[margin - Hooker damage suit]]

I told him that yesterday afternoon

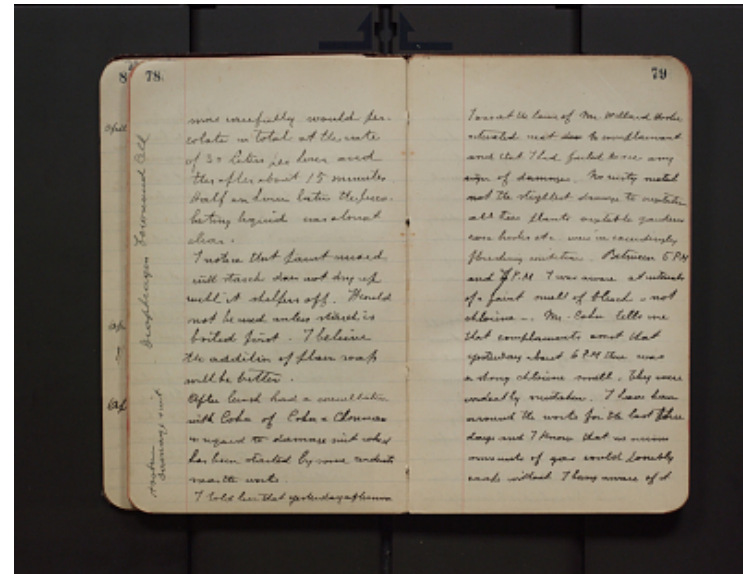
[[end page]]

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I was at the house of Mr. Willard Hooker situated next ~~to~~ complainant and that I had failed to see any sign of damage. No rusty metal not the slightest damage to vegetation all their plants vegetable gardens rose bushes etc. were in exceedingly flourishing condition. Between 5 P.M. and 7 P. M. I was aware at intervals of a faint smell of bleach - not chlorine-. Mr Cohn tells me that complainants assert that yesterday about 6 P.M. there was a strong chlorine smell. They were evidently mistaken. I have been around the works for the last three days and I know that no serious amounts of gas could possibly escape without I being aware of it

[[end page]]



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[[margin - Hooker damage suit]]

about 3 P.M I arrived at the works. While crossing the street I noticed a strong odor of chlorine from Roberts Chemical Co. As the wind blew from the river this smell was undoubtedly produced by Roberts and not by us. The smell although very strong was not sufficient to cause any damage.

I have given order to photograph all the dead trees in street and on yard of Roberts Chemical Co. ~~All~~ and the green grass on the yard of our works. All the trees were killed by Roberts Chemical Co long before we started operating.

With Mr. Paulies and Watson and Donohue I made

[[end page]]

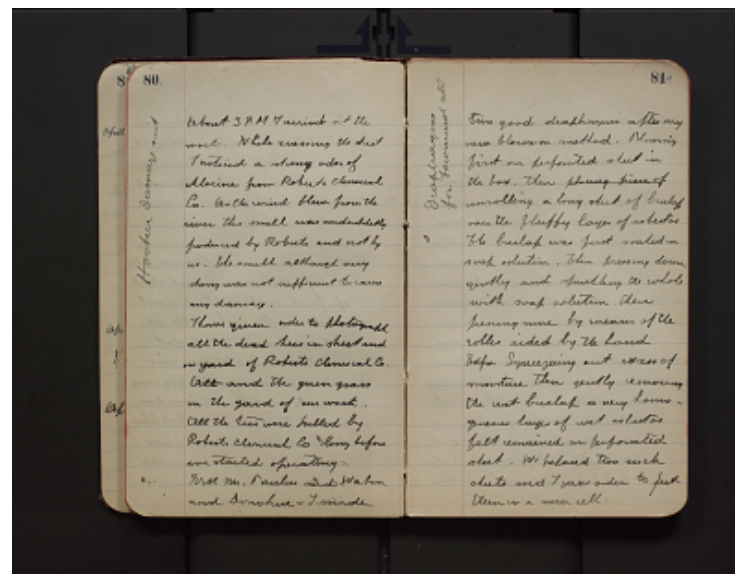
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[[margin - Diaphragm for Townsend cell]]

two good diaphragms after my new blown-on method. Blowing first on perforated sheet in the box. then ~~placing~~ placing piece of ~~unrolling~~ unrolling a long sheet of burlap over the fluffy layer of asbestos. The burlap was first soaked in soap solution. Then pressing down gently on sprinkling the whole with soap solution. Then pressing more by means of the roller aided by the hand. Squeezing out excess of moisture then gently removing the wet burlap a very homogeneous layer of wet asbestos felt remained on perforated sheet. We prepared two such sheets and I gave order to put them in a new cell.

[[end page]]



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We also succeeded in the same way in blowing a very homogeneous and regular sheet of asbestos felt on a frame on which was stretched a mosquito screen on top of which was stretched cheesecloth. In fact the latter method seems to be very practicable and will allow us to make asbestos felt or ready made diaphragm which can afterwards be applied on the perforated cathode sheets. The whole thing seems to be an assured success and confirms the excellent results I obtained some two months ago when I first attempted to produce asbestos felt for diaphragms in this

[[end page]]

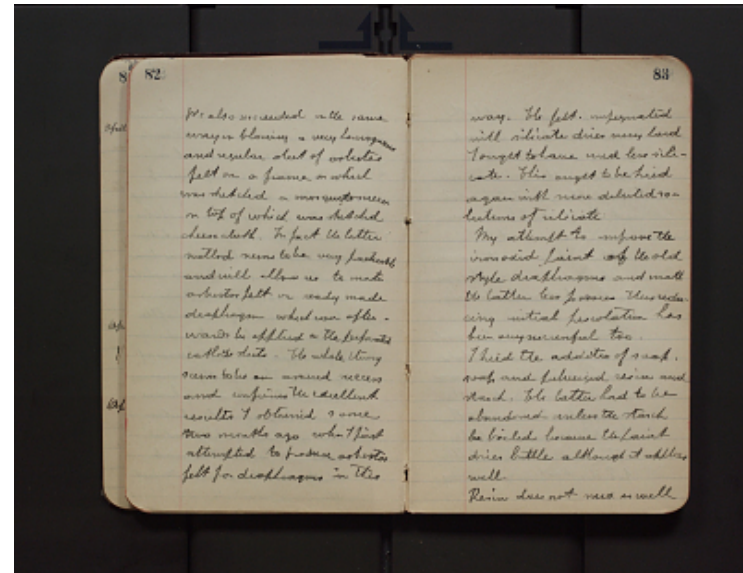
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way. The felt impregnated with silicate dries very hard. I ought to have used less silicate. This ought to be tried again in with more diluted solutions of silicate

My attempt to improve the iron oxid paint of the old style diaphragms and make the latter less porous thus reducing initial percolation has been very successful too. I tried the addition of soap. Soap and pulverized resin and starch. The latter had to be abandoned unless the starch be boiled because the paint dries brittle although it applies well. Resin does not mix well

[[end page]]



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as soap alone. But both resin and soap and soap alone accomplished the desired result. Two new cells made thus, started percolation at about 40 liters per hour gave caustic at 9% after a few minutes and after about 30 minutes gave an almost clear percolating liquid. I am very glad of the good work I have accomplished and which will mean many various improvements in the running of the Townsend cell. I spent the remainder of the afternoon dictating letter to E. H. Hooker giving my

[[end page]]

[[start page]]

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suggestions how to make the new cell and how to quickly improve the old cells.

[[margin - scratched out, charge

13.00 Hotel

1.50 overalls

24 train etc. meals

-----  
38.50]]

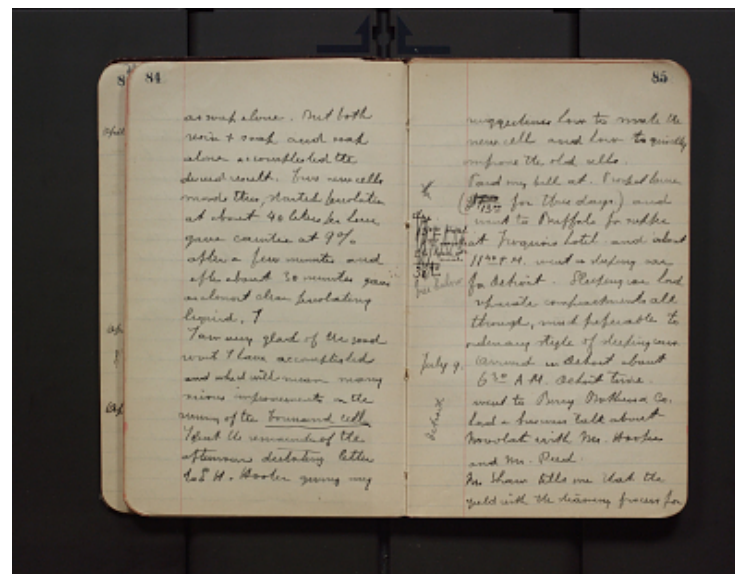
Paid my bill at. Prospect house (\$13.00 for three days.) and went to Buffalo for supper at Iroquois hotel and about 11:40 P.M. went in sleeping car for Detroit. Sleeping car had separate compartments all through, much preferable to ordinary style of sleeping cars.

July 9 Arrived in Detroit about 6:30 A.M. Detroit time. Went to Berry Brothers & Co. had a business talk about Novalak with Mr. Hooper and Mr. Reed.

Mr. Shaw tells me that the yield with the steaming process for

[[margin - Detroit]]

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deodorizing Novalak are rather low. Here are his figures  
136 lbs. Formaldehyde 5c per lb = 6.80  
240 lbs. Carboic acid 5c per lb = 12.00  
18 lbs. HCl a 1c 18

-----  
18.98

labor ect. 3.00

-----  
\$21.98

[[margin - Novalak]]

Yield after steaming: 200 lbs. 22.00 | 200/11 or about 11 cents per lb.  
I think the yield is too small and the steaming has been carried too far. It  
will be necessary to determine all this in laboratory with given quantities.  
Mr. Reed tells me that they

[[end page]]

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[[margin-

450

4

-----  
1800

225

-----  
2025

]]

2000 - 3700

100 = 180 cc

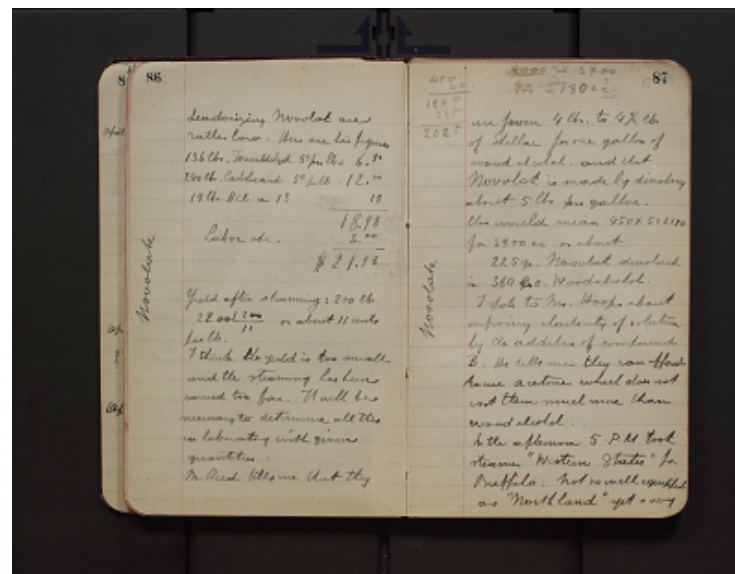
are from 4 lbs. to 4 1/2 lbs of shellac for one gallon of wood alcohol and  
that Novalak is made by dissolving about 5 lbs. per gallon.

This would mean 450 X 5 = 2250 for 3800 cc or about 225 ga. Novalak  
dissolved in 380 c.c. wood alcohol. I spoke to Mr. Hooper about  
improving elasticity of solution by the addition of compound B. He tells  
me they can afford to use acetone which does not cost them much more  
than wood alcohol.

In the afternoon 5 P.M. took steamer "Western States" for Buffalo. Not  
so well equipped as "Northland" yet a very

[[margin - Novalak]]

[[end page ]]



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comfortable steamer. Mr Hooper had engaged a parlor room with large bed an annexed bath and toilet room ( 2.50 for toilet 7.00 for room total \$9.50) yet cheaper than if I had taken train and had to take room in Buffalo or Niagara Falls for the night.

Pretty landscape along Detroit River with many flat islands. Blue Lake Erie.

Most endless discussions are due to exaggerated stand points. Truth is absolute but the relative importance of facts is ~~oft~~ almost always misunder-

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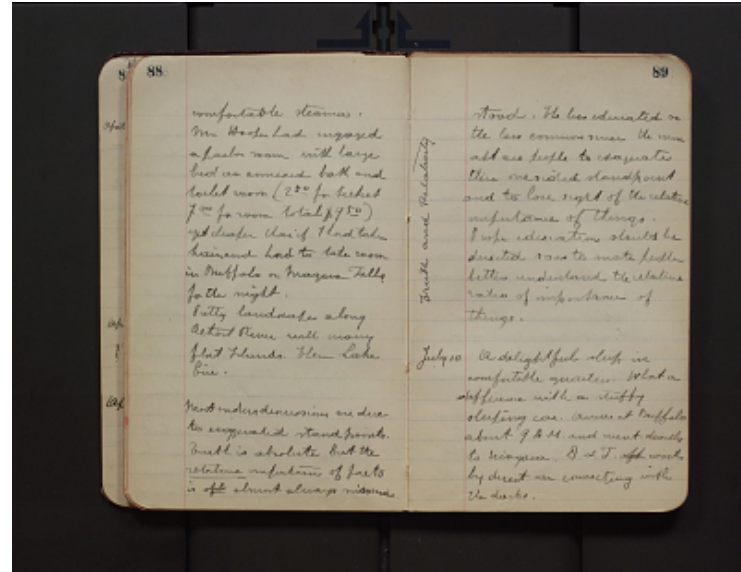
89

stood. The less educated or the less common sense the more apt are people to exaggerate their one-sided stand point and to lose sight of the relative importance of things. Proper education should be directed so as to make people better understand the relative ratio of importance of things.

[[margin - Truth and Relativity]]

July 10. A delightful sleep in comfortable quarters. What a difference with a stuffy sleeping car. Arrive at Buffalo about 9 A.M. and went directly to Niagara. D & F. ~~off~~ works by direct car connecting with the docks.

[[end page]]



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Made another diaphragm on cheesecloth with soap solution used 1 lb asbestos fiber No. 1 Everything went very smoothly. I think these isolated diaphragms will be better than those blown directly on perforated cathode. These latter did not behave well probably because they were not homogeneous nor regular.

At lunch and after met Mrs. McNitt. Brick and Shermerhorn of Acher Co. went to the ruins of their former works. Saw some of their old Acher cells. McNitt says they were run at 9000 A. with 6.7 volts. Could be run 1000 A. at that voltage. Cells complete

[[margin - Acher cells]]

[[end page]]

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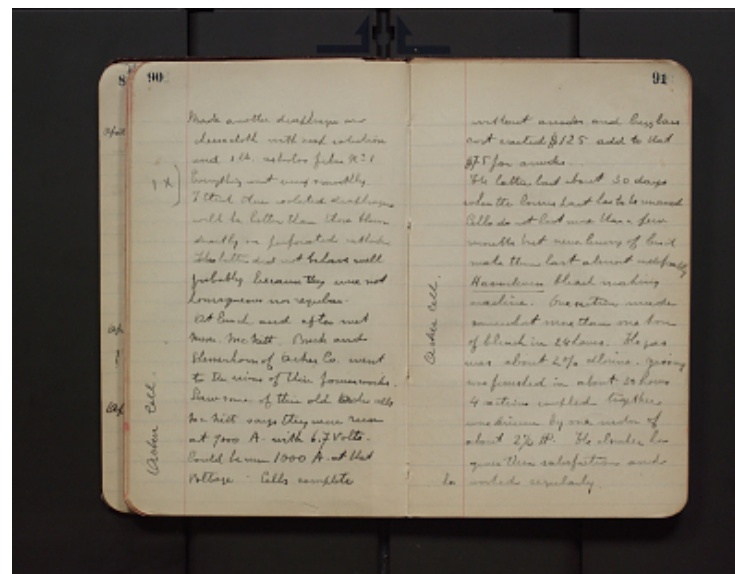
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without anode and buzz bars cost erected \$125 add to that \$75 for anodes

The latter last about 30 days when the lower part has to be renewed. Cells do not last more than a few months but new lining of brick make them last almost indefinitely. Hasemcleness bleach making machine. One section made somewhat more than one ton of bleach in 24 hours. The gas was about 2% chlorine. Gassing was finished in about 30 hours. 4 sections coupled together were driven by one motor of about 2 1/4 HP. The absorber has given them satisfaction and has worked regularly.

[[margin - Acher cells]]

[[end page]]



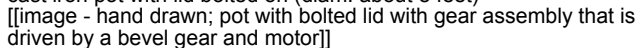
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They have several digesters for CCL4 which would be utilized McNitt says end digester costs about 450? \$ or 150\$ and about \$75 to erect.

8 or 9 such pots would allow to run methodically without stoppage each of them turning about 600 lbs. refined CCL4 per day or 4800 lbs in total. ~~Cruder~~ Digesters consist essentially of a cast iron pot with lid bolted on (diam. about 8 feet)

 pot with bolted lid with gear assembly that is driven by a bevel gear and motor]]

with stirrer, and is heated by gas generated by liquid fuel. I noticed that some of them had iron baskets in

[[end page]]

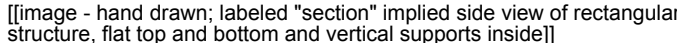
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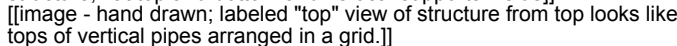
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which they placed the catalytic agent.

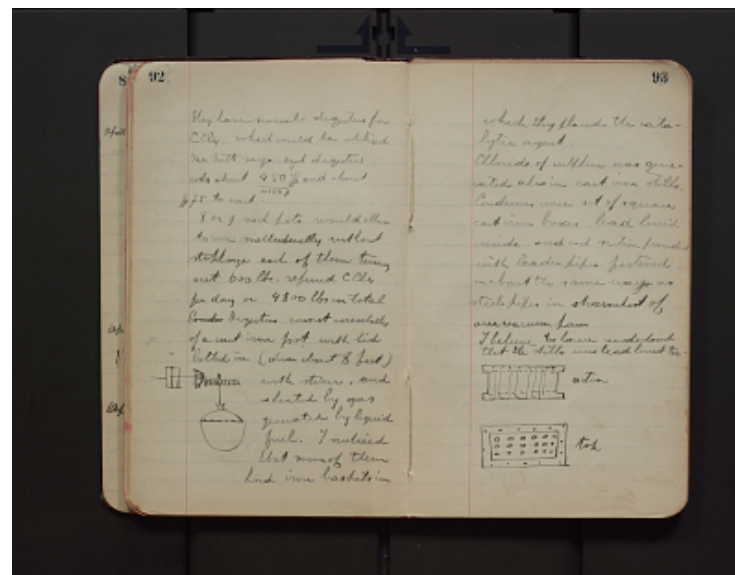
Chloride of sulfur was generated also in cast iron stills. Condensers were set of square cast iron bases lead lined inside and each section provided with leaden pipes fastened in about the same ways as steel pipes in steam chest of our vacuum pans.

I believe to have understood that the stills were lead lined too.

 section implied side view of rectangular structure, flat top and bottom and vertical supports inside]]

 top view of structure from top looks like tops of vertical pipes arranged in a grid.]]

[[end page]]



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They also have about 500(?) lb of salt. traces of Sulfates lime and slight traces of [[magnesium?]] Also two blowers in cast iron of which one is in excellent condition excepting babbit molten unit. One water filter consisting of two steel tanks 6' X 6' filtering water at the rate of a 4" pipe 35 lb pressure.

Also a lime conveyor

Charge Dev. & Funding Co. with following expenses

5 days - busy

Hotel expenses \$20.00

Overalls etc \$1.00

Train & sleeper \$23.50

Meals \$3.00

-----  
\$57.50

[[margin - x Chge 57.50]]

[[end page]]

[[start page]]

95

Got only an upper berth. Miserably hot at Buffalo. Just 30 minutes for supper- ~~Lower~~ resolved in future to engage berths longer in advance.

As soon as train was in motion temperature became quite agreeable June 11 Arrived hime at about 7AM A very humid sultry day with alternating rain showers.

[[margin - Thurlow and Bakelite]]

Saw Thurlow and told him about my work and discovery of Bakelite

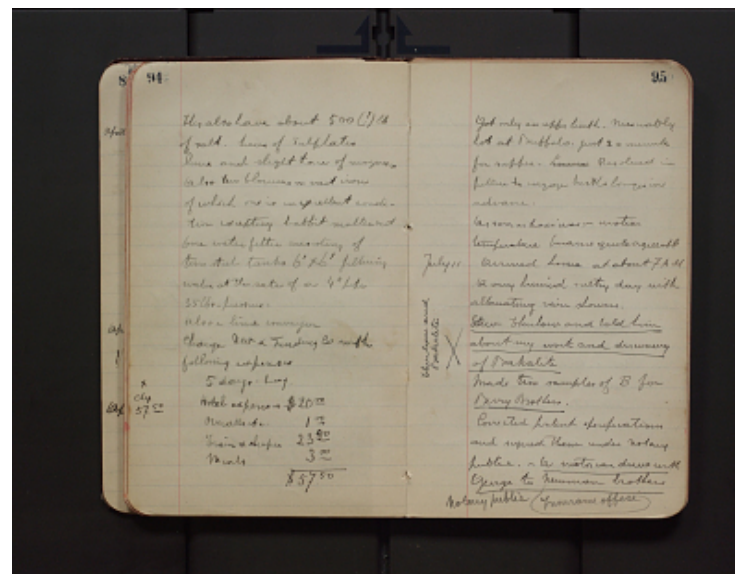
Made two samples of B for Berry Brothers

Corrected patent specifications and signed them under notary public. -

A motor car drive with George to Newman brothers

notary public Insurance office

[[end page]]



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thence to Post office where I got sealed letter registered and sent off under special delivery. Unless I am very much mistaken this invention will prove important in the future. I intend to concentrate all my efforts on this subject during this summer. (See my laboratory notes).

[[margin - Bakelite!]]

July 12 Worked in lab all afternoon making samples of B. solution for Berry Brothers so as to correct Novalak

Afternoon spent in New York at development and Funding Co. in consultation remaining there until after 6:30 P.M. with Marsh Charge 1/2 day

[[margin - 1/2 X]]

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July 13 A very active day which I spent in my laboratory on further research work on Bakelite.

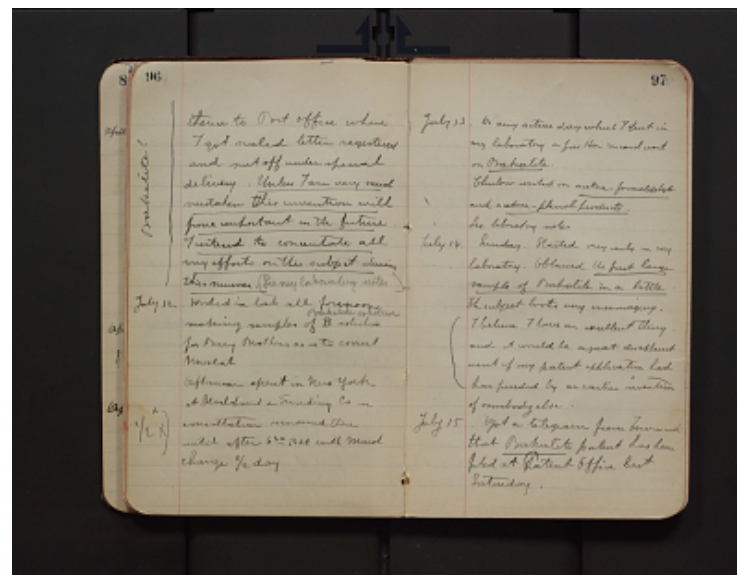
Thurlow worked on acetone formaldehyde and acetone - phenol products.

See laboratory notes

July 14 Sunday, Started very early in my laboratory. Obtained the first large sample of Bakelite in a bottle The subject looks very encouraging. I believe I have an excellent thing, and it would be a great disappointment if my patent application had been preceded by an earlier invention of somebody else.

July 15 Got a telegram from Townsend that Bakelite patent has been filed at Patent Office last Saturday.

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[[margin - Hooker 1/2]]

Brought [[^ remainder of M. MS]] M.S. of "Family Motor Trip" to Horseless Age. This only leaves the last pages of Italy in my possession. Gave then to Mr. Heldt (Editor) Spent a busy afternoon (charge 1/2 day) at Development and Funding Co. Consulting with Hooker and Marsh as to most desirable changes for new plant Carried my point to make 4000 Ampere cells for new plant and utilize old plant as it is leaving generators the same. This will save considerable money and make matters easier. Wrote a reply to Correspondence T. R. Crocher in Electrochemical Industry. Wrote several letters for D. & F. Co.

[[margin - 2x]]

[[margin -Hooker]]

[[end page]]

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99

[[margin - CCL4]]

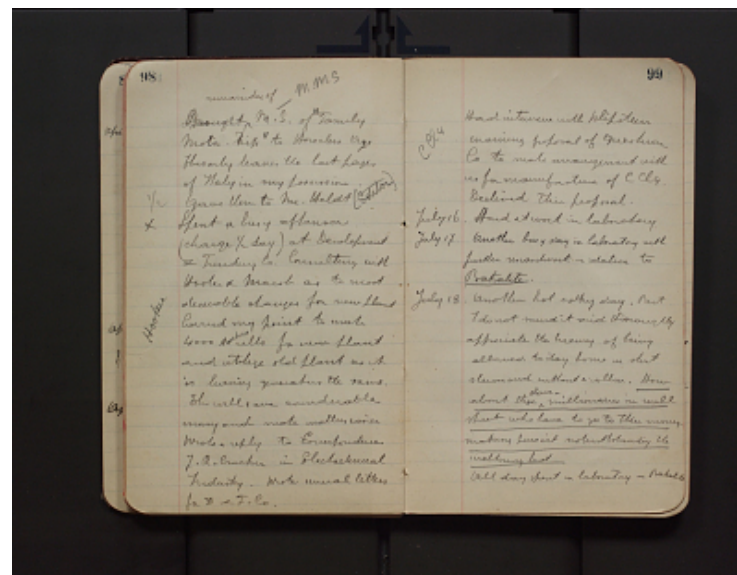
Had interview with Klipstien concerning proposal of [[Guesheim?]] Co. to make arrangement with us for manufacture of CCL4. Delivered their proposal.

July 16 Hard at work in laboratory

July 17 Another busy day in laboratory further research work in relation to Bakelite.

July 18 Another hot sultry day. But I do not mind it and thoroughly appreciate the luxury of being allowed to stay home in shirt sleeves and without a collar. How about these Slave millionaires in wall street who have to go to their money making pursuit notwithstanding the sweltering heat All day spent in laboratory - Bakelite

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In the evening cooler

[[margin - Adirondacks]]

July 19 Great excitement for me this morning when opening 14 tubes with different Bakalite compounds. Some of them. Lithopone - (Meerschaaum) Cotton - Ermeric - Lampblack. Graphite (new pencil composition) Glass wool <sup>[[^ wool]]</sup> (insulators) seem very promising (See notes) <sup>[[additional later note - Laboratory book]]</sup>

Have sent George to Am. Express Co for draft \$100 for mother.

At 7. P.M I drove Celine and the children to New York Central Station for the Adirondack Express. They are going to the Adirondack League Club at Little Moose. It was a very hot day in New York not the slightest breeze and the roads seemed hazy and

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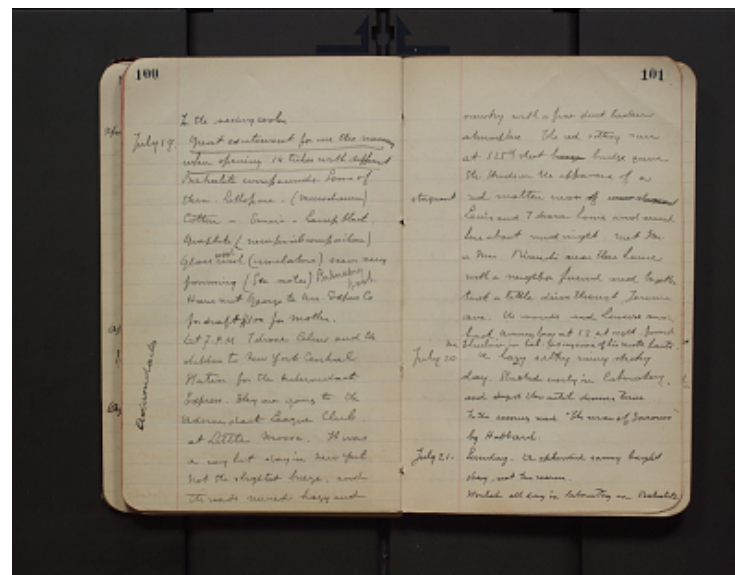
smoky with a fine dust laden atmosphere. The red setting sun at 125th street ~~breeze~~ bridge gave the Hudson the appearance of a <sup>[[in margin - stagnant]]</sup> red molten mass.

~~of ? stagnant~~ Lewis and I drove home and arrived here about midnight. Met Mr. & Mrs. Bianchi near their house with a neighbor friend and together took a little drive through Jerome Ave. the woods and Lowerre and back arriving home at 12. at night. found Mr Thurlow in lab. fixing some of his motor parts

July 20 A hazy sultry rainy sticky day. Started early in laboratory and stayed there until dinner time. In the evening read "The man of Sorrows" by Hubbard.

July 12 Sunday, A splendid sunny bright day, not too warm. Worked all day in laboratory on Bakalite

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compounds;

In the evening ~~[[striketrough]]~~ went to ~~[[/striketrough]]~~ took trolley to New York. Central Park Concert then Sight Seeing auto trip to Chinatown

July 22 Early at work in Laboratory. Sent a letter to be registered by postman this afternoon to Mother. Afternoon wrote letters until 10:30 P.M.

How delightfully restful and quiet everything is. Notwithstanding I am all alone! I find this extremely enjoyable. How simple our life could be if we were not always trying to make it burdensome by unnecessary complications and artificialities and snobberies.

My meals only take a few

[[margin - Reflexions and 2 exclamation marks]]

[[end page]]

[[start page]]

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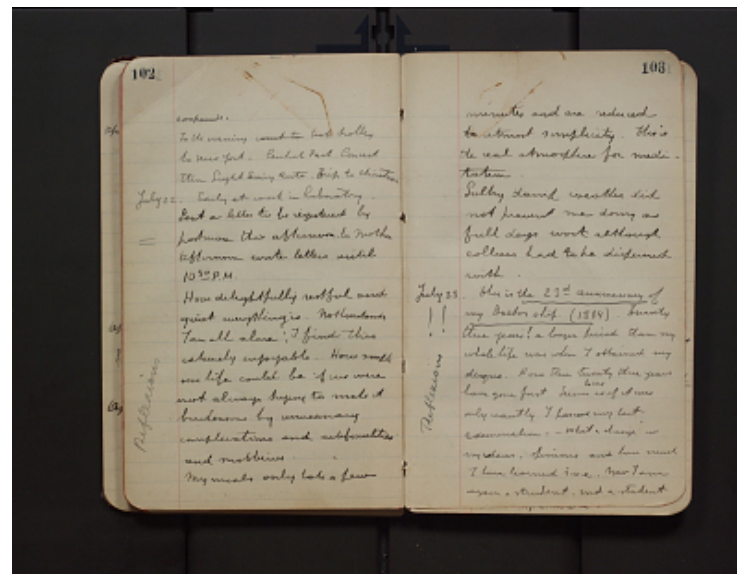
minutes and are reduced to utmost simplicity. This is the real atmosphere for meditation.

Sultry damp weather did not prevent me doing a full days work although collar had to be dispensed with.

July 23 This is the 23rd anniversary of my Doctorship (1884). Twenty three years! a longer period than my whole life was when I obtained my degree. How these twenty three years have gone fast. Seems to me as if it was only recently I passed my last examination. - What a change in my ideas, opinions and how much I have learned since. Now I am again a student, and a student

[[margin - Reflexions!!]]

[[end page]]



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I will remain until death calls me again to rest.

[[margin - Bakelite]]

[[underline]] Great excitement in opening all my tubes with Bakelite compounds. [[underline]] Graphite [[emeric]] asbestos - [[?]] and Lithopone, Cork and lampblack seem to be the most promising compounds for the moment.

A certain Dr. O. M. May came here with a letter of introduction from Lewkointsih and desires to find a position as Chemist. Have given him some addresses. Worked all day in laboratory. In the quiet of a pleasant evening spent an hour musing in the hammock.

Read Crosby's: "Garrison the non Resistant"

[[end page]]

[[start page]]

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and went to bed at nine. A delightful sleep. beautiful night.

July 24 Magnificent weather. I have to go to N.Y. to the D. & F Co. charge one half day.

[[margin - 1/2x]]

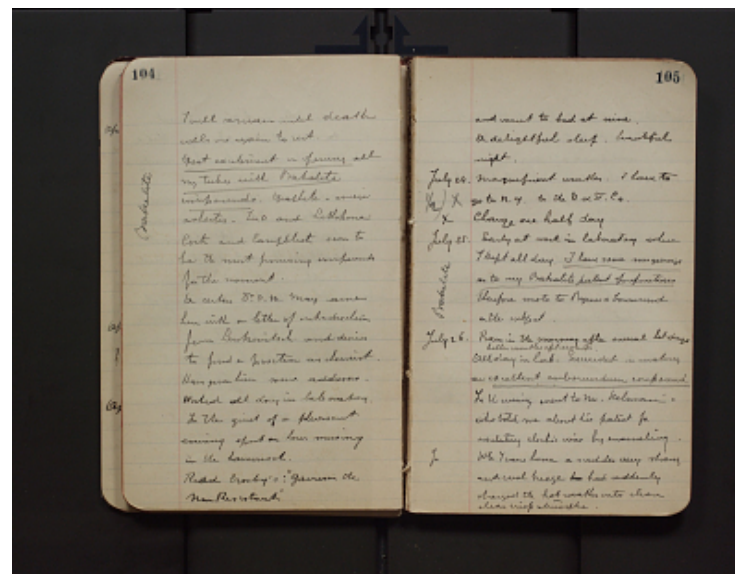
July 25 Early at work in laboratory where I kept all day. [[underline]] I have some misgivings as to my Bakelite patent specifications

[[underline]] therefore wrote to Byrnes & Townsend on the subject.

[[margin - Bakelite]]

July 26 Rain in the morning after several hot days. Better weather afterwards. All day in Lab. Succeeded in making an [[underline]] excellent carborundum compound [[underline]] In the evening went to Mr. Kelman's who told me about his patent for insulating electric wire by enameling. When I came home a sudden very strong and cool breeze had suddenly changed the hot weather into clean clear crisp atmosphere.

[[end page]]



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[[start page]]

July 27 Magnificent cool and pleasant weather. Started early in Lab. and worked in it all day.

[[margin - Bakelite Bakelite Bakelite]]

July 28 Worked all morning in lab. but was interrupted by visit of Kelman who came to show me his enameled wire. He stayed for lunch and in the late afternoon we drove out with the motor car as far as Irvington.

July 29 A hazy sultry day, but not too hot. Worked in lab. in the morning, in the afternoon drove to New York to see if I could get some cheap tires and a new transmission. Came home in the afternoon. Took Will Andrus to New York. (son of John A. Andrus) Rain then clearing  
July 30 Fine clear bright morning. Started early in laboratory. Received a letter from Sakadichi(sic) Hartmann telling me he was

[[end page]]

[[start page]]

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stranted (sic) at East Aurora and wanted some money to go back to New York. Asked me whether I would buy 5 or 10 dollars worth of books. I sent him a check for ten. He is a very interesting fellow.

[[margin - Bakelite Bakelite]]

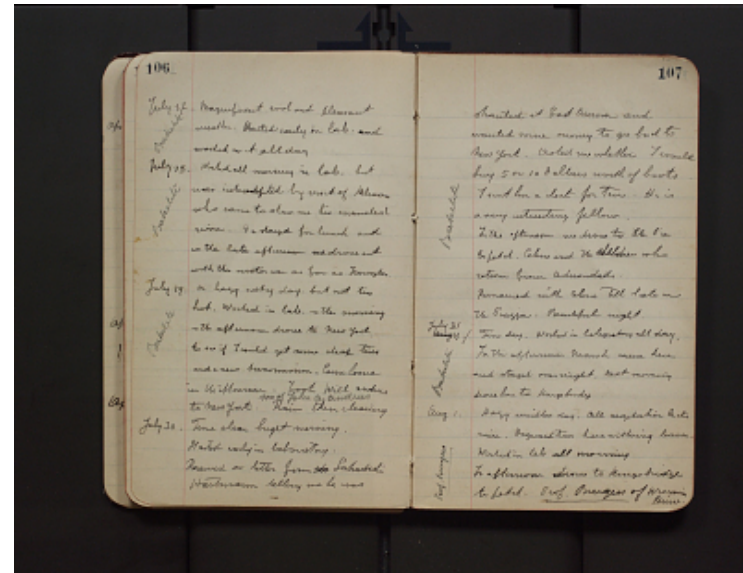
In the afternoon we drove to the pier to fetch Celine and the children who return from Adirondacks. Remained with Celine till late on the Piazza. Beautiful night.

July 31 Fine day. worked in laboratory all day. In the afternoon March came here and stayed over night. Next morning drove him to Kingsbridge.

Aug 1 Hazy windless day. All vegetation lacks rain. Dogwood trees have withering leaves. Worked in the lab all morning. In afternoon drove to Kingsbridge to fetch Prof. Burgess of Wisconsin Univ.

[[margin - Prof Burgess]]

[[end page]]



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[[margin-1/2x Bakelite]]

Spent afternoon giving him information on Townsend cell (charge 1/2 day). Showed him my samples of Bakelite. Drove him to 59th street in the evening.

August 2. Spent morning in laboratory and around motor car tightening up transmission. Afternoon answer letters.

August 3,4,5 & 6. Same routine and beautiful weather.

August 6. Spent half day writing for D & F Co. and sending out reprints Townsend Cell and "Danger Overspecialization"

[[margin x1/2]]

August 7. Laboratory and writing answer to letter of Remouchamps.

Afternoon went to New York. Interview with Mr. W.H. Nichols and Hooker concerning Townsend cell (Charge one half day)

[[margin - x1/2]]

[[end page]]

[[start page]]

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In the evening Celine joined ~~us~~ Hooker, Mrs. H. and myself at Manhattan Hotel where H. invited us to supper. Afterwards drove to Roof garden. Rather stupid performance and very hot under covered roof. Arrived home about midnight with our motor car.

Aug 8. Stayed home and worked in lab

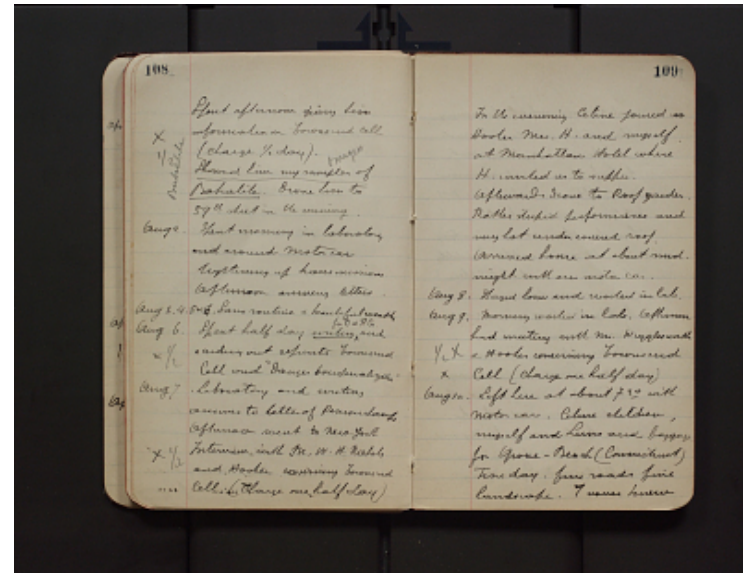
Aug 9. Morning worked in lab. Afternoon had meeting with Mr.

Wigglesworth & Hooker concerning Townsend Cell (charge one half day)

[[Margin - 1/2x]]

Aug. 10. Left here at about 7:30 with motor car. Celine children, myself and Lewis and baggage for Grove- Beach (Connecticut) Fine day. fine roads fine landscape. I never knew

[[end page]]



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until now what charming flowers there are along Connecticut shores. Everything went to perfection. and we arrived in the afternoon about 4.PM at Grove Beach where the Baskervilles

[[margin - Baskerville]]

were awaiting us. A very agreeable hospitality Children seem to like their new surroundings.

Pretty little grove near fine swimming beach.

Aug 11. In the afternoon we drove to New London. Many automobiles.

Some excellent road and some very bad ones but was a pretty and interesting landscape. Stretch beyond Lyme Ferry

[[end page]]

[[start page]]

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through woods is a rather difficult road. rutty and uneven. Would make difficult job in rainy weather. Came home at about 7 PM in excellent condition.

[[margin - Baskerville]]

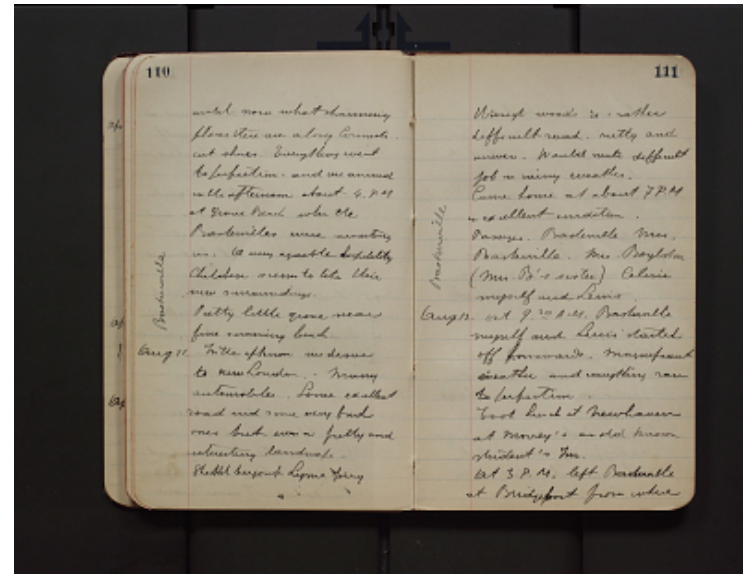
Passengers Baskerville Mrs. Baskerville. Mrs Boylston (Mrs. B's sister) Celine myself and Lewis

Aug 12 at 9:30 A.M. Baskerville myself and Lewis started off homeward.

Magnificent weather and everything ran to perfection. Took lunch at Newhaven at Morey's an old known student's Inn. At 3 P.M. left

Baskerville at Bridgeport from where

[[end page]]



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he took train back. We arrived in Yonkers late in the afternoon without he slightest mishap.

[[margin - Bakelite Bakelite Bakelite]]

Aug 13. Worked in lab during the morning and mailed some reprints.

Aug 14. Worked in lab all day. ~~in morning. Afternoon~~ went to New York Interview with Wigglesworth who is going to ~~to~~

Aug 15. Worked in lab in morning. Afternoon went to New York.

Interview with Wigglesworth who goes to Niagara. Charge 1/3 day

[[margin 1/3 X] ~~Spent~~] Met a Mr. van

Duzen at office of Howe & Steele lawyers who asked me to

[[end page]]

[[start page]]

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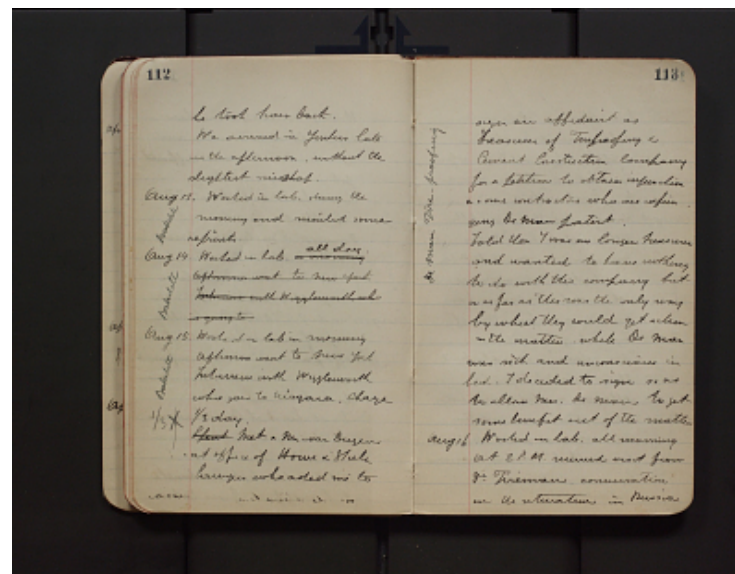
sign an affidavit as Treasurer of Fireproofing & Cement Construction Company for a petition to obtain injunction on some contractors who are infringing DeMan patent

[[margin - DeMan Fire - proofing]]

Told them I was no longer Treasurer and wanted to have nothing to do with the company but in as far as this was the only way by which they could get action in the matter while De Man was sick and unconscious in bed. I decided to sign so as to allow Mr. De Man to get some benefit out of the matter.

Aug 16. Worked in lab. all morning. At 2 P.M. received visit from Dr. Fireman conversation on the situation in Russia

[[end page]]



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In the afternoon Celine and children arrived home in motorcar from 125th St, where Louis fetched them, return from Baskerville's  
Aug 17 ~~Worked in lab~~ Wrote some letters. Felt somewhat "heavy" today. Morning a certain Mr. Fritz Hiller assistant of Erdmann came with card of introduction from the latter and from ~~Grieff?~~. Typical young German "Herr Professor". Stayed for lunch then left about 2 P.M.

[[margin - Prof Erdmann sends another priggish German professor to me]]

Afternoon worked on auto putting oiling system in good condition. Hot and greasy work. Afterwards decided that "knocking" was caused by worn motor bearings.

Hot sultry day.

[[end page]]

[[start page]]

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Aug 18. A fine day. Concluded to take a restful day. Spent morning and largest half of afternoon in reading. Then wrote some letters.

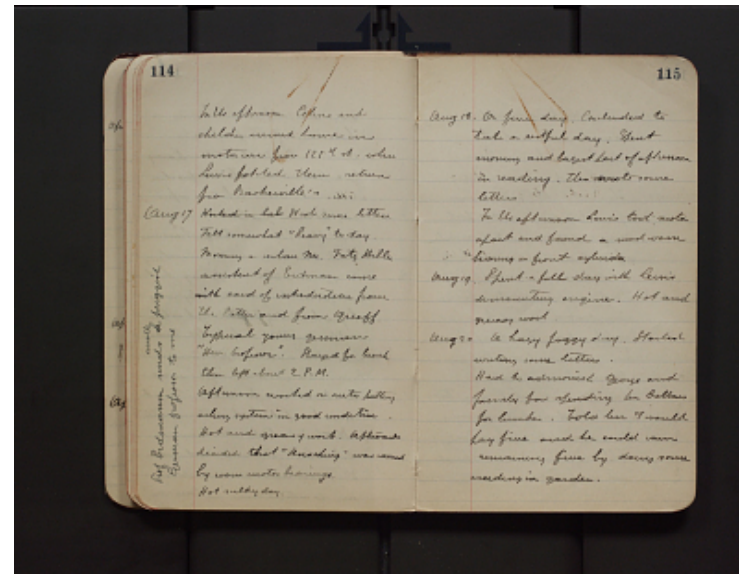
In the afternoon Lewis took motor apart and found a much worn bearing on front cylinder

Aug 19. Spent a full day with Lewis demounting engine. Hot and greasy work.

Aug 20. A hazy foggy day. Started writing some letters.

Had to admonish George and family for spending ten dollars for lumber. Told him I would pay five and he could earn remaining five by doing some weeding in garden.

[[end page]]



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I am rather handicapped in my work on account of index finger having been burnt and is now sore.

Aug 21. This is the 18th anniversary of our landing in New York Aug 21./1889. per S.S. Westerland of the Red Star Line which left Antwerp Aug 10/1889.

Spent morning writing letters amongst which several for Development & Funding Co.

[[margin - 1/3 x ]]

In afternoon worked in lab.

Aug 22. Received by mail copy of Story's patent which seems to cut short some of the claims of my Bakelite application. Still my process is very different and renders it much more

[[margin - Story patent]]

[[end page]]

[[start page]]

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adaptable for practical purposes because I can accomplish in one or two hours what takes Story weeks and months.

Work at motor car with Lewis during intervals I was not busy in lab.

Aug 23. Hard at work in lab all day at intervals helped Lewis remount our engine. Thurlow left to night on a vacation [[underlined]].

[[margin - Bakelite]]

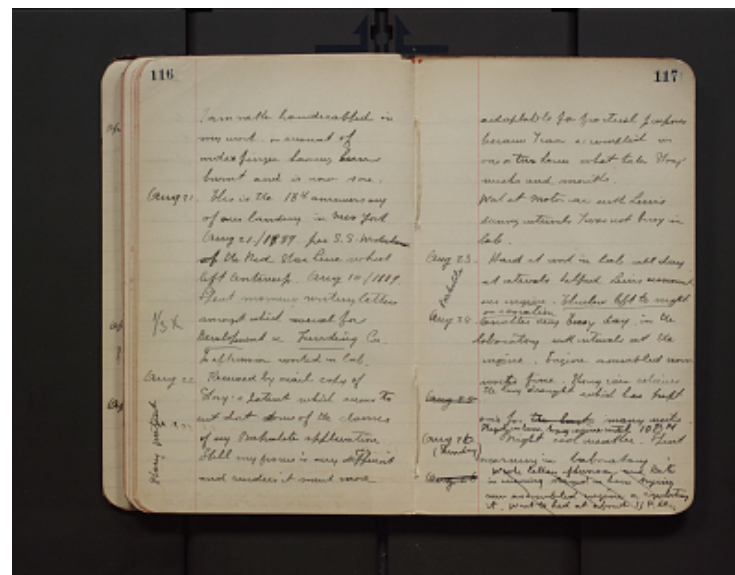
Aug 24. Another very busy day in the laboratory with intervals at the engine. Engine assembled now works fine. Strong rain relieves the long drought which has kept on for ~~the last~~ many weeks. Stayed in barn trying engine until 10 P.M.

Aug 26 (Sunday) Bright cool weather. Spent morning in laboratory.

~~Wrote letters afternoon and late in evening stayed in barn trying new assembled engine & regulating it. Went to bed at about 11 P.M.~~

[[margin - ~~Aug 26~~]]

[[end page]]



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Aug 25. Sunday Spent the morning with light work and reading.

Afternoon visit of Clineau

Stayed for supper and left about 9. P.M.

Aug 26. Monday Worked all morning in lab.

Afternoon visit of Sadakichi Hartman who spent afternoon here and took supper. Borrowed ten dollars from me and went home about 10 P.M.

[[strickethrough]]Aug 26 Worked all day in lab & on car

that Mr. De Man had died after long suffering and hopeless illness.

Aug 27. [[strickethrough]]Aug 26[[strickethrough]][[strickethrough]]

Aug 27[[strickethrough]] Tuesday Worked all day in lab & on car

[[strickethrough]]worked all day in lab[[strickethrough]]

Evening went to fetch Max Boch at Kingsbridge

with Motor Car.

Had a long talk with him. After supper showed him my sample of

Bakelite and let him read my patient application

[undelined]

[margin - Bakelite]

[[end page]]

[[start page]]

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Aug 28, Wednesday Drove Max Toch back to 78th street and car worked fine.

Advanced spark in afternoon but engine started knocking. Lewis reports that all bearings are tight.

Work in lab at intervals.

Aug 29, Thursday Went away early to funeral of Mr. De Man Peaceful features. Courageous wife. ~~made some~~

Celine came to Mr. De Man with auto. Bolt of bearing snapped and

loose piston rod smashed. Took ~~cylinder~~

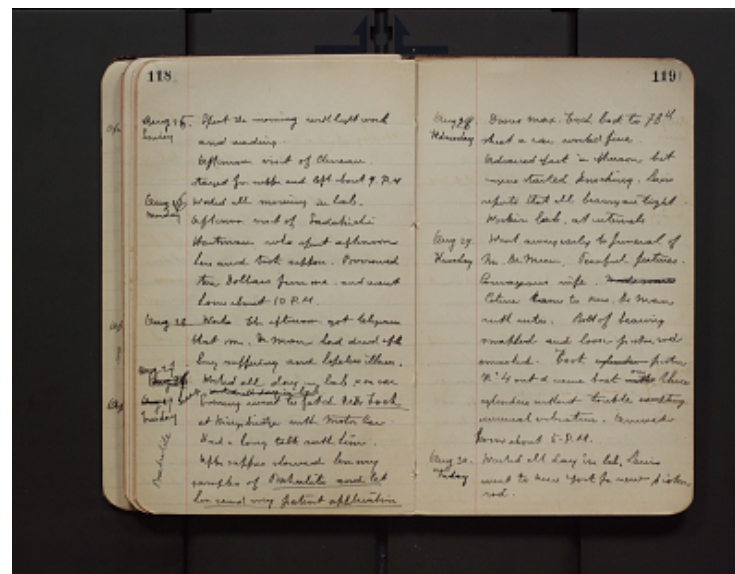
~~piston No. 4 out & came back~~

~~with~~ on three cylinders without trouble

excepting unusual vibration. Arrived home about 5-P.M.

Aug 30, Friday Worked all day in lab, Lewis went to New York for new piston rod.

[[end page]]



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Aug 31. Another very very busy day in my lab. Found how alkaline reaction activates the formation of A liquid by plain boiling and how A made by boiling may be changed into Novolak by treatment with HCl. Went tired to bed.

[[margin - Bakelite]]

Sept. 1 (Sunday) A magnificent & bright & sunny day

Worked hard in lab. Visit of Mr. Erdemeyer about noon. He left in his motor car about dinner time. brought me some plants.

Sept 2 (Labor day) Heavy rain in morning.

Brady & Lewis mended broken piston rod on motor. all day I worked hard in my laboratory and found time to write a letter to my mother & sister while watching numerous operations.

[[margin - Bakelite]]

[[end page]]

[[start page]]

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Sept 3. A "foggy" damp day. Was pleased this morning to find excellent samples of Bakelite transparent & other obtained by addition of  $\text{NH}_3$  and alkalis. This opens a new field.

[[margin - Bakelite  $\text{NH}_3$  & bases]]

Have sent by registered sealed letter check of \$100 to mother by Martha.

Weather cleared up but still sultry. Busy in laboratory. Finished examining report for new cell room for development & Funding Co.

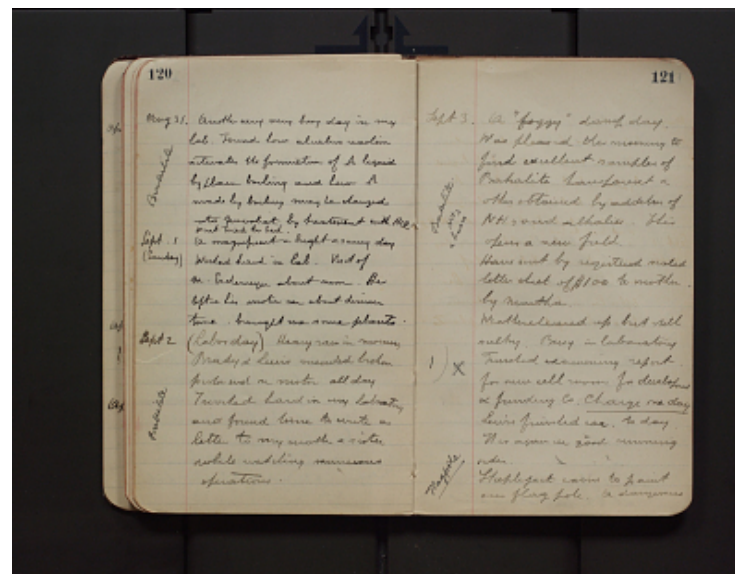
Change one day Lewis finished car today. It is again in good running order.

Steeplejack came to paint our flag pole. A dangerous

[[margin - 1/x]]

[[margin - Flagpole]]

[[end page]]



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job for five dollars! made photos. also some photographs of George and his battleships!

Sept 4. Did not sleep well last night. Got up at 5:15 and went to lab to do some work. Went to New York D.F. Co. wrote several letter & consultation with Hooker & with Sage.

Charge 2/3 day.

[[margin - 2/3 x]]

[[margin - Bakelite]]

Torrential rains and foggy sultry day. At bank found that check for \$400

sent on July 14 had not been received Am inquiring

Sold bonds Wis Cent. 4 at 82 per Robinson & Fish

[[end page]]

[[start page]]

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Left one more bond to be sold at 83 and took remaining five Bonds to my deposit box. Interview with Spiegelberg who wants my opinion on his brother's factory and report how it is managed.

[[margin - Bonds]]

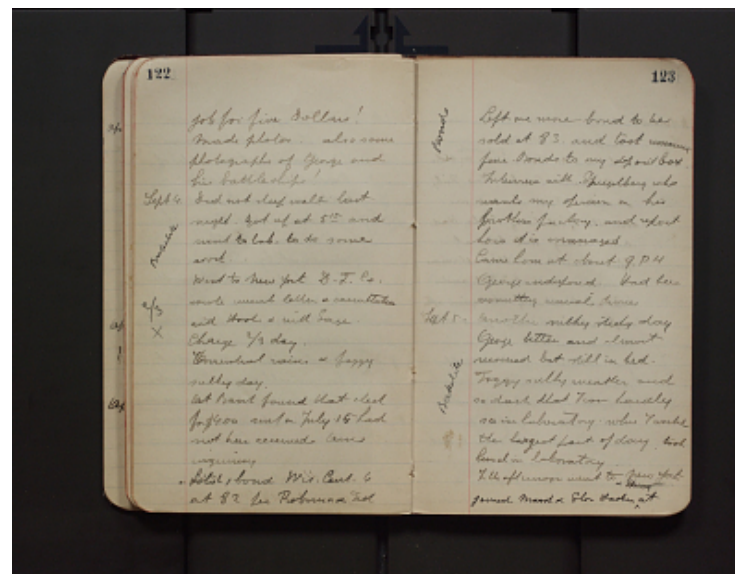
Came home at about 9 P.M. George indisposed Had been vomiting several times.

Sept 5. Another sultry sticky day. George better and almost recovered by still in bed. Foggy sultry weather and so dark that I can hardly see in laboratory. while I worked the largest part of the day. Took lunch in laboratory.

[[margin - Bakelite]]

In the afternoon went to New York joined Marsh & Elon Hooker & Sperry at

[[end page]]



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N.Y central to catch 6 P.M. train for Niagara

Sept 6. Niagara. Clifton House.

Met 10 A.M. Townsend, E. H. Hooter, W Hooker, Alf Hooter, Paulies, Stone, Riely at works.

[[margin - 1 1/2X]]

I was chairman on committee of selection of Cells. Had direct meeting took lunch at office. Went to see cells in cell rooms. Resumed discussion at 3 P.M. and kept at it all day then again after supper at night until past 11 P.M.

I was made chairman of committee on cells and cell plant installation.

[[margin - Hooker]]

Perfection of experimental cells. First question size of units. Marsh advocates 6000 A units everybody else against. Townsend, Albert Hooter & Willard Hooker for 2000 A. units

[[end page]]

[[start page]]

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Sperry, Stone, Paulies & myself. 4000 A. units. A long discussion until 6 P.M. eliminates hydrostatic on high pressure type

[[strikethrough]]and[[strikethrough]] so as to consider only low pressure type

Supper at Clifton Hotel & new session lasting until about 11 P.M. I felt very tired.

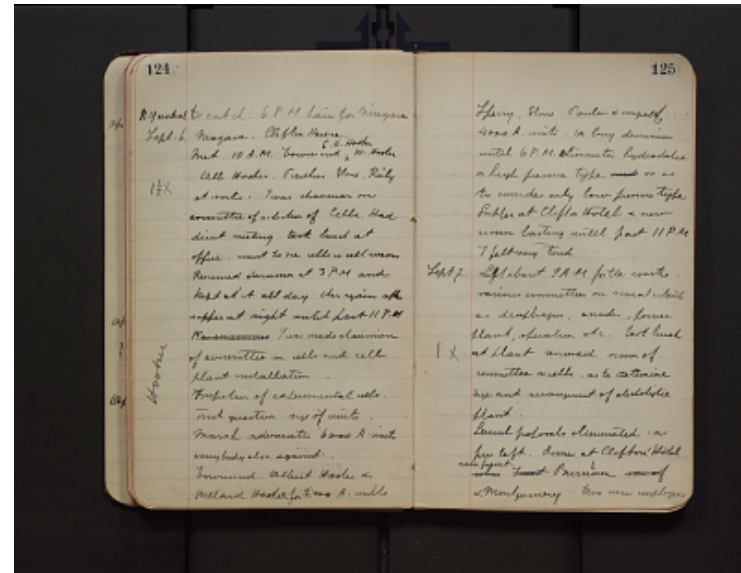
Sept 7. Left margin)) Left about 9 A.M. for the works. various committees on several subjects as diaphragm, anodes, power plant, operation, etc.

[[margin - 1 x ]]

Took lunch at plant resumed session of committee on cells, as to determine size and arrangement of electrolytic plant.

Several proposals eliminated . a few left. dinner at Clifton Hotel were frequent ~~where I met~~ Burn<sup>(h)</sup>am ~~son of~~ & Montgomery two new employees

[[end page]]



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[[margin: ^Burnham]]

whom I had met at the work very busy amongst other workmen. in overalls, one in repair shop and other ~~in~~ diaphragm machine

B. is son of President of Baldwin Locomotive works ~~is~~ Another ~~M.~~ M. is son of a college President. Both make an excellent impression. Worn hands, cut & bruised show that they are not afraid of work.

Paulies & Riley were there also. Deliberated until 11 P.M. but did ~~not need~~ postponed final conclusion until next day. Went to bed very tired but took a few minutes to see the newly begun illumination

[[margin - ~~Sept 8~~]]

[[end page]]

[[start page]]

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[[margin - Tawdry Niagara Falls Illumination]]

of the falls another tawdry unaesthetic attempt of showy multicolored lights on ~~Fa~~ American Falls from Canadian Side. gives a cheap Ice cream effect. Only white light seems effective < beautiful specially when all the light power was concentrated on one single strip of falling water.

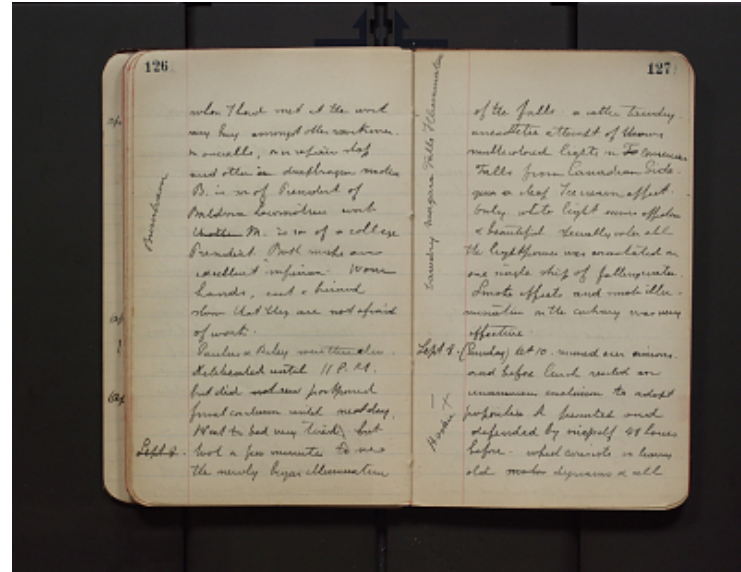
Smoke effects and smoke illumination on the contrary was very effective.

Sept 8. (Sunday) At 10. resumed our sessions and before lunch reached an unanimous conclusion to adopt proposition A. presented and defended by myself 48 hours before. which consists in leaving old ~~motor~~ dynamo & cell

[[margin - 1X]]

[[margin - Hooker]]

[[end page]]



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plant as it is. remodel the existing 2000 A. cells. (if possible to 2500) and add 114. new cells 4000 A. so that cell plant will have following dynamo equipment

old [[image - bracket showing "old" refers to next two lines,

2. ~~250~~ ~~125~~ volts..2000 Amp.

1 250 V. 2000 "

new 3 270 V 4000 "

Cell type C. which is the improved type as originally proposed by Willard Hooker about two years ago. and which has been successively improved by suggestions from me and others.

[[margin - Hooker]]

My new diaphragm (blown on fiber) modified by W. Hooker by addition of a sheet of paper seems to work very nicely and it looks as if this cheapened dia

[[margin - Diaphragms]]

[[end page]]

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phragm was going to supplant the more expensive cloth diaphragm.

All ~~new~~ cells are now being renewed with this. Last diaphragms are 2 lb. No. 2 fiber each and one sheet of paper calculated cost being 75 cents as to \$1.50 for the cloth diaphragm.

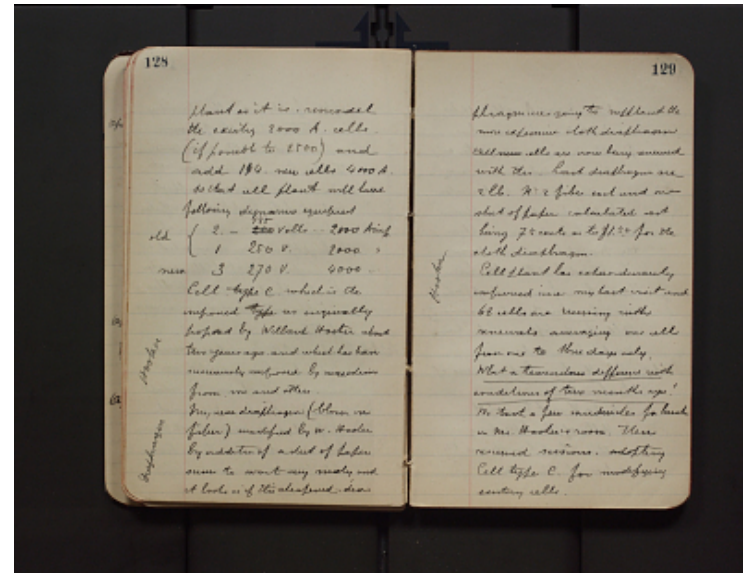
[[margin - Hooker]]

Cell plant has extraordinarily improved since my last visit and 68 cells are running with renewals averaging one cell from one to three days only.

What a tremendous difference with conditions of two months ago!

We took a few sandwiches for lunch in Mr. Hooker's room. Then resumed sessions. adopting Cell type C for modifying existing cells.

[[end page]]



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and the 4000 A cell will be constructed on these general principles adopting concrete in cast iron ~~armed~~ ~~frame~~, as suggested by me last winter which has proved very effective in the stone design as well as the Marsh hydrostatic design.

[[margin - Hooker]]

Townsend had to catch train I gave him fragment of Bakelite stick to show to patent examiner all. Hooker left on later train. Went to bed earlier.

[[Left margin: Bakelite]]

[[margin Sept 9.]] Elon Hooker in bed with one of his headaches. Marsh & I went to work.

[[margin - 1X]]

M. Hiltner of Charlottenburg was there. Took him through the works in a few minutes

[[end page]]

[[start page]]

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Had session with Stone & W. Hooter relative oil and diaphragms. Paulus rigs up steam chest for Bakelite experiment. I have only a few hours left for taking my train and I devote this to several side matters in plant with Riley & others.

[[margin - Just checked & hotel bill paid by Hooker]]

Putting Bakelite in open sample in steam chest 65 lbs. for 1 1/2 hours, gives a very spongy mass so this method proves impractical will require closed molds.

[[margin - Charge

9

2

2

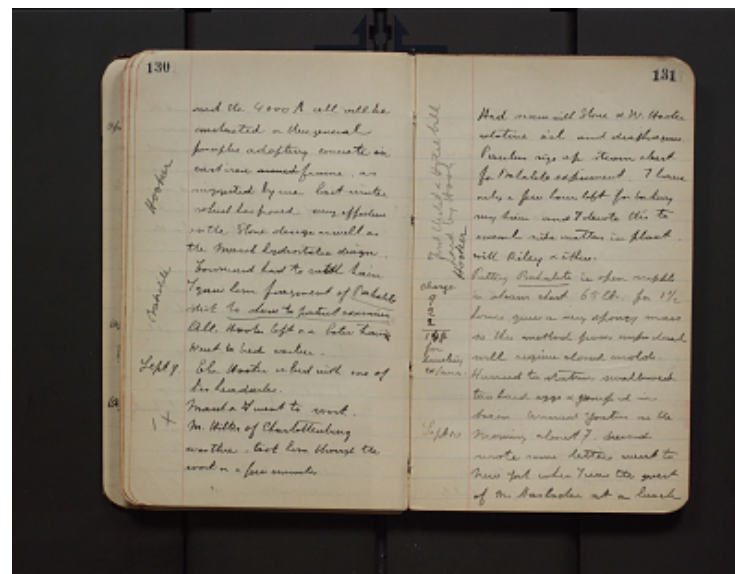
--

14 [written over 12] \$  
for traveling expenses.]

Hurried to station swallowed two hard eggs & jumped in train. Arrived Yonkers in the

[[margin - Sept 10.]] morning about 7. dressed wrote some letters went to New York where I was the guest of Mr. Haslachner at a lunch

[[end page]]



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offered by him at the Drug Club <sup>^</sup> 100 William St to Mr. Beilby of Scotland. A very successful informal affair. Were present amongst other. Nichols, Chandler, Humphrey, McMirtrie, Acheson, Schweitzer, Parker, Hemingway, Foster myself and some others. I was called upon to speak . - and what I said seemed to go pretty well. Then spent afternoon at Development & Funding Co. dictating & consulting with. Sperry and various work Charge 1/2 day. I felt very very tired

[[margin - 1/2 x Hooker]]

Sept. 11. I feet tired. Foggy sultry unpleasant day. Started early in laboratory.

Yesterday I told to Acheson Acheson of my mixture of Bakelite

[[end page]]

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and graphite. Seems much interested and wants to meet me next time in Niagara Falls.

I kept working all day in lab and explained to Thurlow all what I discovered during the days he was away. ^on his vacation.

[[Left margin - Bakelite]]

A violent thunderstorm and heavy rain in afternoon.

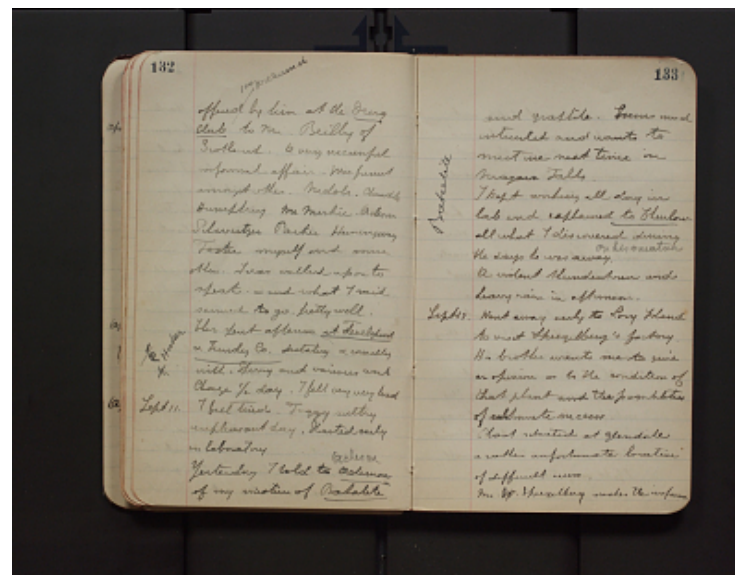
Sept 12. Went away early to Long Island to visit Spiegelberg's factory.

His brother wants me to give an opinion as to the condition of that plant and the possibilities of ultimate success.

Plant situated at Glendale a rather unfortunate location of difficult access.

Mr. W. Spiegelberg makes the impression

[[end page]]



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[[margin - Spiegelberg]]

of a gentleman of polite and agreeable manners. but seems unprepared technically and commercially to make a good fight in this business. Plant is neatly equipped but technical management rather unprepared. Considerable waste. no system for checking different departments. Selling prices extraordinarily low and unwarranted. The whole thing looks rather unfavorable. With proper management might succeed in making this enterprise pay in a modest way.

In the evening went to Belmont Hotel remained there over night. I felt very tired

[[end page]]

[[start page]]

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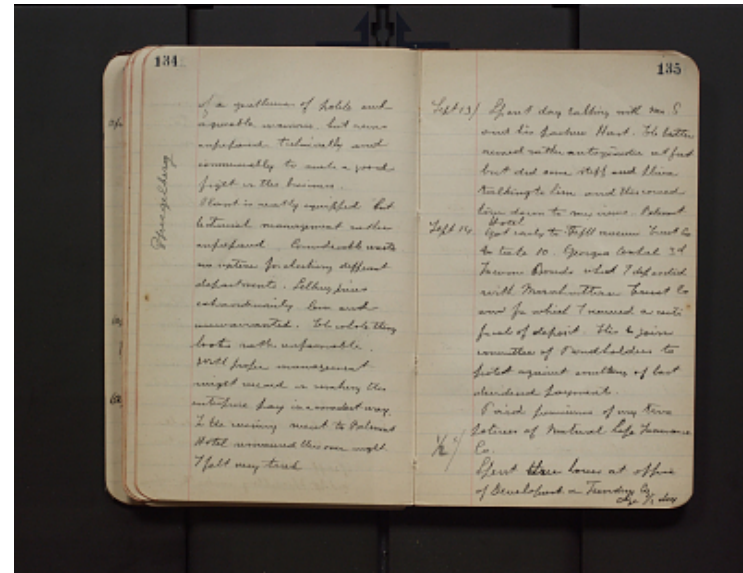
Sept 13/ Spent day talking with Mr. S and his partner Hart. The latter seemed rather antagonistic at first but did some stiff and plain talking to him and this cowed him down to my views. Belmont Hotel.

Sept 14. Got early to Fifth Avenue Trust Co to take 10. Georgia Central 3d. Income Bonds which I deposited with Manhattan Trust Co and for which I received a certificate of deposit. This to join committee of Bondholders to protest against omitting of last dividend payment.

Paid premiums of my two policies of Mutual Life Insurance Co. Spent three hours at office of Development & Funding Co. chge 1/2 day

[[margin - 1/2 x]]

[[end page]]



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took lunch at 4 P.M. then hurried to Belmont & finished dictating report Spiegelberg at 6:30 P.M. Arrived home after supper. Very tired.  
Sunday Sept. 15. Bright sunny day. Worked all day in laboratory on Bakelite

Sept 16. Answered letter to Hooper about Novolak. Expressed two new samples of "Corrector."

[[margin - Hooker]]

Expressed chlorinated petroleum to Paulies to use in aluminum leaders of experimental anode. Worked all day in laboratory

Sept 17. A hot sunny but sultry day All day in lab. Evening went with George to the Primary election.

Sept 18. Received letter from Rachel dated Sept 8. complaining my check

[[end page]]

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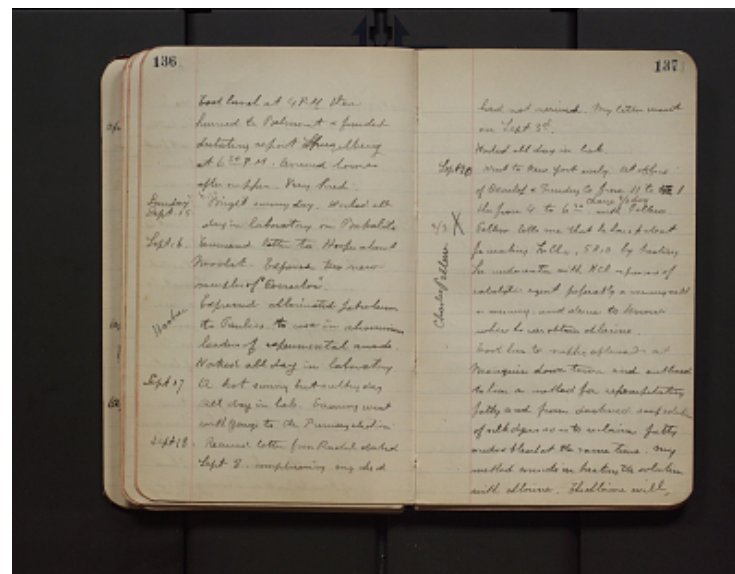
had not arrived. My letter went on Sept 3d. Worked all day in lab.  
Sept 20. Went to New York early. At office of Develop & Funding Co from 11 to 1 then from 4 to 6:30 charge 2/3 day with Pellew.

[[margin - 2/3 X]] [[margin - Charles Pellew]]

Pellew tells me that he has a patent for making  $\text{SnCl}_4 \cdot 5\text{H}_2\text{O}$  by treating Sn under water with HCl in presence of catalytic agent preferably a mercury salt or mercury, and desire to know where he can obtain chlorine.

Took him to supper afterwards at Mouquin down town and outlined to him a method for reprecipitating fatty acid from darkened soap solution of silk dyers so as to reclaim fatty acids & bleach at the same time. My method consists in heating the solution with chlorine. The chlorine will,

[[end page]]



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[[start page]]

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I hope precipitate fatty acid and bleach it and at lowest chlorine prices this would be cheaper than to treat with an acid. I intend to try the same thing with suint lye. ^[[wool fat lye]] Pellew agreed to my proposal that we would try the process each one of us separately and if successful apply for common patent together.

[[margin- Pellew]]

[[~~Sept 20.~~]] From 2 PM to 4 P.M. was at Spiegelberg's office where I met his brother too (the broker) and to whom I reported further of the condition of his brother. Washington's ^[[S]] business.

[[margin - W. Spiegelberg]]

Sept 21. It occurs to me that Pellew's process is unnecessarily complicated and the same results could be

[[margin - Pellew]]

[[end page]]

[[start page]]

139

[[margin - Pellew benchloride]]

obtained by the use of electric current putting tin in contact with a negative electrode of a generator ~~and~~ and ~~thus~~ thus making it anodic while positive electrode of carbon could be suspended in H<sub>2</sub>O into which gaseous chlorine is fed. This would dispense with the introduction of Hg and further elimination of impurities in the prepared salt.

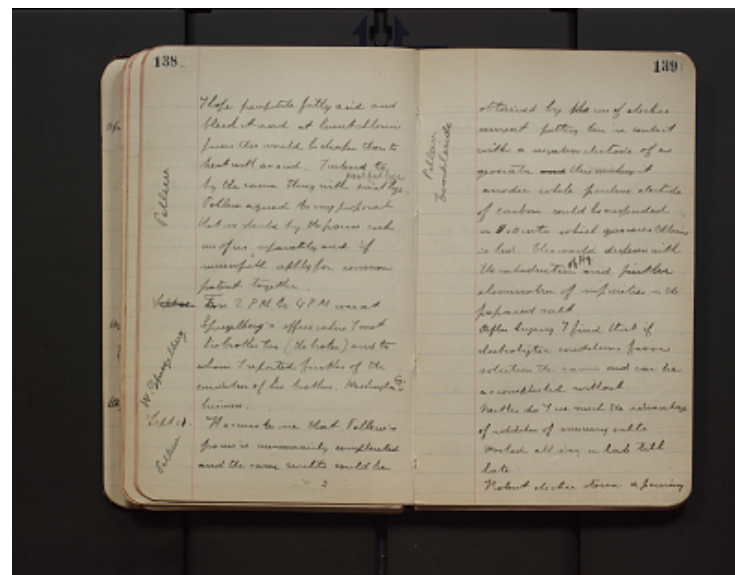
After trying I find that if electrolytic conditions favor solution the same end can be accomplished without.

Neither do I see much the advantage of addition of mercury salts.

Worked all day in lab till late.

Violent electric storm & pouring

[[end page]]



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rain. While in laboratory saw a large spark between stovepipe ~~smoke stack~~ on ceiling and gas pipe ~~which ? off~~ with snapping noise. This is the second time I observed this.

Sept 22. (Sunday) Rainy day. Worked in lab in morning. Visit of Mr. Steinhardt.

Sept 23 Rains torrents. went to New York got drenched several times Spent 1/2 day office development & Funding Co. Then went to ~~libr~~ Astor library to look up literature referring to aldehyd and phenol. Took supper in New York. rain rain rain. Arrived home late in evening.

[[margin - 1/2X]]

Sept 24. Worked all day in lab. Told to Thurlow about my general results

[[end page]]

[[start page]]

141

in Bakelite researches.

Sept 25. Worked in lab all day Made up new patent specification for the use of bases as condensing agents for Bakelite. Read same to Thurlow.

Very windy & cold Sent registered letter to Townsend by Thurlow

Sept 26 Cold clear weather in morning. Worked all day in lab. A cold night

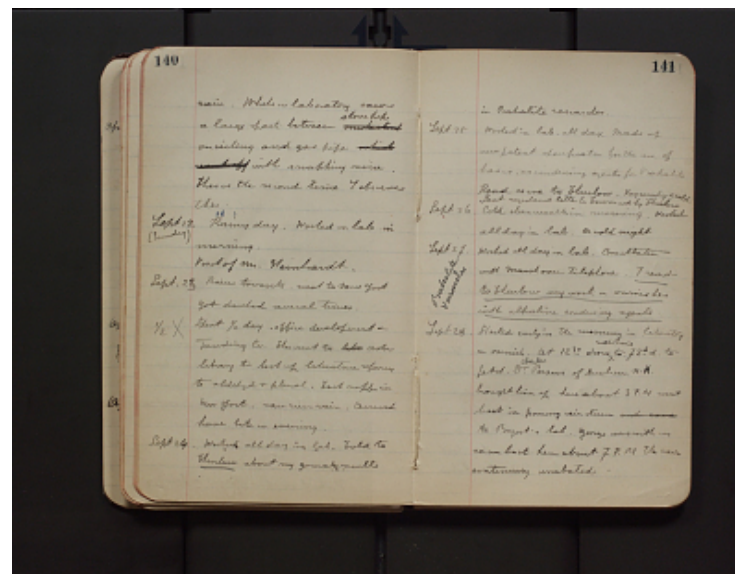
Sept 27 Worked all day in lab. Consultation with Marsh over telephone.

I read to Thurlow my work on varnishes with alkaline condensing agents

[[margin - Bakelite varnishes]]

Sept 28. Started early in the morning in laboratory on varnish. At 12:30 drove with Lewis to 72nd st. to fetch Dr. Charles Parsons of Durham N. H. brought him up here about 3 P.M. went back in pouring rain storm ~~and came~~ to Bogert's lab. George was with us came back here about 7 P.M. the rain continuing unabated

[[end page]]



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Sept 29 Sunday Worked in lab on varnishes.

At 11

:30 drove to Mandel's but he was gone to New York and returned to lab where I remained until evening

varnishes

Sept 30. Worked in lab on varnishes Lewis tightened bearing of cylinder 4.

In the evening wrote Devel & Funding Co criticizing proposal of Marsh & Sperry as to remodelled cell.

1/3 day

Oct 1/ Worked in lab on varnishes until 11 A.M then went with Lewis in the motor car to New York.

Bought at Broadway Auto Garage 1 new tire 2 lamps & binder for wheel I paid check 41.50

Drove to Pa Ferry to fetch Mr. C. P. Townsend & wife took them all here arrived home

end page

start page

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about 6 P.M.

Oct 2. Spent all day with Townsend & Thurlow in lab to show the former all samples of Bakelite. Gave him full explanation about my process. Made up patent specification for the use of bases.

Explained about my varnishes. made some Bakelite etc.

Conferred also with him as to corrosion of anodes. (2 hr) 1/3 day

Bakelite bases - patent specifications

1/3/1

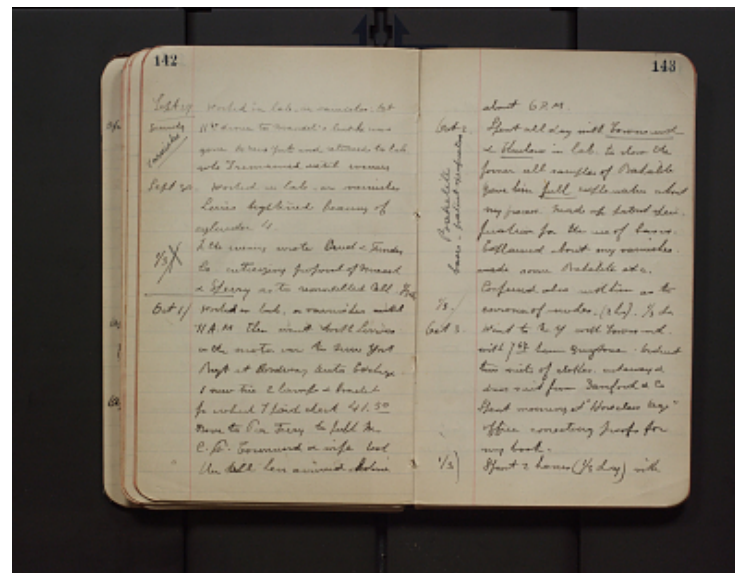
Oct 3. Went to N. Y. with Townsend. with 7:47 train Greystone. Ordered two suits of clothes. cutaway & dress suit from Sanford & Co

Spent morning at "Horseless Age" office correcting proofs for my book.

Spent 2 hours (1/3 day) with

1/3/1

end page



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Lansing. at D. & F. Co. office.

Went to Seligsberg & showed him samples of Bakalite.

In the evening on train showed Mandel samples of Bakalite.

[[margin - Bakelite]]

Oct 4. Worked all day in lab on varnish

Oct 5. Went to New York. D. & F. Co about 2 1/2 hr at office consulting and letter writing. 1/3 day

[[margin - 1/3X]]

Took lunch with Baskerville at Saturday Afternoon Lunch Club at Mouquins, an intellectual bunch of scientists physicians, writers etc.

Oct 6. (Sunday) worked all day in laboratory

Oct 7. Started making bill for last six months services for Development & Funding Co.

[[end page]]

[[start page]]

145

and wrote letter as follows:

Enclosed please find ~~statement~~ my semi annual of bill for services rendered to the Development & Funding Co. from April 1st 1907 to Oct. 1st 1907. ~~[[arrow drawn from "Oct 1st 1907" to the sum]]~~

Of the amount 105\$ and 14\$ travel expenses = 119\$ refers to the last

conference at Niagara Falls.

Professorial services \$1080.00

Traveling expenses & disbursements 113.50

Total 1193.50

[[margin - Hooker]]

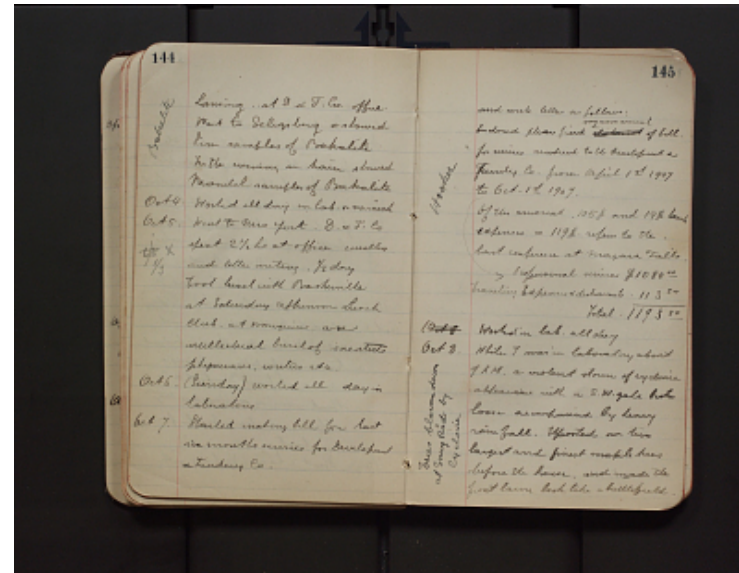
~~Oct 8~~[[margin - Hooker]]

Oct 8. Worked in lab all day

Oct 8. While I was in laboratory about 9 A.M. a violent storm of cyclonic appearance with a S.W. gale broke loose accompanied by heavy rainfall. Uprooted our two largest and finest maple trees before the house and made the front lawn look like a battlefield.

[[margin - Trees blown down at Snug Rock by Cyclones]]

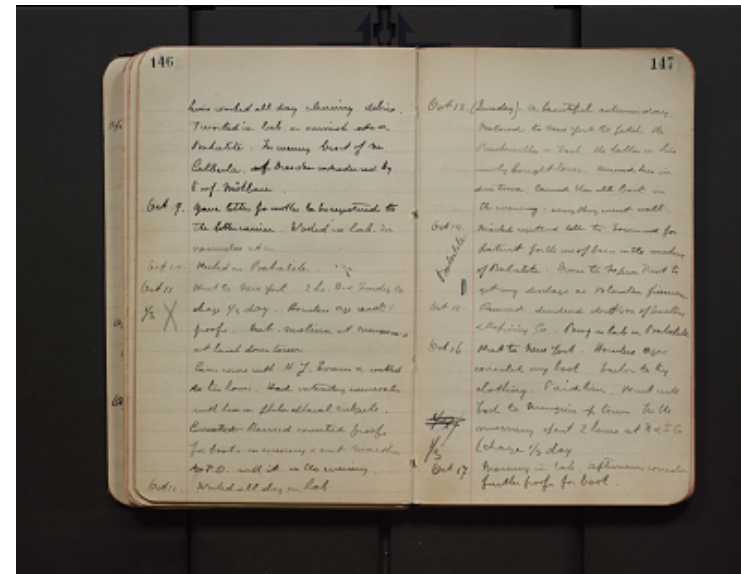
[[end page]]



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146  
 Lewis worked all day cleaning debris. I worked in lab on varnish  
~~etc~~ & Bakalite. In evening visit of M.  
 Calberla of Dresden introduced by Prof Möhlau.  
 Oct 9. Gave letter for mother to be registered to the letter carrier.  
 Worked in lab on varnishes etc.  
 Oct 10. Worked on Bakalite.  
 Oct 11. Went to New York. 2 hr. D & Funding Co charge 1/3 day.  
 1/3X  
 Horseless Age read proofs. Met Molina at Mouquins at lunch downtown  
 Lewis came with H. J. Evans & walked to his house. Had interesting  
 conversation with him on philosophical subjects. ~~Corrected~~  
 Corrected ~~Revised~~ corrected proofs for books in  
 evening & sent Martha to P.O. with it in the evening.  
 Oct 12. Worked all day in lab  
 [end page]

[start page]  
 147  
 Oct 13. (Sunday). A beautiful autumn day. Motored to New York to fetch  
 the Baskervilles & Toch. The latter in his newly bought house. Arrived  
 here in due time. Carried them all back in the evening. everything went  
 well.  
 Oct 14. Mailed registered letter to Townsend for patent for the use of  
 bases in the making of Bakalite. Drove to Nepera Park to get my  
 discharge as volunteer fireman. Discharge as volunteer fireman.  
 Bakelite  
 Oct 15. Received dividend check \$400 of Smelting & Refining co. Busy  
 in lab on Bakalite  
 Oct 16. Went to New York. Horseless Age corrected my book. Tailor to  
 try clothing. Paid him. Went with Toch to Mouquin up town. In the  
 morning spent 2 hours at D & F Co (charge 1/3 day  
 1/2 1/3  
 Oct 17. Morning in lab. Afternoon correction further proof for book.  
 [end page]



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took supper at Toch's house.

Evening reception at Chemist Club and opening of annual meeting of Am. Electrochemical Society.

Made acquaintance there of Rhodin who seemed half tipsy. Told me he had bought right of Storey patent and they were making ebonite substitute with it in England.

Showed Bakalite samples to

Dr. Weidemann in Chemist Club and to Dr. Saunders of Norton Emery Company. I showed samples of Bakalite and Carborundum Bakalite. He seemed very eager to get the material and he told afterwards to Thurlow that Mr Higgins, the manager of

of

[[margin - Story, Wiechmann]]

[[margin - Grinding wheels Carborundum Saunders & Higgins of Norton Co see my samples]]

[[end page]]

start page]]

149

his company had shown great interest and was impatient to get samples. I promised samples for later. ~~Took supper at~~

~~Went afterwards to Cumberland Hotel where most members were stopping.~~

The Comptroller Metz to us in his automobile to Toch's and from there to Belmont where I stayed over night.

Oct 18. Went to Chemists Club in morning to hear some lectures

told to Prof. Tucker about Graphite-Bakalite as a conductor and showed him sample.

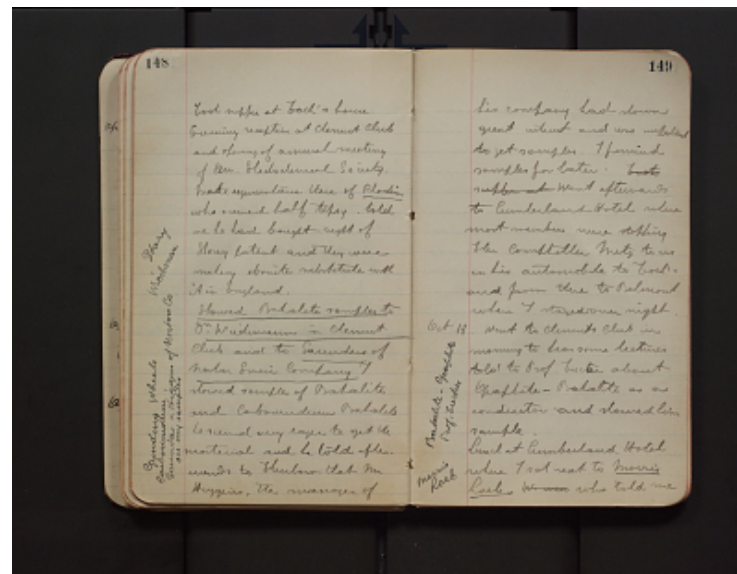
[[margin - Bakelite - Graphite Prof. Tucker]]

Lunch at Cumberland Hotel where I sat next to Morris Loeb

~~We wen~~ who told me

[[margin - Morris Loeb]]

[[end page]]



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why he had retired from professorship in New York University. We all went to Edison laboratories in Orange.

We met Edison and Mrs. Edison in the library. He begins to look very old and is ~~so~~ deaf on one side. His wife stunningly handsome woman.

~~The whole~~ All the buildings look rather overcrowded and provisional. Workers mostly Italians, Poles, and similar people. Everything looks rather shabby and overcrowded although now and then I was struck by a functional and simple direct way of getting to results.

[[margin - Edison]]

[[/end page]]

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Instead of going to dinner in Liederkrantz I went alone to Mouquins then home.

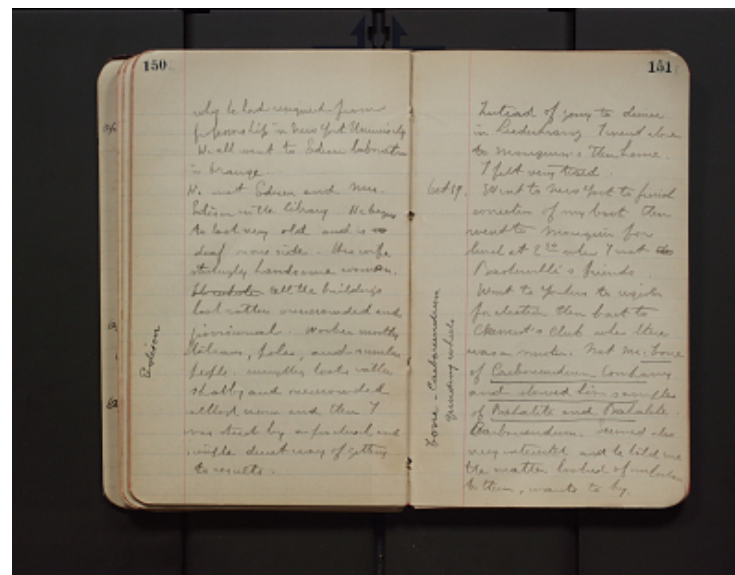
I felt very tired.

Oct 19. Went to New York to finish correction of my book then went to Mouquin for lunch at 2:30 where I met ~~the~~ Baskerville's friends.

Went to Yonkers to register for election then back to Chemist's Club when there was a motor. Met Mr. Tone of Carborundum Company and showed him samples of Bakalite and Bakalite Carborundum. Seemed also very interested and he told me the matter looked of importance to them, wants to try.

[[margin - Tone-Carborundum grinding wheels]]

[[end page]]



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Oct 20. Sunday. Some work in my lab. during the morning Mr. Mohlman took lunch with us. Lewis had motored here from Kingsbridge and he got hung up at Glenwood Avenue on his return on account of short circuit in battery. In the evening motored Mrs. Mohlman home. She seemed much disheartened at conduct of her brother and criticized very much his sulky, petty ways and lack of activity.

[[margin - Mrs. Mohlman Albert G.C Hahn]]

Oct 21. Worked all day in laboratory and made patent test for abrasives. mailed same per Thurlow to Byrner & Townsend

[[margin - grinding wheels]]

[[end page]]

[[start page]]

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Oct 22) Worked in lab all day. Strike of the trolley cars in Yonkers.

Oct 23) Worked in lab all day.

Oct 24) Received letter of Saunders (Norton Emeri wheel Co) telling me he sees many new applications for Bakelite and wants to know whether I intend patenting each application by itself.

[[margin - Letter of Saunders about Bakelite]]

Worked in lab.

Westinghouse Co in hands of receiver.

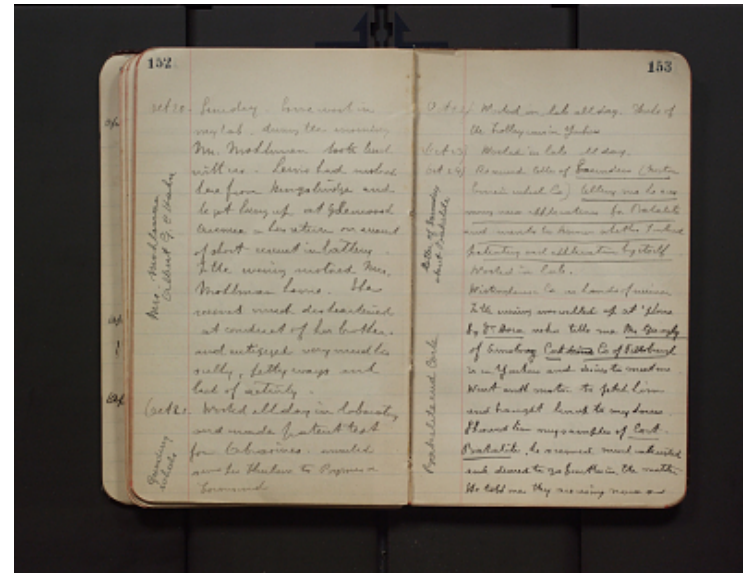
In the evening was called up at 'phone by Dr.

Horn who tells me Mr. Quingly

of Armstrong Cork Co of Pittsburgh is in Yonkers and desires to meet me. Went with motor to fetch him and brought him up to my house. Showed him my samples of Cork-Bakelite he seemed much interested and desired to go further in the matter. He told me they are using now a

[[margin - Bakelite and Cork]]

[[end page]]



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German patent for compressed cork consisting in the use of nitrocellulose solution, drawbacks are slow drying, evaporation in vacuo, limited thickness of slabs on cement of irregular evaporation and great cost of raw materials amounting to 8 cents per pound of cork so treated. I showed him my samples and he seemed to recognize advantages as to resiliency and cheapness and simplicity of process. He promised to furnish me with samples of different grades of pulverized cork and I promised him to make Bakelite Cork samples with it and afterwards show him the process.

[[margin - Cork-Bakelite Armstrong Cork Co]]

[[/end page]]

[[start page]]

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They both stayed here until about 11 P.M

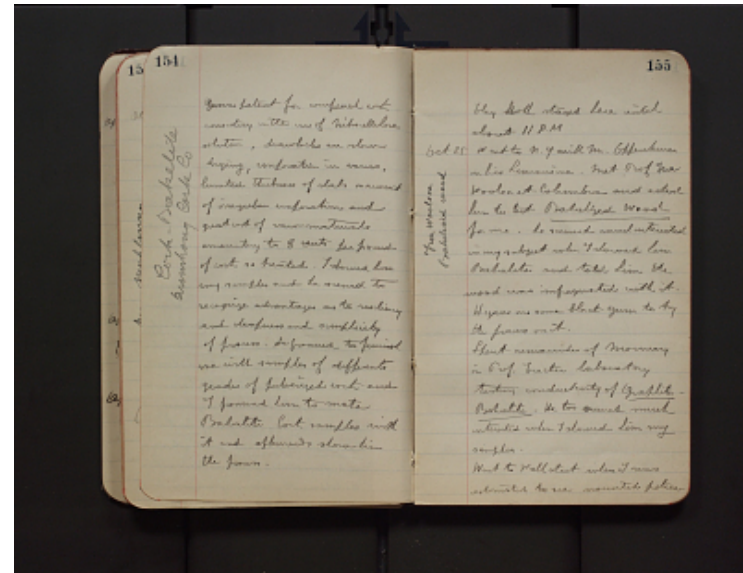
Oct 25. Went to N.Y. with Mr. Oppenheimer in his Limousine. Met Prof Ira Woolson at Columbia and asked him to test Bakalized Wood for me. He seemed much interested in my subject when I showed him Bakelite and told him the wood was impregnated with it. He gave me some black gum to try the process on it.

Spent remainder of morning in Prof. Tuckers laboratory testing conductivity of Graphite-Bakelite. He too seemed much interested when I showed him my samples.

Went to Wall Street where I was astonished to see mounted police

[[margin - Ira Woolson Bakelised wood]]

[[end page]]



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men and rather dense crowds. Run on the Trust Co of America in front of office of Development & Funding Co. Good metered patient crowd line extending over the block until beyond custom house. Probably mostly small depositors judging from looks and appearance. Great uneasiness everywhere on account of financial condition.

Received two first copies of my book which has appeared yesterday. Consulted with Marsh & Lansing three hours, (chge 1/2 day) [[margin - 1/2]]

Hook, Marsh & myself went to Delmonicos for lunch. Wilcox secretary of Public Utilities commission came to our table. [[margin - Financial panic]]

[[end page]]

[[start page]]

157

General talk everywhere. The unsatisfactory financial condition Asked ~~my~~ my ~~last~~ payment of my last bill to Hooker but he asked that I should wait and be satisfied with half of it.

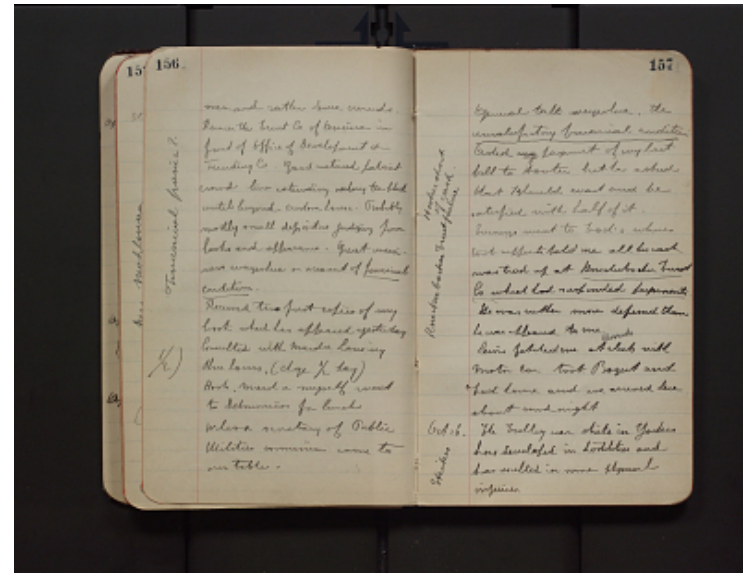
Evening went to Toch's where took supper he told me all his cash was tied up at Knickerbocker Trust Co which had suspended payments. He was rather more depressed than he ever appeared to me. Lewis fetched me at Chemists club with motor car. Took Bogurt and Toch home and we arrived here about midnight

[[margin - Hooker short of cash. Knickerbocker's Trust failure]]

Oct 16. The trolley car strike in Yonkers has developed in hostilities and has resulted in some physical injuries.

[[margin - Strikes]]

[[end page]]



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[[margin - Thurlow wants to quit]]

Oppenheimer seems rather excited on the financial condition. Worked all day in laboratory. Asked Thurlow to drop some of his work and pitch in in cork. Bakelite and make my samples. He told me a position was offered to him at \$3500 at Celluloid Co. I told him he should use his own judgment and leave me out of consideration but that prospects were such that I might manage ere long to make him have better financial returns than what were offered to him if he cared to take chances.

[[margin - Bakelite]]

I intend to make some kind of suitable and satisfactory

[[end page]]

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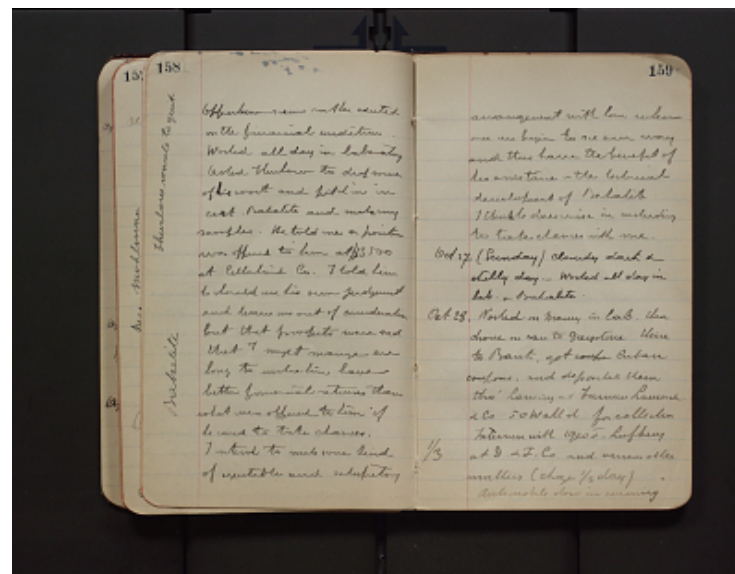
159

arrangement with him when once we begin to see our way and thus have the benefit of his assistance in the technical development of Bakelite. I think he does wise in concluding to take chances with me. Oct 27 (Sunday) cloudy dark & chilly day. Worked all day in lab on Bakelite.

Oct 28. Worked in morning in lab, then drove in rain to Greystone then to Bank, got ~~coupon~~ Cuban coupons, and deposited them thro' Lansing at Burrows Laurence & Co. 50 Wall st for collection. interview with Geo F. Lufberg at D. & T. Co. and various other matters (charge 1/3 day). Automobile show in evening

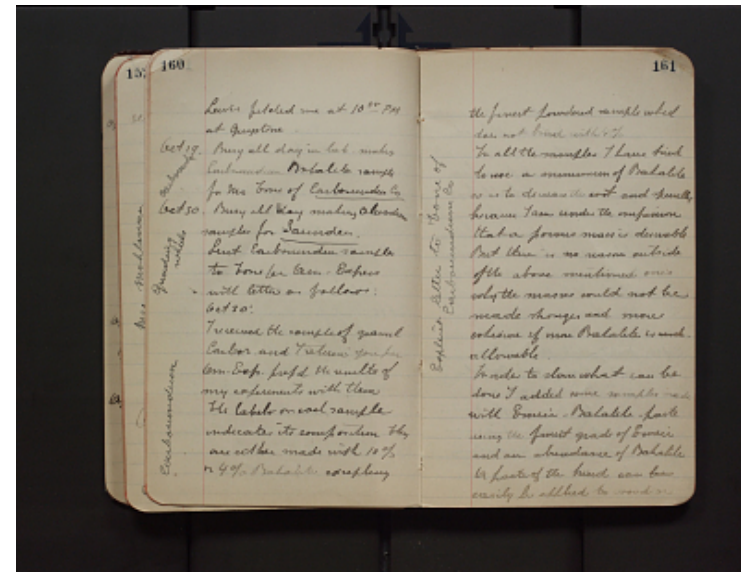
[[margin - 1/3]]

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 Lewis fetched me at 10:55 PM at Greystone.  
 Oct 29. Busy all day in lab making Carborundum Bakalite sample for Mr. Tone of Carborundum Co.  
 carborundum grinding wheels  
 Oct 30. Busy all day making alundium samples for Saunders. Sent Carborundum samples to Tone for Am. Express with letter as follows:  
 grinding wheels  
 Oct 30: I received the sample of granul Carbor. and I return you per Am. Exp. prepd the results of my experiments with them The labels on each sample indicates its composition. They are either made with 10% or 4% Bakalite excepting Carborundum  
 [end page]  
 [start page]  
 161  
 the finest powdered sample which does not bind with 4%  
 In all the samples I have tried to use a minimum of Bakalite so as to decrease the cost and specially because I am under the impression that a porous mass is desirable But there is no reason outside of the above mentioned ones why the masses could not be made stronger and more cohesive if more Bakalite is used  
 allowable.  
 In order to show what can be done I added some samples made with Emeic - Bakalite - paste using the finest grade of Emeic and an abundance of Bakalite or parts of the kind be easily be applied to wood or  
 Explicit letter to Tone of Carborundum Co.



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or any suitable surface and my patent application cover all these uses. As soon as you let me hear your outcomes I shall then try to make better samples. The ones I send you have been obtained by hastily mixing Carbondum and Bakalite in little Whiskey glass and then hardening the composition." Truly etc.

[[margin - Letter to Tone (Carborundum)]]

Oct 31. Worked in lab all morning. Sold 1 Bond Wisc. Central per T. L. Selysberg & Co. @ 76.

Spent two hours at office D & F Co. started some letters & had some ansulatory work with Marsh & Lansing chge 1/6 day.

[[margin - 1/6 X]]

[[end page]]

[[start page]]

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Nov 1. Worked all day in lab. a beautiful autumn day like yesterday.

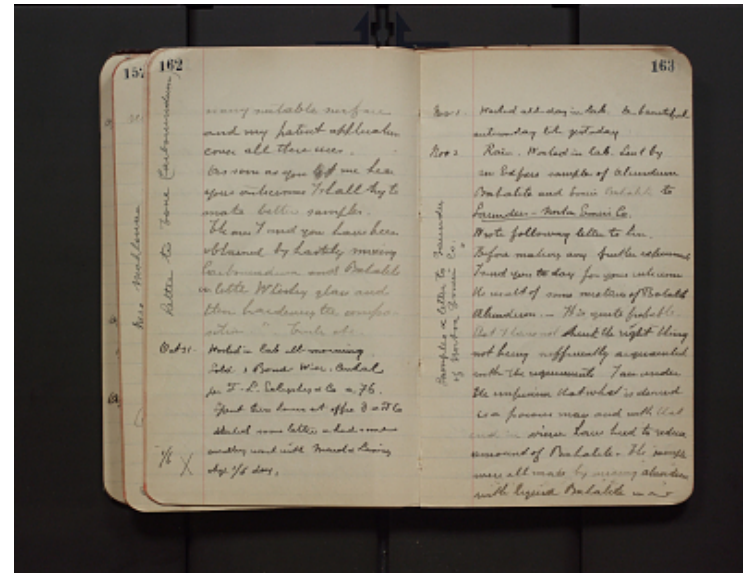
Nov 2. Rain. Worked in lab. Sent by Am Express sample of Alumdium Bakalite and Emeric Bakalite to Saunders-Norton Emeric Co.

[[margin - Samples & letter to Saunders of Norton Eneic Co.]]

Wrote following letter to him.

"Before making any further experiments I sent you to day for your decision the result of some mixtures of Bakalite Alumdum.-- It is quite probable that I have not struck the right thing not being sufficiently acquainted with the requirements. I am under the impression that what is derived is a porous mass and with that end in view have had to reduce amount of Bakalite. The samples were all made by mixing alumdium with liquid Bakalite in a

[[end page]]



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little glass mixing being done in a hurry. glass and contents were heated so as to harden. I had no trouble in mixing. If I had a sample of much finer aluminum I would have made some paste to spread on a wooden slab. I send you a wooden slab in which I spread a mixture of 3 parts of fine abrasive and one part Bakalite. I took no pain whatever to make a smooth surface. I also send a small disc of Bakalite Emery which was hardened on glass. As you will notice it sticks to glass so forcibly that in detaching same it took along a chip of glass

[[margin - Alundium + Bakelite letter to Saunders sending samples]]  
[[end page]]

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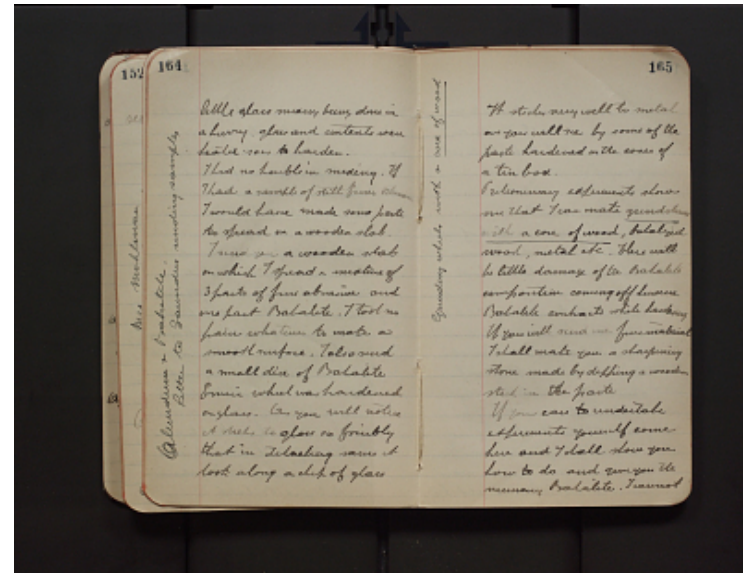
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It sticks very well to metal as you will see by some of the paste hardened on the cover of a tin box.

Preliminary experiments show me that I can make grindstones with a core of wood, bakalized wood, metal etc. There will be little damage of the Bakalite composition coming off because Bakalite contracts while hardening. If you will send me zinc material I shall make you a sharpening stone made by dipping a wooden stick in the paste

If you care to undertake experiments yourself come here and I shall show you how to do and give you the necessary Bakalite. I cannot

[[margin - Grinding wheel with a core of wood]]  
[[end page]]



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spare the time just now to go to Niagara Falls neither do I know when I shall be able to get there."

I also wrote a letter to Tone of Carborundum Co.

"I mail you today a slab of wood on which I have spread some Carborundium-Bakalite paste. No attempt was made to obtain a smooth surface. Carborundum No. 2 P was used mixed with 1/3 to 1/2 of liquid Bakalite. The mixture clings tenaciously to all surfaces even to glass and the adherence to the latter is in so strong as to cause the glass to chip off in conchoid fragments sooner than to detach itself from the mass.

Singular mixtures might be

[[margin - grinding wheels]]

[[end page]]

[[start page]]

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used to make grinding wheels with a wooden a metallic or a paper core and there is little danger of the composition detaching itself because Bakalite shrinks while hardening. Sharpening stones made by immersing a stick in Bakalite or Carborundum paste can be made in the same process very strong resistance.

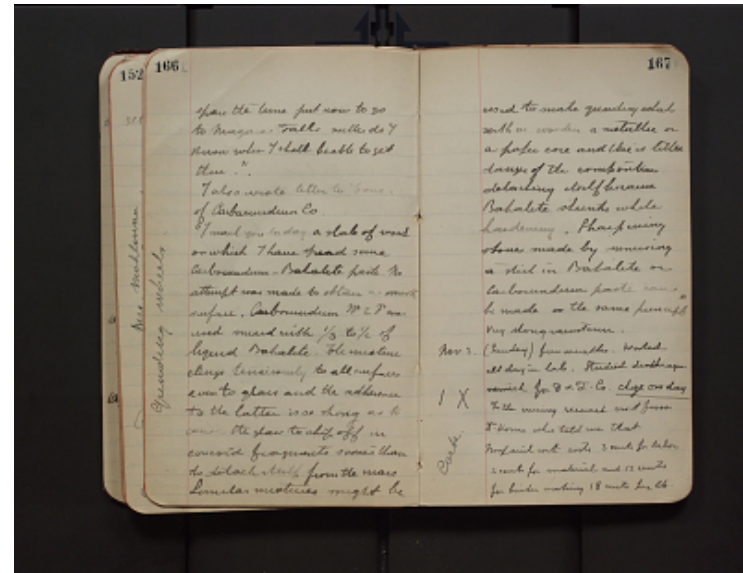
Nov 3. (Sunday) fine weather. Worked all day in lab. Studied diaphragm varnish for D + F Co. chge one day

[[margin - 1X]]

In the evening received visit from Dr. Horne who told me that nonpaint cork costs 3 cents for labor 3 cents for material and 12 cents for binder making 18 cents per lb.

[[margin - cork]]

[[end page]]



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the density as taken in our laboratory is 0.25; this leaves us good leeway for the use of Bakelite. I told to Dr. Horne about the new improvement of penetrating our Niagara Falls electrolytic diaphragms with Bakelite.

Nov 4. Worked in lab. mailed book to Jacobi and to J.D. Miller. Worked further on diaphragms and sent a letter to W. Hooker and a bottle of solution letting him how to use it. Examined and studied report of Lansing and letter to Lufberg (Charge 3/4 day)

[[margin - 3/4X]]

Nov 5/ Worked in laboratory to 10 A.M. then was disturbed by Zuhlke coming for a consultation on spots on paper. Voted for Dr. Warren but split my ticket

[[margin - photo paper]]

[[end page]]

[[start page]]

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Little steam boiler arrived. We put it up in the afternoon

Nov 6. Rain all day. Worked in lab.

Nov 7. Worked in lab. carried copy of my book to will Gunters. Hollywood + Yonkers Public Library

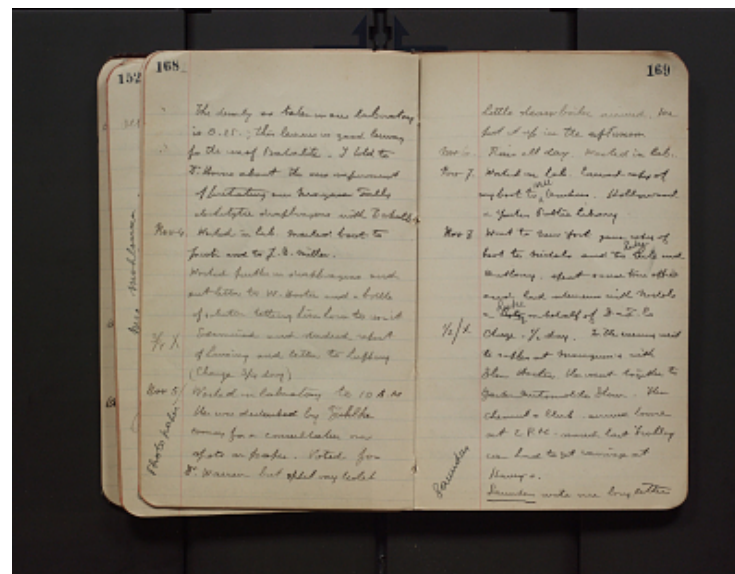
Nov 8. Went to New York gave copy of book to Nichols and to Luke Bute and Anthony. Spent some time office and had interviews with Nichols & Luke on behalf of D + F Co Charge 1/2 day.

[[margin - 1/2X]] In the evening went to supper at Mougain's with Elon Hooker. Then went together to Garten automobile Show. Then Chemist's Club. arrived home at 2 P.M. missed last trolley car had to get carriage at Harvey's.

[[underline]] Saunders [[/underline]] wrote me long letter

[[margin - Saunders]]

[[end page]]



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[[preprinted]] 170 [[/preprinted]]

in answer to mine.

Saw Mali gave him copy of my book and showed him Bakelite he wants sample for turning billiard balls out of it.

[[margin]] billiard balls [[/margin]]

Took lunch with Miller at Merchant's Club. He asked my advice about servicable place to locate their fibre business.

In the evening showed samples of Bakelite to Wallerstein.

Went to see Schweitzer at his office to inquire about address of Moffet for taking out european patents.

Got check \$500 from T. L. Seligsberg.

Nov 9. Worked all day in laboratory. Oppenheimer came in. I told him about my intention of using Bakelite for Billiard

[[end page]]

[[start page]]

[[preprinted]] 171 [[/preprinted]]

balls.

Nov 10. A foggy rainy unpleasant Sunday morning.

Thurlow sent up samples of Bakelite Cork yesterday to Armstrong Cork Company and I wrote them a letter today giving explanations as to composition, degree of compression and sp. gr.

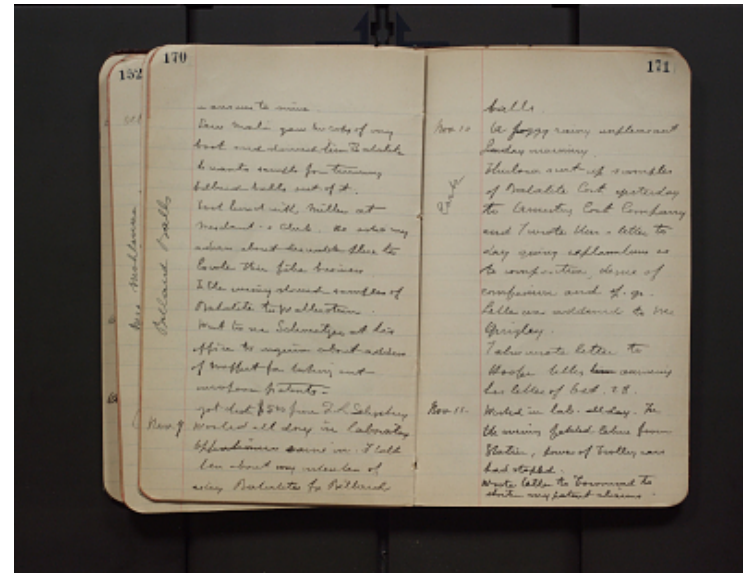
Letter was addressed to Mr. Quigley.

[[margin]] Cork [[/margin]]

I also wrote letter to Hooper telling ~~him~~ answering his letter of Oct. 28.

Nov 11. Worked in lab. all day. In the evening fetched Celine from station, power of trolley cars had stopped.

Wrote letter to Townsend to shorten my patent claims.



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Nov 12. Worked in lab. Mailed \$100.00 to mother

Nov 13. Worked all day in lab.

Nov 14. I am 44 years old to day. Worked all day in lab. ~~Marked copies of~~ Heard the news of the sudden death for Mr. D. M. Terry. Nice old man gone.

Nov. 15. Went to New York saw Prof. Woolson who gave me results of tests on Bakalized wood. Gave ball to Mali to see whether billard balls can be turned out of Bakalite Spent afternoon at office of D&T. Co. writing letters. Charge 1/2 day

[[margin - 1/2x]]  
Consultation with Sperry whether compound anode with Bakalite graphite is possible. I told to Sperry that Bakalite is made with Formaldehyde and Phenol

[[margin - Sperry]]

Evening trustee meeting at Chemists Club

[[end page]]

[[start page]]

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[[left margin]] annual meeting of Anvil Club

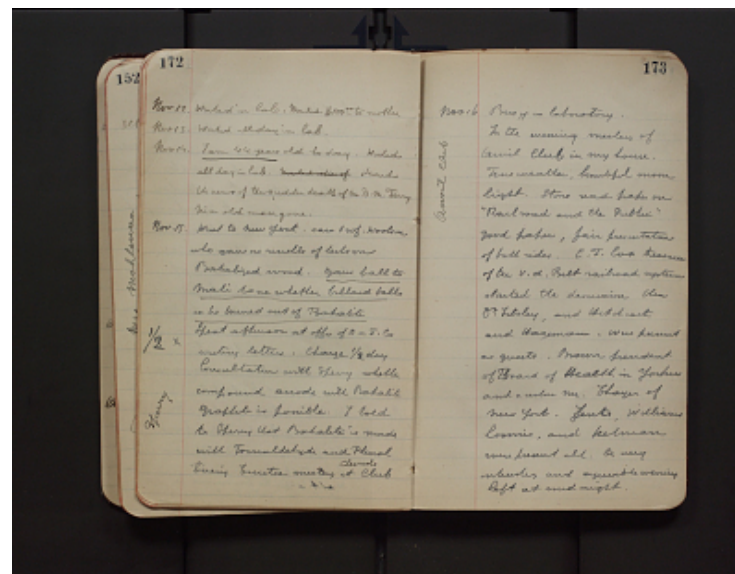
Nov. 16. Busy in laboratory.

In the evening meeting of Anvil Club in my house.

[[margin - Anvil Club]]

Fine weather, beautiful moon light. Stone read paper on "Railroad and the Public" good paper, fair presentation of both sides. C.F. Cox treasurer of the V.d. Belt railroad system started the discussion Then Dr. Tilsley and Hitchcock and Hageman. were present as guests. Brown president of Board of Health in Yonkers and a certain Mr. Thayer of New York. Jenks, Williams, Loomis, and Kelman were present all. A very interesting and agreeable evening  
Left at mid night.

[[end page]]



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[[start page]]

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Nov 17.

Wrote all day in study soon my preparations for ~~patents~~ two new Bakelite Patents one ~~several~~ two phase process the other insulation of dynamos

[[margin - Bakelite]]

Nov 18. Revised my specification and sent them off by registered mail

Nov 19 Worked morning on Bakelite solutions for Niagara Falls. charge 1/2 day for diaphragms sent it off by express. Afternoon worked over results of strength tests of wood impregnation

[[margin - 1/2 X]]

Nov 20 Mailed the specification for Patent for wood impregnation with Sulphite liquor. Stopped ~~at~~ evening at Eichmann's where I left copy of my book.

Nov 21 Worked over results of strength tests of impregnated wood.

Mailed several of my books. Went to Hastings Pavement Co. to make some

[[end page]]

[[start page]]

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crushing tests. Drizzling rain made tests. Mr. Hemsheet Whitney helps me. tests very satisfactory gave copy of book to Mandel when returning home.

[[margin - Hemsheet crushing tests]]

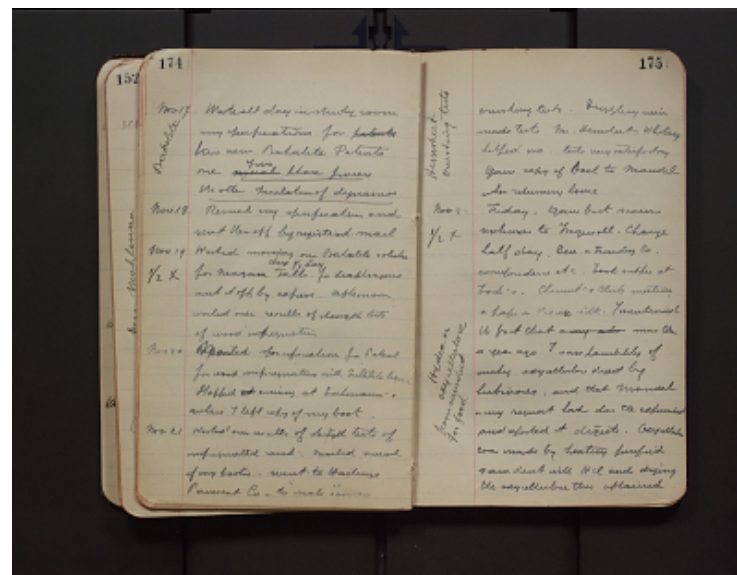
Nov 22. Friday. Gave back seven volumes to Ingersoll. Charge half day Dev. & Funding Co. correspondence etc.

[[margin - 1/2X]]

Took supper at Toch's. Chemist's Club meeting a paper on Viscose silt. I mentioned the fact that ~~on my adv~~ more than a year ago I saw probability of making oxycellulose digest by herbivores. and that Mandel on my request had done the experiment reported it digests. Oxycellulose was made by heating purified saw dust with HCl and drying the oxycellulose thus obtained

[[margin - Hydro- or oxycellulose from sawdust for food]]

[[end page]]



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[[margin - Feeding cattle]]

my statement that I believed I could feed cattle on saw dust evoked much movement and applause. ~~Met Sperry and read to him my patent of specifications for insulating dynamo etc with Bakelite. Took 12:10 AM train.~~

[[margin - Dynamos & motors]]

Nov 23. Spent all day writing letters wrote one to Quigley of Armstrong Cork Co telling him how cork Bakelite could be made in a continuous process by feeding continuously hot granulated cork with Bakelite then compressing and let the hot mass harden by itself.

[[margin - cork]]

All afternoon was utilized for laboratory and making a condensed report on the result  
[[/end page]]

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of my wood impregnation tests.

Evening Mandel & wife came to eat mussels. After supper Branchi & wife joined.

Showed Mandel in my lab alone my products and told him how Bakelite was made.

[[margin - Mandel]]

Nov 24. Sunday. Rain all day. Read & wrote letters

Nov 25. Wrote letters all day. Thurlow busy moulding Bakelite.

Nov 26. Worked in laboratory.

Nov 27. Ditto.

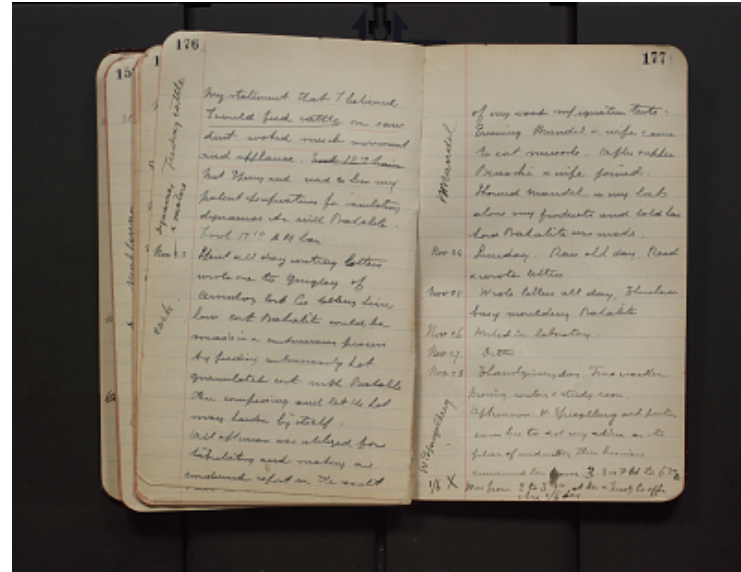
Nov 28. Thanksgiving day. Fine weather morning under & steady noon. Afternoon W. Spiegelberg and partner came here to ask my advice as to plan of undertaking their business.

[[margin - Spiegelberg]]

Remained here from 3:30 PM to 6:30 PM was from 2 to 3:30 at Dec & Funding Co office charge 1/6 day

[[margin - 1/6X]]

[[/end page]]



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Nov 29. Worked in garden & in lab until 12. M. Went to New York for conference with W. Spiegelberg and his two brothers to discuss nature of their business remained there from 3:30 P.M. to 5:45.

Nov 30. Fun day. Worked in lab all day Thulow molded some objects

Dec 1. Sunday. Worked in laboratory all day in the morning reviewed my patent application with Thulow. In the afternoon Turner called on me. I paid him for alterations on my camera

Dec 2. Our new h Aden range arrived and I spent all day with Lewis erecting it on place of old stove. Got through couple of days hard work. In the afternoon went to Yonkers to mail

[[/end page]]

[[start page]]

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[[margin note: "B" patent]]

my two patent applications = Insulating dynamos and intermediary product patent Thulow kept busy molding Bakelite.

Dec 3. Received check ~~[[?]]~~ ~~[[?]]~~ development & Funding Co. for 700 dollars. Balance of my bill up till Oct 1. 1907. -- Worked in lab all day

Dec 4. Worked ~~[[?]]~~ all day ~~[[?]]~~ in lab. Much snow. ~~[[?]]~~ ~~[[?]]~~ Dec 5 ~~[[?]]~~ ~~[[?]]~~ ~~[[?]]~~

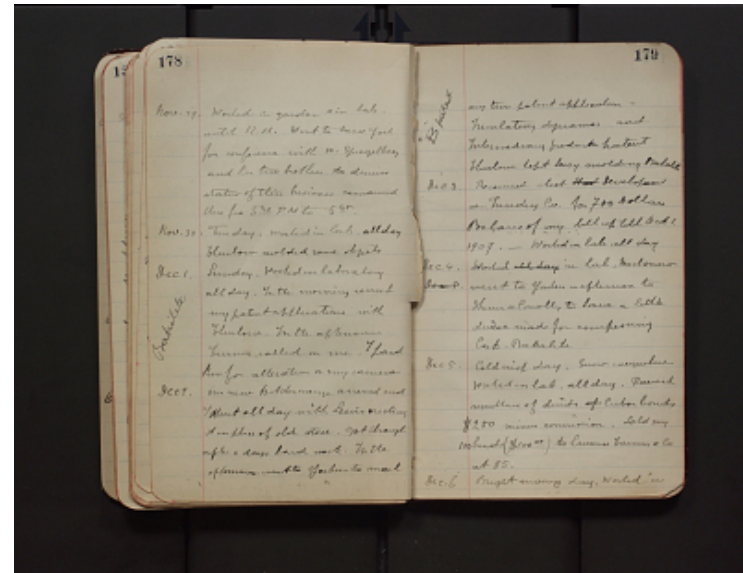
Went to Yonkers in afternoon to Shawn & Conolly to have a little device made for compressing Cork Bakelite

Dec 5. Cold crisp day. Snow everywhere. Worked in lab all day.

Received remittance of dividends of Cuban bonds \$250 minus commission. Sold my 100 bonds (\$100.00) to Laurence Turner & Co at 85.

Dec 5 Bright snowy day. Worked in

[[/end page]]



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laboratory and at about 10 AM received the visit by appointment of Saunders, Higgins & Gibson (?) of the Norton Co. They have brought along several grade of alundium and two small iron moulds for moulding Bakelite grinding wheels. Thurlow was present.

I showed them liquid A Bakelite all my samples of B and C Bakelite and explained to them how A gets transformed in C & B and how we proceed.

We then showed them how to make a wheel. I told Mr Higgins that provisionally I would not propose the matter to their competitors so as to give them a chance to determine whether it was worth while provisionally

Grindstones Saunders, Higgins & Gibson

Explained my process to Mr of Norton Emery Co]

end page]

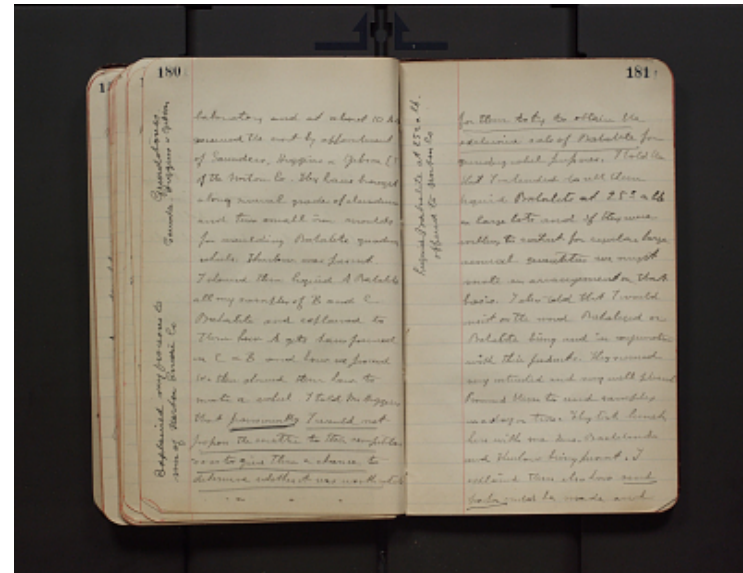
start page]

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for them to try to obtain the exclusive sale of Bakelite for grinding wheel purposes. I told them that I intended to sell them liquid Bakelite at 25c a lb in large lots and if they were willing to contract for regular large annual quantities we might make an arrangement on that basis. I also told that I would revisit on the word Bakalized or Bakelite being used in conjunction with their products. They seemed very interested and very well pleased. Promised them to send samples in a day or two. They took lunch here with me Mrs. Baekeland and Thurlow being present. I explained then also how sand paper could be made and

Liquid Bakelite at 25 c a lb. offered to Norton Co]

end page]



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how grinding wheels with a wooden or (bakalized wooden) core could be made and how we could use Bakalized paper pulp for the same purpose. I drove them with the car to 72d st in the evening.

I took lunch alone at Mouquin's then went to Chemist's Club and came home about midnight.

Dec 7. Went to New York to deliver my bonds to Lawrence Turner & Co and got their check for \$8500.00 which I deposited the same day with F. L. Seligsberg

They agreeing to pay me call money water. Spent from 12 to 1 1/2 PM at D & F Co. Took lunch at Lunch Club at Mouquins. In the evening members of Anvil Club at Chas S. Otis.

Subject Ship - subsidies by Lansing.

[[margin note: 1/6 day]]

[[/end page]]

[[start page]]

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Dec 8. Sunday. Beautiful mild day

Did some work in lab. Afternoon conference with W. S. Spiegelberg Steinhardt, Wallace & their salesperson. Came to submit me their proposition of reorganizing their company and generally reducing expenses and ask my advice. Conference lasted from 2:30 to 5 P.M.

Dec 9. Worked in my lab. All day. Obtained fine results with polished Bakalite fiber board.

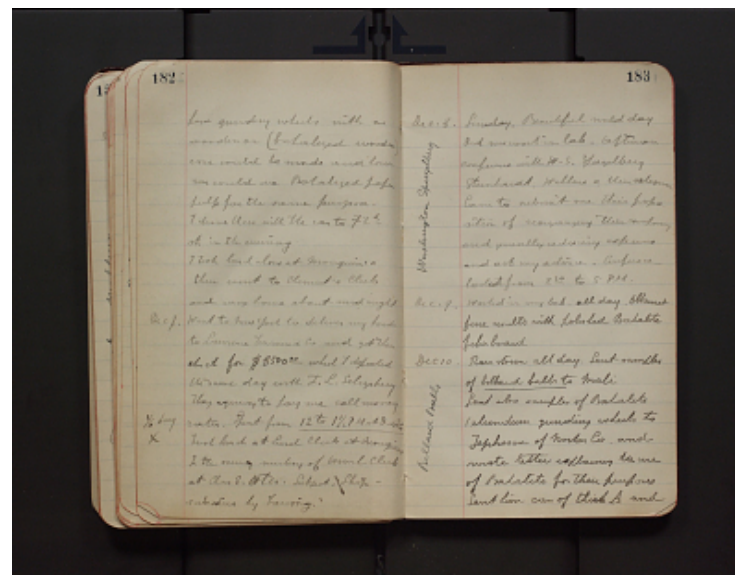
Dec 10. Rain storm all day. Sent samples of billard balls to Mail. Sent also samples of Bakalite Alumdum grinding wheels to Jephsson of Norton Co and wrote letter explaining the use of Bakalite for their purposes

Sent him can of thick A and

[[margin notes:

Washington Speigelberg

Billard balls]]



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a bottle of thin A. In the afternoon packed copies of my book to be mailed to friends abroad.  
Dec. 11 Worked morning in lab. Sent check \$100 to Mother. (instead of 17th (next is due Jan. 22).  
Took supper at Toch's. His second youngest child has measles - house quarantined. Afterwards went to Beefsteak dinner. - sat next to Loeb and McKenna. - The whole thing was a very jolly party.  
Went home at 11:30. Showed samples of Bakalite to Moore (Russel Moore)  
[[margin note: Chemist's Club Beefsteak dinner]]  
Dec 12. Worked a little in lab. Took rest in afternoon.  
In the evening, dinner of the Economic Club at the Astor Hotel. Very numerous and successful gathering. Topic = Discussion of the

[[start page]]

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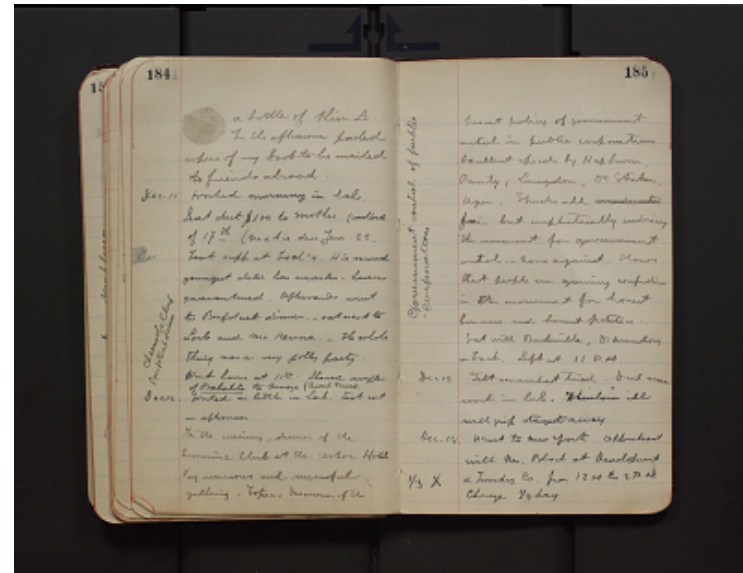
present policy of government control in public corporations. Excellent speech by Hepburn, Owerly, Livingston, Dr. Striker, Auger. Speeches all moderate fair but emphatically endorsing the movement for government control. - none against. Shows that people are gaining confidence in the movement for honest business and honest politics. Sat with Baskerville, Dr. Armhry & Loch. Left at 11 P.M.

[[margin - Government control of public corporations]]

Dec 13 Felt somewhat tired. Did some work in lab. Thurlow ill with grip stayed away.

Dec 14. Went to New York. Appointment with Mr. Black at Development & Funding Co. from 12 M to 2 P.M. charge 1/3 day.

[[margin - 1/3X]]



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Took lunch at Mouquin's at club table. Metz came. Felt as if I had beginning of the grip.

Dec 15. (Sunday) Slight fever. Spent day reading & resting.

Dec 16 Worked in lab. ~~In the afternoon~~ visit of Lumford who remained for supper. ~~In the evening~~ drove to Endecott Hotel. Drove of New York Academy of Sciences, guest of Dr. Burgundy. Drove Evans to his home. Was delayed afterwards on Monsholu Park - loose strut - arrived home about 1 P.M. Snow & freezing.

Dec 17. ~~Felt very tired~~ remained in study room all day.

~~Worked in laboratory.~~ Thurlow arrived. Is not well yet. In the evening visit of Lumford who stayed for supper.

Dec 18. Worked all day in lab. Testing and erecting big Bakalizer. In afternoon visit of Griffin told him about Bakalite and about my pending patent for using spent sulphate liquor for impregnating wood.

[[margin notes: Bakalite Big Bakelizer]]

[[/end page]]

[[start page]]

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He tells me that the pulp board I used in my Bakalite tests is ground pulp board worth about 20 Dollars a ton.

Told me also that J & J Rogers Co Au Sable Forks. N.Y. have an installation for concentrating their sulphite liquor. and have tried many means of doing away with their spent liquor.

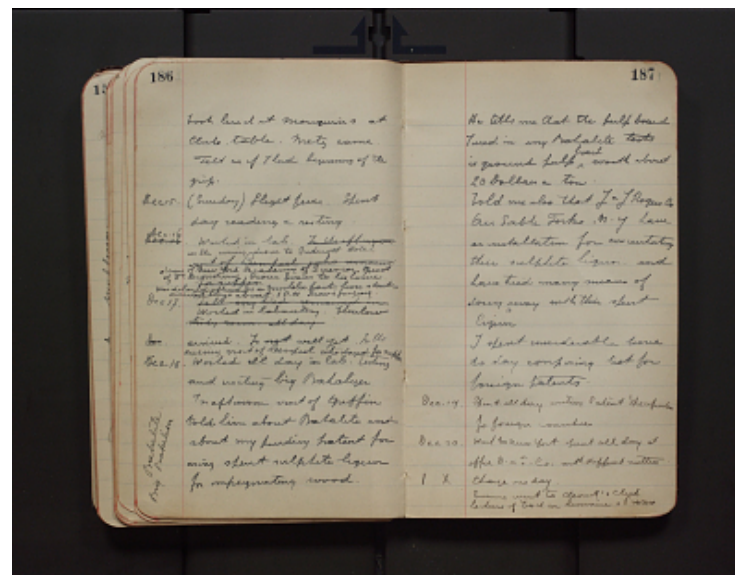
I spent considerable time today composing text for foreign patents.

Dec 19. Spent all day writing patent specifications for foreign countries

Dec 20. Went to New York. Spent all day at office D & F Co. with different matters. Charge one day.

Evening went to Chemist's Club. Lecture of Loch on Lumière's Process

[[end page]]



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[[left-hand page]]

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of color Photography. Samples shown are not so good as what I have seen in Berlin by Mickle's Process.

Dec 21. Wrote letters and foreign patent specifications. Evening meeting of Anvil Club at Hagerman's. Speaker: Dr. Tildsley. Currency system & money panics. Interesting paper and good discussion.

Dec 22. Spent morning in study room reading and patent specification writing.

[[margin notes: Cheneau]]

Afternoon visit of Cheneau who came to tell me that Pathé Frères are desirous to make their own films. Advised him to make connection with Anthony Scovill Co.

In evening went to call at Mr. Young's who promised me some more wood for my experiments.

[[end page]]

[[start page]]

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Pouring and warm rain all day.

Dec 23. Spent all day in lab. preparing bisulphite liquor for impregnation

Dec. 24. Spent all day in lab.

Dec. 25. Magnificent mild weather.

Happy day for the children.

Worked all morning in study room. At 12:30 Lewis drove Celine and myself to Manhattan Opera house. Les Contes de Hofmann. very well played. Had supper in New York and arrived home about 9 P.M

Dec 26. Worked in lab all day.

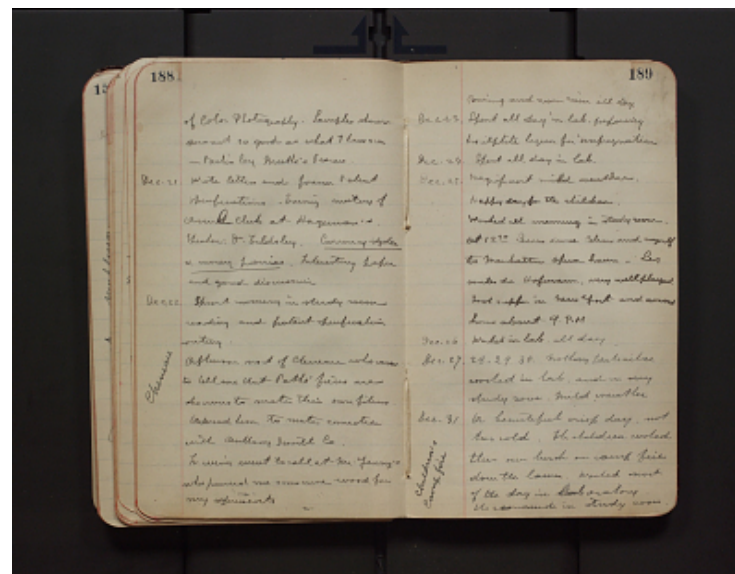
Dec 27. 28. 29. 30. Nothing particular

worked in lab. and in my study room. Mild weather.

Dec. 31 A beautiful crisp day. not too cold. The children cooked their own lunch on camp fire down the lawn. Worked most of the day in laboratory. The remainder in study room.

[[margin - children's Camp fire]]

[[end page]]



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[[margin note: Bill rendered to D. F. Co. from Oct 1. to Jan 1 = \$240.00]]  
and spent evening reading and went to bed about 10. P.M.

Jan 1. 1908. I had forgotten it was New Year to day. Did some work in my lab. Spent most of day in my study room. Mrs. DeMan and her niece for Lunch & Supper.

Drove them all home with motor car with Celine and the children.

Jan 2. Spent most of day in my study.

~~Jan 3-4~~

Jan 3. (Friday) Two hours at D & F. Co charge 1/3 day.

[[margin - x 1/3]]

Afternoon went to Lumfords studio. helped him packing his pictures.

Took supper with him and Dr. Peters at Mouquins. At noon took lunch

downtown at Mouquins with Evans and Dr. Hanemann

[[end page]]

[[start page]]

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Jan 4 Saturday - Evening meeting of Anvil club at Dr. Jenks, C. J. Cox, host. Williams lecturer: Modern Conception of matter. A good discussion.

Jan 5 Sunday. Busy all day translating patent specification for France.

Jan 6. Monday. Ditto. went to New York. Bank etc. D. & F. Co. charge 1/6 day.

[[margin - [1/6x]]

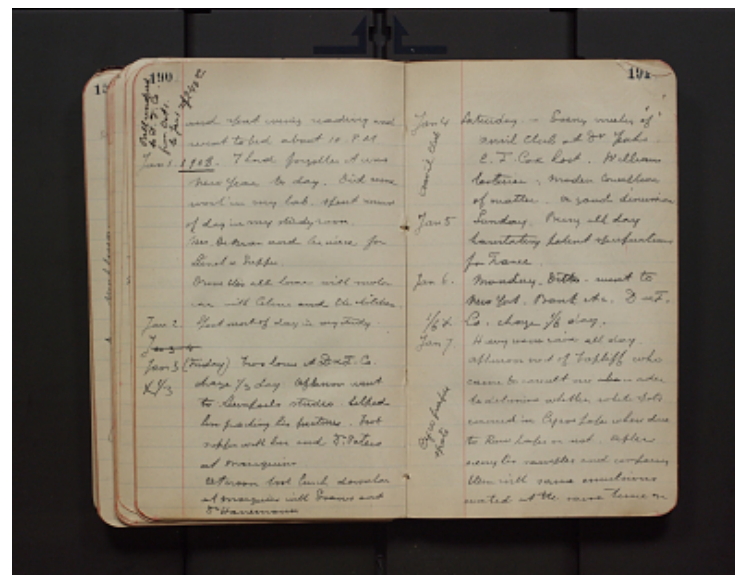
Jan 7. Heavy warm rain all day. Afternoon visit of Topliff who came to consult me ~~abo~~ in order to determine

whether white spots caused in Cyco paper where due to raw paper or not. After seeing his samples and comparing

them with some emulsions created at the same time on

[[margin - Cyco paper spots]]

[[end page]]



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other varieties of raw paper I conclude that the trouble lies with the raw paper which seems to have some defect (charge \$50.00 for interview)

[[margin - \$50.00]]

Same afternoon Seabury came here for Boonton Rubber Co to confer about using Bakelite showed him samples and referred him to Thurlow who will make further appointment. He seemed very much impressed with the possibilities of Bakelite for their enterprise.

[[margin - Seabury first visit]]

[[margin - Bakelite]]

Sent off letter & patent specifications to Thirion & Bournet. for Belgian & French patents.

Jan 8. Spent all day reworking english specification for Canadian & english patents then sent it off to Townsend

[[end page]]

[[start page]]

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Jan. 9. Worked in study room. all day

Jan 10 (Friday) Went to N.Y. office of D & F. Co stayed from 10 1/2 to 12. Then at 3 went to confer with Albert Hooker at Knickerbocker hotel where I remained until 6.P.M.

charge 1/2 day.

[[margin - 1/2 X]]

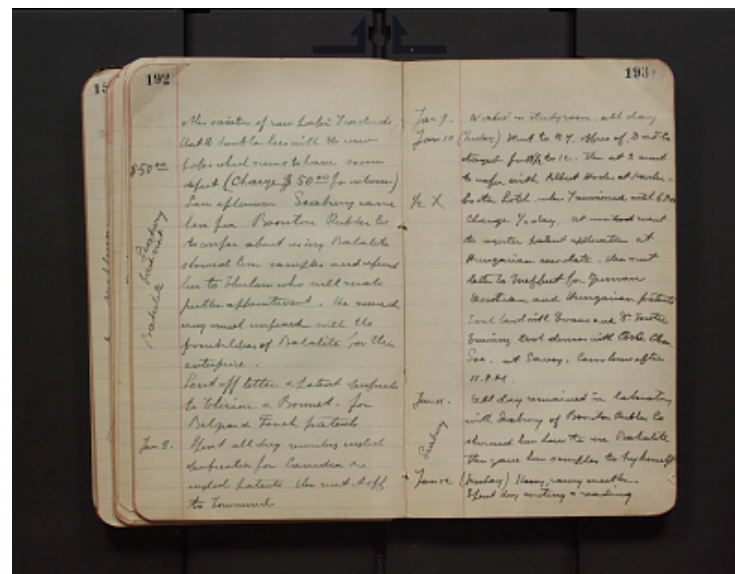
At noon ~~took~~ went to register patent application at Hungarian consulate. Then I sent letter to Meffert for German, Austrian and Hungarian patents. Took lunch with Evans and Dr. Foster. Evening took dinner with Am.Chem.Soc. at Savoy. Came home after 11.P.M.

Jan 11. All day remained in laboratory with Seabury of Boonton Rubber Co showed him how to use Bakelite then gave him samples to try himself.

[[margin - Seabury]]

Jan 12 (Sunday) Heavy, rainy weather. Spent day writing & reading

[[end page]]



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Jan 13. Spent all day in lab. Received billiard balls of Bakelite from Mali and letter telling they were too heavy and not elastic enough.

Letter from Norton Co telling they have not succeeded in making wheels hard enough. Billiard balls Grind stones

[[margin - Billiard balls Grind stones]]

Jan 14. (Tuesday) Worked in lab and study room

Jan 15. (Wednesday) Took early train to New York thence 9:15 to Worcester Mass to Norton Co. saw Jeppson, heir father. Allen general manager. They showed me result of tests. Probably did not mix well. Jeppson told me that Bakelite was not as hard as Shellac. I think their mixing and heating defective. Concluded it would be best to carry our experiments out in our lab. Took dinner at Andrew Higgins house. Took sleeper

[[margin - Grindstones Norton]]

[[/end page]]

[[start page]]

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to New York arrived there 6:30 A.M.

Jan 16. In morning went to office D & F Co. remained there until 11:30 A.M. Went to Yonkers. Had further consultation over telephone with E. H. Hooker. (Charge 1/3 day)

[[margin - 1/3 x]]

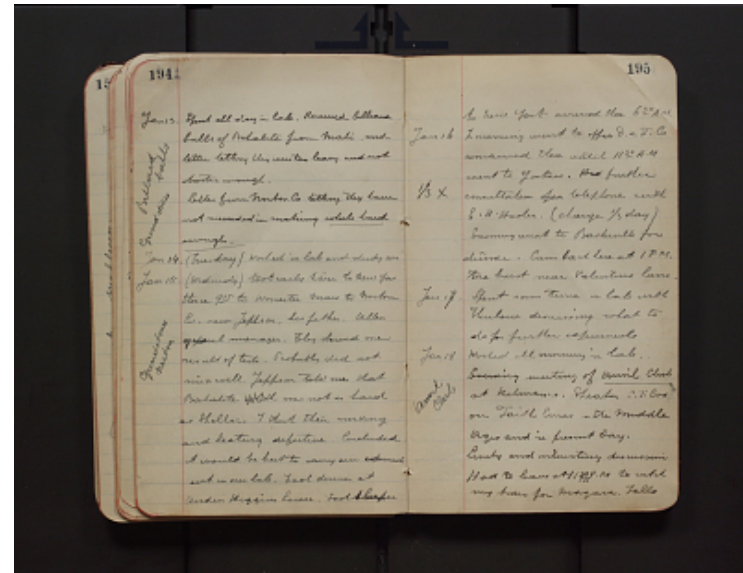
Evening went to Baskerville for dinner. Came back here at 1 P.M. Tire burst near Valentine lane.

Jan 17. Spent some time in lab with Thurlow discussing what to do for further experiments.

Jan 18 Worked all morning in lab. Evening meeting of Anvil Club at Kelman's. Speaker C.T. Cox on Faith Cures in the Middle Ages and in present day. Lively and interesting discussion. Had to leave at 11:30 P.M. to catch my train for Niagara. Falls

[[margin - Anvil Club]]

[[end page]]



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Jan 14 (Sunday) arrived at Niagara Project House at 1:00 P.M. Afternoon went to works of D & F Co. Met Burnham in charge. The dear chap was dressed like a scare crow trying to keep fire in old stove in office shanty.

[[margin - 1X]]

Evening met Block of Boonton Rubber Co. at Hotel kept on talking until 11 P.M. Christian Science philosophy of life. He is a Christian Scientist travels with pocket edition of Health & Science.

[[margin note: Express train & lunch & sleeper \$12.00]]

Jan 20. Spent all day at works. Studying diaphragm question.

[[margin - 1X]]

Windy evening. Thaw. Took walk alone to Prospect point. was the only visitor to the Falls. The only other man was the keeper of the point. he told me he once

[[end page]]

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was a wealthy man and owned property near Prospect House and had lost everything. Had traveled all over Europe etc etc. Have sent registered letter to mother with another check for \$130

[[margin - Next check to be sent about Feb 25 to arrive March 7]]

Jan 21. A busy day at the works. I am rather annoyed at the thought that the cell room should be so full of gas as to make it so hard for the workmen. Something must be done to overcome this.

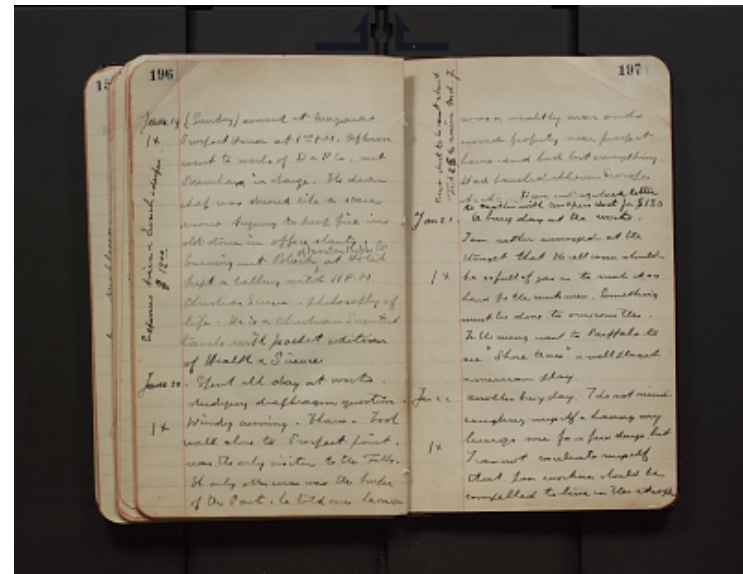
In the evening went to Buffalo to see "Shore Blues" a well played american play.

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Jan 22. Another busy day. I do not mind coughing myself or having my lungs sore for a few days, but I cannot conciliate myself that poor workmen should be compelled to live in this atmosphere.

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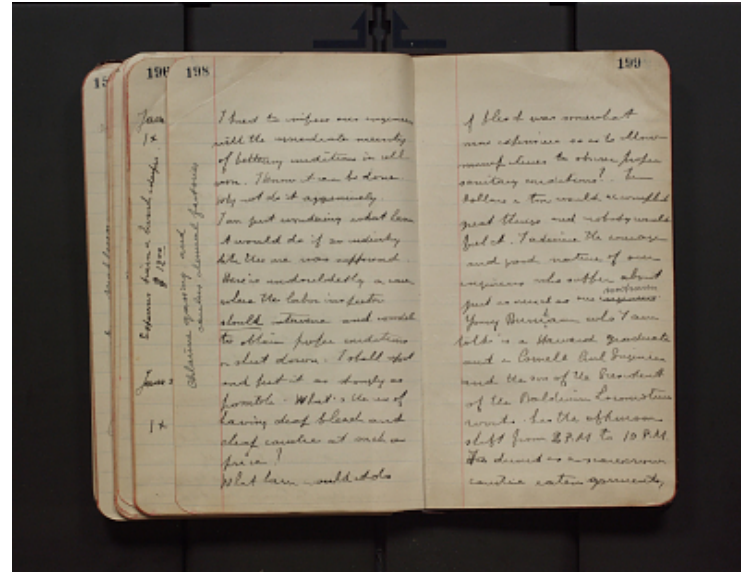
198

[[margin - chlorine gassing and careless chemical factories]]  
I had to impress our engineers with the immediate necessity of bettering conditions in cell room. I know it can be done. Why not do it aggressively. I am just wondering what harm it would do if an industry like this one was suppressed. Here is undoubtedly a case where the labor inspector should intervene and compel to obtain proper conditions or shut down. I shall report and put it as strongly as possible. What's the use of having cheap bleach and cheap caustic at such a price?  
What harm would it do  
[[end page]]

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if bleach was somewhat more expensive so as to allow manufactures to observe proper sanitary conditions? Ten dollars a ton would accomplish great things and nobody would feel it. I admire the courage and good nature of our engineers who suffer about just as much as our ~~engineers~~ workmen. Young Burnham who I am told is a Harvard graduate and a Cornell Civil Engineer and the son of the President of the Baldwin Locomotive works, has the afternoon shift from 2 P.M. to 10 P.M. Is dressed as a scarecrow caustic eaten garments,  
[[end page]]



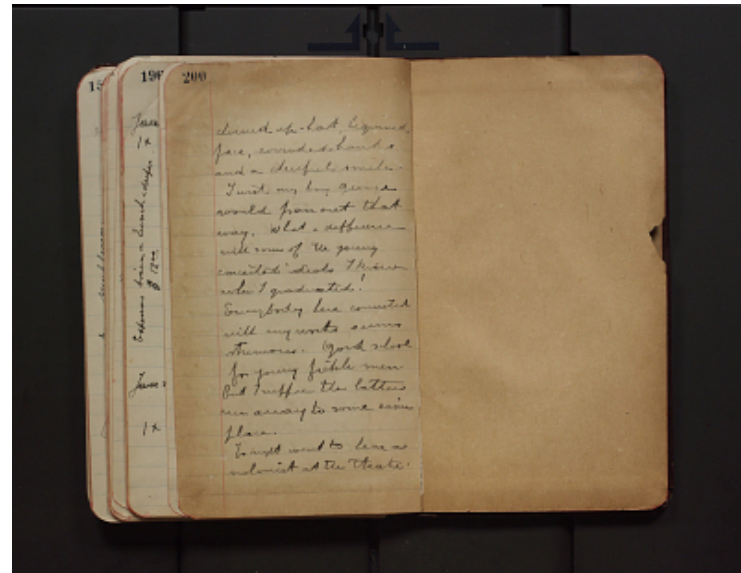
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chewed-up-hat, begrinned face, corroded hands and a cheerful smile. I wish my boy George would pan out that way. What a difference with some of the young conceited idiots I knew when I graduated!

Everybody here connected with any works seems strenuous. Good school for young fickle men. but I suppose the latter run away to some easier place.

Tonight went to hear a violinist at the Theater.  
[[/end page]]



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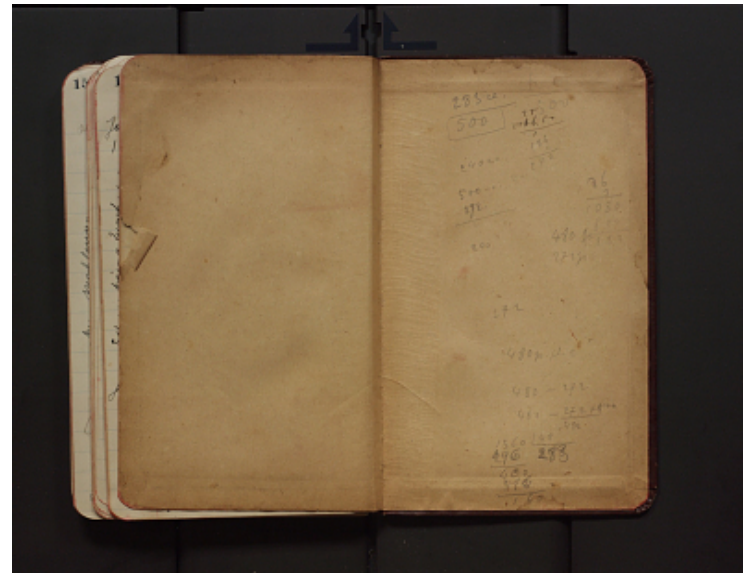
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