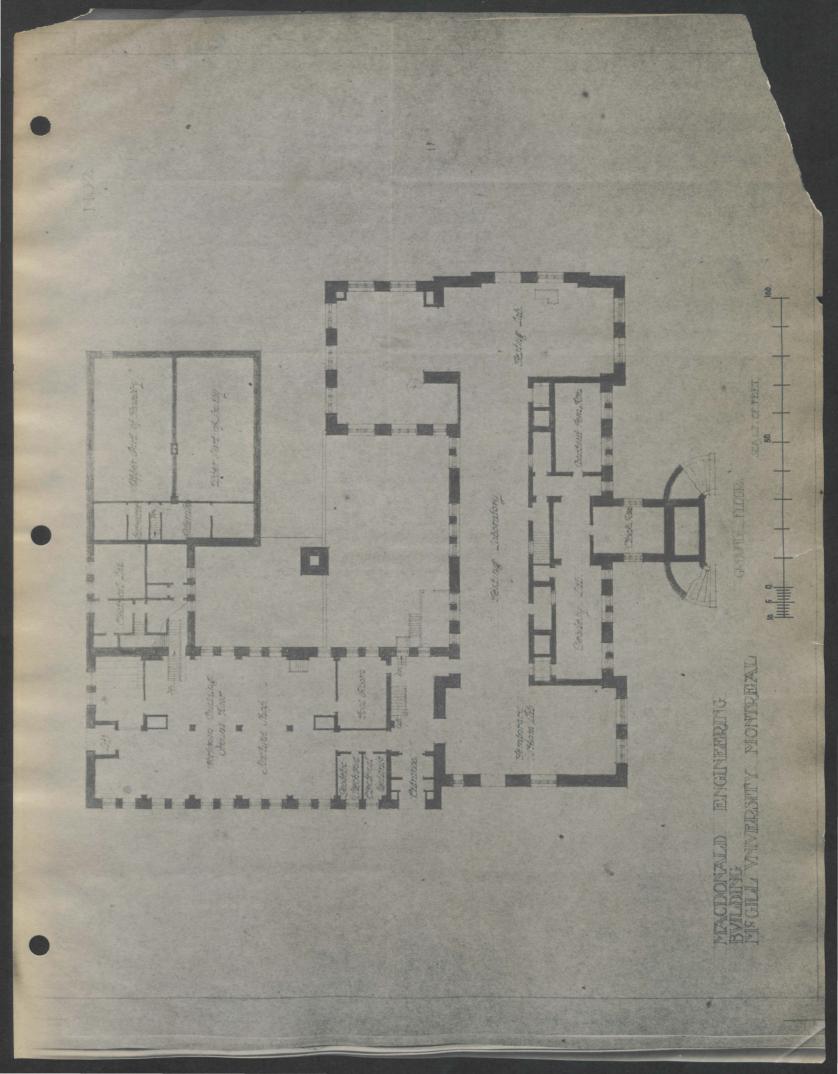
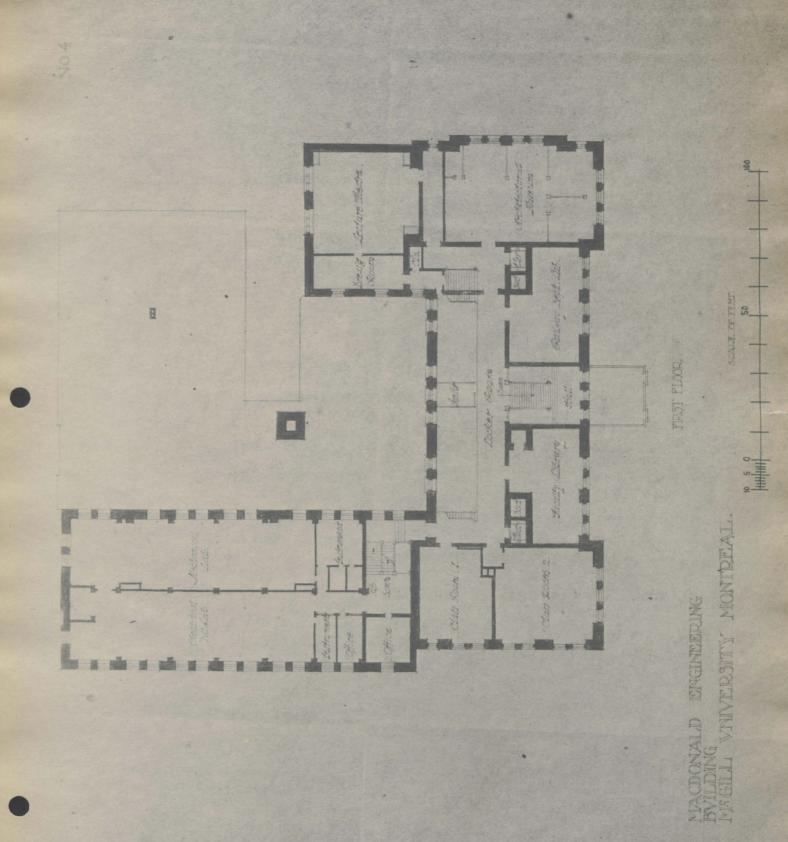


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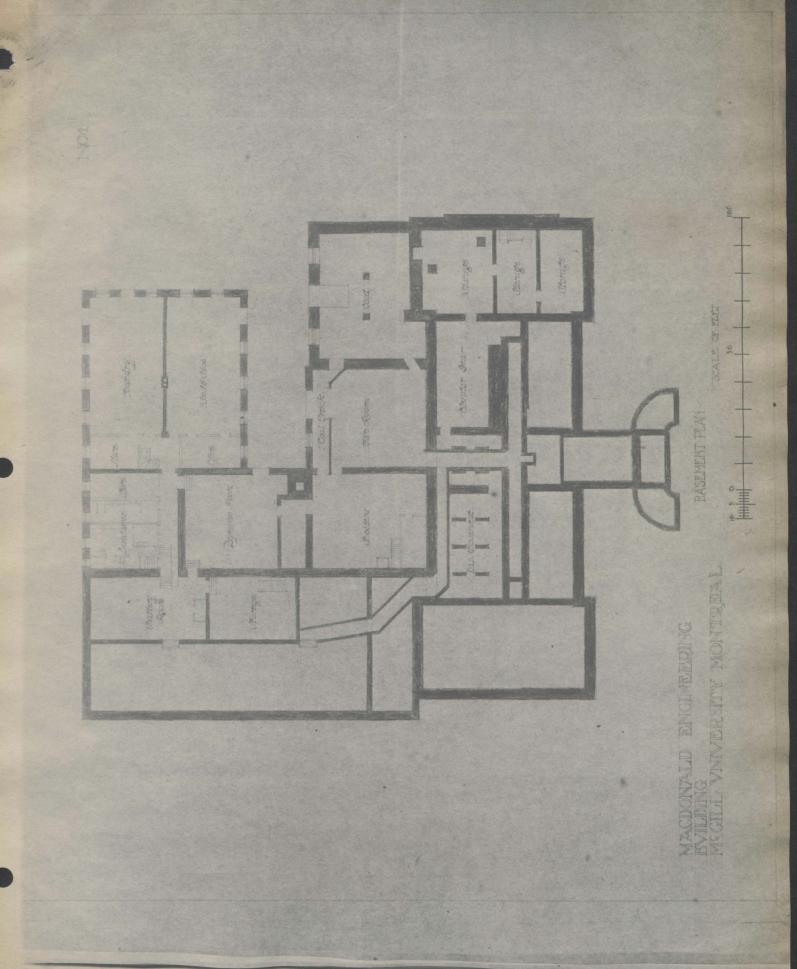


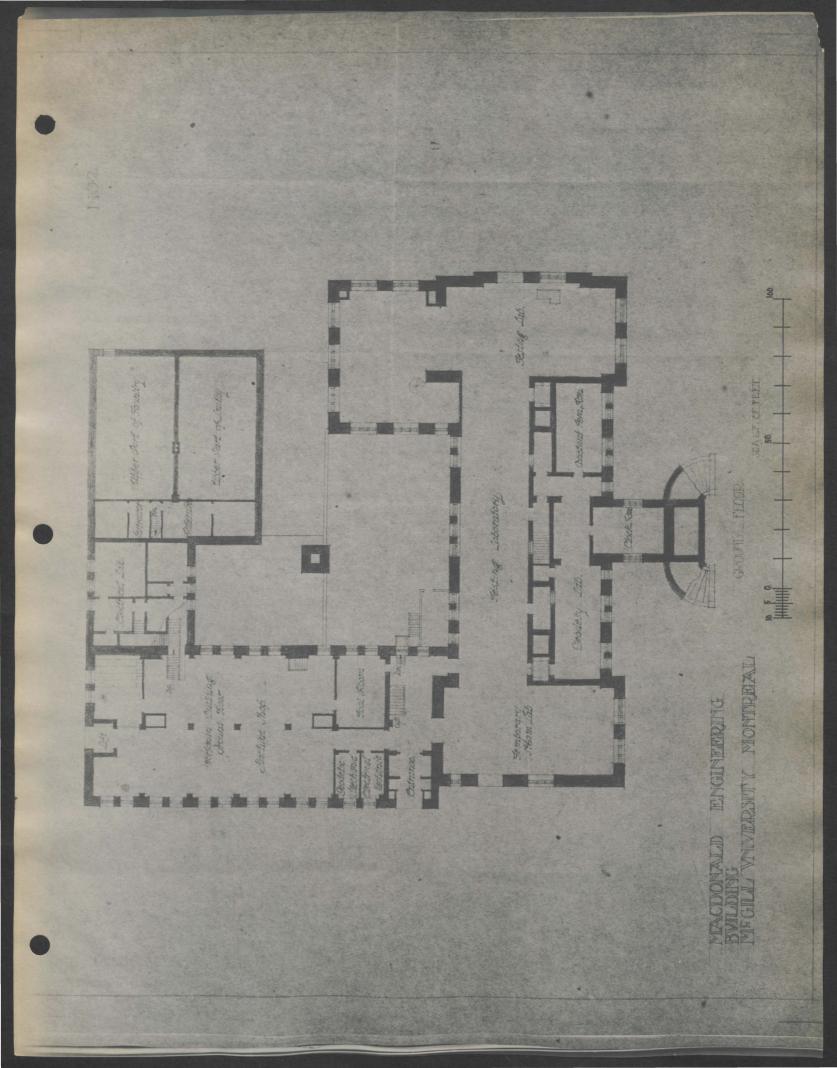
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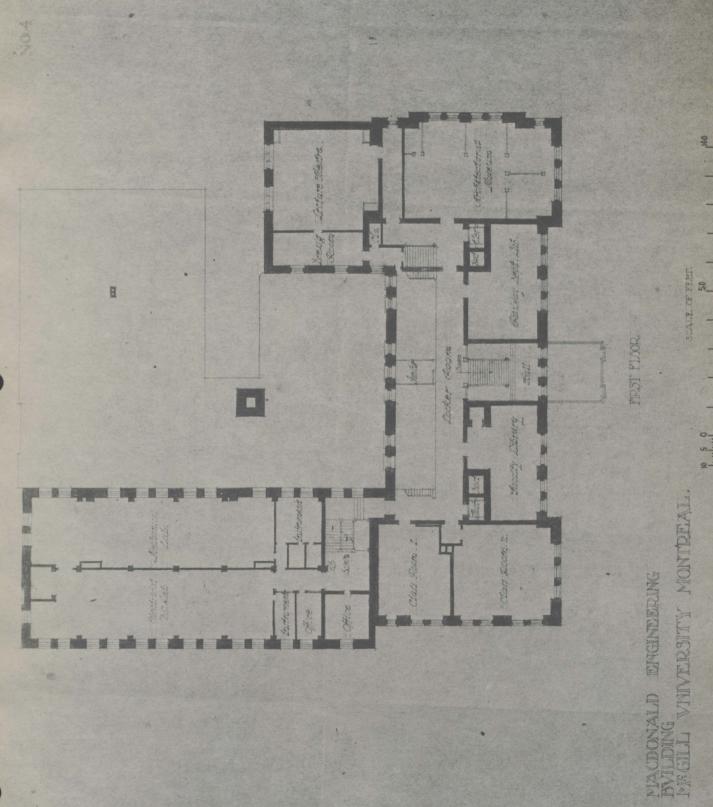
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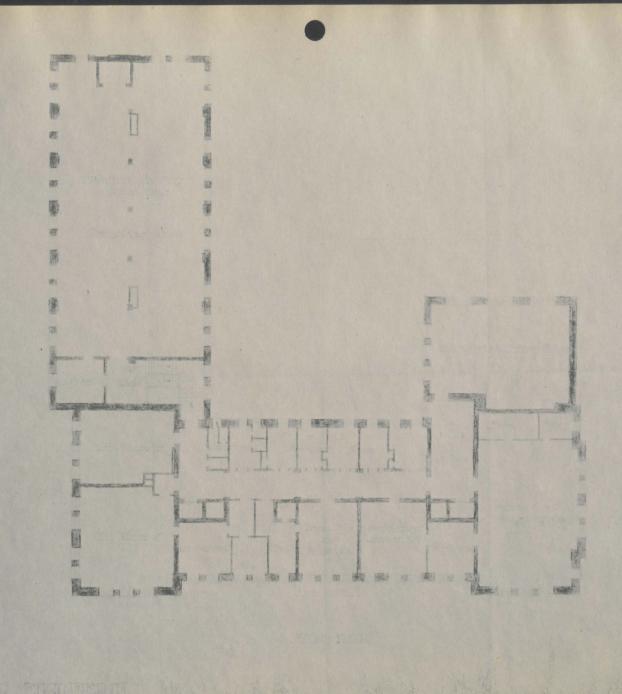
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FOURTH FLOOR PLACEONALD ENCHNEERING BVILDING PROBLE VNIVERSHTY MONTREAL

THE TECHNOLOGY REVIEW 491 BOYLSTON STREET, BOSTON January 3, 1911. Mr. John R. Freeman, 815 Banigan Building, Providence, R. I. Dear Mr. Freeman: -I wish to acknowledge and thank you for your favor of the 30th ult. in regard to class meetings. I shall take up the matter with Mr. Main as you suggest. The matter in question is collateral to Doctor. Maclaurin's argument which you and Mr. Main have already received and also certain interesting facts and statistics bearing on the Institute and its connection with state eic. I thank you for your suggestion in regard to Hodgdon and Pritchard. I think both of these men are now in the harness. I know Pritchard is, and is doing good work in Lynn. Our campaign, although a quiet one, is being pursued along scientific lines and I can conceive of nothing more thorough. Yours truly, IWL/TH.



Dear Mr. Freeman:

I must thank you for your note with reference to Babson:

As regards the Technology Congress, I should be greatly disappointed if we did not have the benefit of something from you, however brief.

Yours sincerely,
Richard Andlaurin

January 27, 1911.

Mr. J. R. Freeman,

814 Banigan Bldg.,

Brovidence, R. I.

## THE:SIMPLEX FLECTRICAL:

MANUFACTURERS OF INSULATED WIRES AND CABLES

201 DEVONSHIRE ST. BOSTON

January 9, 1911.

John R. Freeman, Esq., 815 Banigan Bldg., Providence, R.I.

Dear Mr. Freeman:-

As you may have heard, the Annual Grant of \$25,000 which the Institute of Technology has been receiving from the State of Massachusetts expires this year, and the Corporation of the Institute and the Alumni Association are now engaged in an active joint effort to obtain the passage of a bill by the incoming Legislature which will provide for the appropriation by the State of the sum of \$100,000. per year for ten years, the money to be used for the general purposes of the Institute.

The actual work of effectively presenting this matter to the Legislators, both individually and collectively, will involve the aid of practically every Former Student residing in Massachusetts. This Campaign will require money, and it is proposed to raise this money by asking a certain picked body of Former Students residing outside of Massachusetts to contribute \$5.00 each towards the amount required. It is believed that such men as are unable to aid the work more directly, will be glad to thus show their interest in this most important undertaking.

Will you contribute \$5.00 towards paying the legitimate expenses of this effort to raise a Million Dollars for the Institute?

Please address your reply and make remittance payable to Jasper Whiting, Treasurer, 131 State Street, Boston, Mass.

Yours very truly,

Janpa Whiting 89
Henry Cent Morse '83
Michigan '85

Finance Committee on State Aid.

Civil Engineering Suriety
of the Massuchusetts Justitute of Jechnology
491 BOYLSTON STREET

BOSTON, January 23,1911, 191

Mr. John R. Freeman,

Providence, R.I.

Dear sir:-

The C.E. Society of M.I.T. would like to know if you could arrange to address them at their annual banquet which will probably be held on the evening of May 5 at the Hotel Lenox.

The other speakers will probably be Mr. Thos. W. Lawson, Mr. L. K. Rourke, the head of Boston's new Public Works Department, and Mr. John F. O'Rourke, the New York contractor.

If this time is not convenient for you, we would like to know what other time would be suitable, either in the evening or at 4:15 in the afternoon between now and April 15.

Very truly yours,

Isaac Hausman

Pres. C.E. Soc., M.I.T.

Date

Sheet No.

Jacapy N26, 1911.

Personal.

Mass. Institute of Technology,

Boston, Mass.

My dear Pres. Maclaurin: -

In reference to your question of Monday evening I enclose for your inspection and return a personal note from my good friend Swain, in whose judgment of men and things I have great confidence.

Regarding my taking part in the Technology Congress, I will consider the matter most carefully, but just now I shrink from promising any new effort in any line, for I am over-loaded and am seeking release from present engagements.

Very truly yours,

John R. Freeman.

JRF/E.

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Enclosure.

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Espy No. 7, 1911.

William R. Miller, Clerk,

Alumni Association,

Mass. Institute of Technology, Boston, Mass.

Dear Sir:-

Replying to your circular letter of Feb. 3rd, asking if I cared for two numbers of the Technlogy Review, would say that I am sorry to see even a single number of so good a publication wasted and a single copy serves my purpose.

What is the practice about sending copies of this to various University Clubs and engineering societies for the table of their respective reading rooms?

Very truly yours,

John R. Freeman.

JRF/E.

luriular letter not filed.

THE TECHNOLOGY REVIEW 491 BOYLSTON STREET BOSTON no aus February 9, 1911. Mr. John R. Freeman, 814 Banigan Bldg., Providence, R. I. My dear Mr. Freeman: -I thank you for your note of the 7th inst. regarding extra copies of the Technology Review. I note your inquiry about sending copies to clubs and societies and in reply would say that it has been our custom in the past to send copies freely, but we have been curtailing the list recently because of the increase in our expenses. We should be glad, however, to send to any socities of importance, or to any which you may suggest. Yours very truly, M. R. Miller MM/TH. Clerk.

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€ pylno. 13, 1911.

William Lyman Underwood,

Belmont, Mass.

Dear Mr. Underwood: -

Enclosed please find promised letter of introduction to Mr. George F. Miles, General Manager Florida East Coast Canal Company, St. Augustine.

Mr. Miles has been in local charge of this canal work for some fifteen or twenty years and has an amoeptionally wide acquaintance in the State, and you will find him a most pleasant acquaintance. I am sure it would give him pleasure to aid you in your nature studies.

Very truly yours,

John R. Freeman.

JRF/E.

Enclosure.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, BOSTON, MASS. Feb. 15,1911. John R. Freeman, Esq., Banigan Building, Providence. R. I. Dear Mr. Freeman: - I thank you very much for your kind letter of introduction to Mr. Miles which I received in this morning's mail. If I go to St. Augustine, it will be of great use to me. Very sincerely yours.

I hope you were able to come to a satisfactory conclusion the other day with Professor Derr in regard to the lens.

Dictated.

Verlyman lendenvood

- Jachanne X

[Reprinted from Science, N. S., Vol. XXXIII., No. 838, Pages 101-103, January 20, 1911]

## EDUCATIONAL AND INDUSTRIAL EFFICIENCY

THE latest bulletin of the Carnegie Foundation has many attractive features. The report has evidently been made up in a spirit of good will to education, and any sting that it may contain should be removed by the admirable introduction by Dr. Pritchett. In the course of more than a hundred and thirty large pages the author, Mr. Cooke, makes a number of excellent suggestions, which are none the less excellent because of their lack of novelty. He is aware that the charge of Philistinism might easily be suggested by the tenor of his remarks and he makes some effort to protect himself accordingly. His peculiar point of view seems to give undue prominence to "the cost per student hour," but although we hear much of this phrase in the report we are distinctly told in one place that "It should be borne in mind that the cost per studenthour has absolutely no value in distinguishing relative educational values." If this had been placed as a headline to all the pages, it would have greatly improved the value of the report, and would have been in harmony with this other admirable sentence which might with equal propriety have been inserted as a foot-note to every page: "In the last analysis the usefulness of a university is the measure of its mental, moral and spiritual productand product interpreted as broadly as you please."

However, although there is much that is excellent in the report, it has many weaknesses. It is written from the point of view of the man who is used to report on the efficiency of a glue factory or soap works. Whenever it touches the strictly educational field and gets away from the factory the trail of the ama-

teur is over it all. It is full of commonplaces, and there is scarcely a question raised that has not been discussed ad nauseam by college professors and other officers. It is not lacking in confidence. One marvels at the temerity even of an "efficiency engineer" who can lay down the law so definitely as to how to teach physics, how to conduct a recitation, how to carry on research, when most of us who have devoted our whole lives to such problems are far less confident. There are, however, here and there some pleasing evidences of diffidence. In discussing the important educational problem of janitor service Mr. Cooke says, "A sharp line should be drawn, probably, between the cleaning of the buildings and the care of apparatus." The use of the word "probably" is a master-stroke. It conjures up pleasing pictures of janitors handling the delicate instruments of a physical laboratory just as they furbish the brass plates of a glue factory—if indeed "the snap and vigor of the business administrator" which Mr. Cooke admires so much decree that such things are a necessary adjunct to the dignity of the factory. Almost on a par with this use of "probably" is the statement that "There is a good deal of the feeling that lectures to be good must in a way bear the marks of the inspiration of the moment. But a good many men who have the reputation of being high authorities assured me that the carefully thought out plan for a series of lectures would win out every time over the inspiration of the moment idea." Of course they assured Mr. Cooke of this, but they must have smiled at the naïveté of the question and wondered who ever suggested that the presentation of a scientific subject be left "to the inspiration of the moment."

The report shows many evidences of ignorance of the history of education. It suggests as novelties plans that have been tried for centuries and abandoned only after careful consideration. Such, for example, is the suggestion that the rules for the conduct of the students and the punishments for their breach should be put into precise form. The collection of such rules from the archives of the older universities would fill many volumes. Again he says, "It may turn out that ultimately the matter of examinations will be handled by an agency outside of the department." This, to his vision, is a far-off divine event to which the whole educational creation is moving. If so, it is moving backwards.

Mr. Cooke's remarks on the economic use of rooms and buildings are, for the most part, eminently sensible, although he contributes nothing new to the discussion of a very old problem. His economic sense is shocked on learning that a lecture room in the department of physics is used only four hours a day, just as it must be shocked when a church is used only a few hours a week, or a life belt only when it is actually needed. In some of his criticisms under this heading he seems to forget that colleges have to make the best of the materials that are available and that in many cases an apparently uneconomic use of rooms is forced upon them because their buildings are old, or were designed for other purposes than those to which they have now to be put. He commends one institution for a space-saving device and wonders that it is not adopted in all departments, the fact being that the newer buildings were designed for its use, but the older ones were so constructed that its adoption there would not have been a real economy.

Mr. Cooke displays unusual weakness when he takes up the subject of research. Indeed most of what he says on this subject must be received with that mixture of astonishment and embarrassment with which we listen to the words of a distinguished friend who pronounces an absurd judgment on an important

subject that he has evidently not mastered. Listen to this. "I believe there is a distinct disadvantage to undergraduate students to be near research work. I think in the case of physics research workers, their good influence is more often offset by the introduction into the undergraduate laboratories of the necessarily deliberate and experimental methods of the research laboratory"!! How unfortunate if "deliberation" and the "experimental method" should contaminate the laboratories -it might detract from the "snap and vigor" of these promising undergraduates. And yet one wonders what possible use there can be in teaching physics at all, if so much care is to be taken to guard the students from catching its spirit and grasping its method. We, in our ignorance, had imagined that the method and the spirit of science were its very essence, especially where undergraduate learning is concerned. We should have accounted any system of education that failed to recognize this as but so much dross and dung (if, at this season, a Scriptural phrase may be permitted) even if it resulted in every undergraduate gaining 100 per cent. in the examinations conducted by Mr. Cooke's "bureau of inspection."

Perhaps enough has been said to indicate that there are serious blemishes in this bulletin. If, however, it be taken for just what it is worth, it can do no harm and may do much good. We should regard as a friend every one who helps us to improve our methods and if this report enables us to keep our accounts better, or make a more economical use of our machinery, of course it will be heartily welcomed. The most serious objection that I see to it lies in its abuse rather than its legitimate use. I fear that it will tend to increase the administrative machinery of our educational institutions, machinery that is already far too much in evidence. When one listens to all the criticism of our colleges and thinks of the great things that have been accomplished elsewhere with so little machinery and so little noise, one wonders whether it might not be better for us also to settle down to quiet work. Then I confess that all this talk of "cost per student

hour" strains my patience to the limit, especially when it is presented under the heading "gauge of efficiency." Mr. Cooke frankly less recognizes its usefulness to this end, but others may be led astray by the specious analogy with the workings of a factory. A college that had reached the acme of perfection as gauged by Mr. Cooke's standards might be highly inefficient as an instrument of real education. Mr. Cooke tells us that in studying the colleges he has constantly held in mind "the equivalent mechanism" used in the industrial world and apparently he looks forward with pious expectation to the day when our colleges will run with the uniformity of looms in a mill. Granting with Mr. Cooke that there is much that the administrators may learn from the mill manager, it is to be hoped that enlightened public opinion will never permit us to forget that in all matters that are really vital to education there is no "equivalent mechanism" in the industrial world. We are not making shoes or bricks or cloth, but are dealing with material of the utmost complexity and variety, with no two specimens quite the same and no two that need just the same treatment. Uniformity in the product is not only unattainable, it is not even desirable, and factory methods are entirely out of place. If we neglect the human factors in our education we are lost and we can not overlook the fact that, without such bulletins as this, there are already plenty of forces at work to give sufficient prominence to mechanical conceptions

and mechanical tests. Nor does it require any special effort in this country to stimulate admiration for the "snap and vigor of the business administrator," while the value of snap in the domain of education may very easily be overestimated. Especially am I fearful of its effect on the teacher and the investigator. His path is not too smooth already and even now there are many forces drawing him from the educational sphere where best he can serve society. Think for a moment of the effect on men like Newton or Faraday of the "snap and vigor" treatment that Mr. Cooke suggests in his discussion of research. They must make frequent reports on the progress of their research and constantly justify the expenditure thereon. The superintendent of buildings and grounds, or other competent authority, calls upon Mr. Newton.

Supt. Your theory of gravitation is hanging fire unduly. The director insists on a finished report, filed in his office by 9 A.M. Monday next; summarized on one page; type-written, and the main points underlined. Also a careful estimate of the cost of the research per student-hour.

Newton. But there is one difficulty that has been puzzling me for fourteen years, and I am not quite . . .

Supt. (with snap and vigor). Guess you had better overcome that difficulty by Monday morning or quit.

R. C. MACLAURIN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY December 24, 1910 And and the strength of the best and the

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Copy No.

February 18th, 1911.

Professor Chandler,

Architectural Department,

Mass. Institute of Technology,

Besten, Mass.

My dear Prof. Chandler:-

Does your library possess a copy of the three big volumes on modern opera houses and theatres written by Mr. Edwin O. Sachs? I bought a copy of this "monumental work" inadvertantly when I was studying the safeguarding of life in theatres. My recollection is that including duty it cost me something like \$125, and the apparent cheerfulness with which I paid the bill may be taken as proof of my ability to take a joke.

I cabled the author, who is one of the most prominent members of the British Fire Prevention Society, to send me all of the best books on theatre construction.

I write this letter because of my disposition to donate the volumes to your library.

Should it prove that you have a copy, perhaps it might be useful to them here in Providence at the School of Design.

Very truly yours,

John R. Freeman.

JRF/E.

MASSACHUSETTS\* INSTITUTE OF TECHNOLOGY, DEPARTMENT OF ARCHITECTURE, 30 TRINITY PLACE, BOSTON, MASS.

February 21, 1911.

Mr. John R. Freeman,
Banigan Building,
Providence, R. I.

My dear Mr. Freeman:

I am just back from Bermuda or I should have answered your kind note of February 18 before this. We have those three big volumes on Modern Opera Houses, written by Mr. Edwin O. Sachs. They were given us a long time ago while President Walker was here; I believe by Mrs. Henry Draper of New York.

I thank you for considering our library in this matter.

Very truly yours,

F.W. Chanden

LOWIS DERR
MASSACHUSETTS
INSTITUTE OF TECHNOLOGY
BOSTON, MASS

Feb. 21, 1911.

John R. Freeman, Esq., Associated Factory Mutual Fire Insurance Companies, 31 Milk St., Boston.

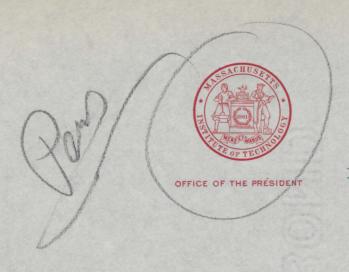
My Dear Sir,

On behalf of the Department of Physics, I thank you heartily for the very serviceable package of logarithmic plotting paper received yesterday. The assortment of papers and printings is a most useful one, and every sheet will do good service.

With full appreciation of your kind thoughtfulness, I am

Very truly yours,

Louis Den



February 28, 1911.

Dear Sir:

In accordance with the vote of the Corporation passed on December 12, 1906, requiring the abstracts of the proceedings of the Executive Committee be sent to all members of the Corporation, I desire to inform you that the following actions have been taken by that Committee since the last meeting of the Corporation.

December 23,1910: It was voted that Mr. Jasper Whiting be appointed a special commissioner to inquire into the conditions of education abroad in architecture and the various branches of engineering and applied science that are dealt with at the Institute, to ascertain what modifications of its courses would be desirable to meet the special needs of foreign students and generally to extend the range of its influence.

January 20, 1911: It was voted that the Committee appointed to secure the removal of the restrictions on the Boylston Street property of the Institute be authorized to employ counsel and take such other steps as are necessary to secure a registration of title.

February 10,1911: A check for \$6,000 towards the support of the Sanitary Research Laboratory and Sewage Experiment Station was received through Professor Sedgwick. It was voted that Professor Sedgwick be asked to convey to the donor the Executive Committee's appreciation of the continued generosity that this gift indicates.

Yours sincerely,

Richard C. Maclaurin,
President.

Copy No.

Sheet No.

March 1st,,1911.

Frderic P. Stearns, Consulting Engineer,

No. 1 Ashburton Place,

Boston, Mass.

My dear Stearns:-

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I want to express my gratitude to you for the strong and kindly words you said before the Massachusetts Legislative Committee on February 7th regarding a grant to the Institute.

I concur most heartily in your views regarding the remarkable expansion of engineering and the demand for educating an increased number of engineers. I remember well that just about thirty-five years ago I was spending my afternoons in the City Engineer's office, Boston, tracing a lot of drawings of the Broadway drawbridge, in preparation for my thesis "a learned treatise" on The Continuous Girder problem. Billy Coombs, Thayer and Gustafson took me into their confidence that the Institute was killing the engineering business by turning out so many more than the country needed.

On the other hand, a few days ago I was lunching with my friend Louis D. Brandeis, the lawyer, and he enlarged on the ever widening field for the engineer and that the scientific business administration of railroads and all sorts of public utilities and businesses would seen become special fields for engineering.

A feature of your remarks that pleases me particularly is your reference to the good work of Professors Nichols, Drowne, and Sedgwick.

In Germany three years ago and again last year, I was profoundly impressed with the marvelous advance of Germany not only in all the arts, but in caring for the health of its citizens and in making certain that the children of the working people should be reared in sanitary surroundings and thereby given a fair start in life, and I firmly believe that it is the appreciation of scientific education which is fast putting Germany in the forefront of the world.

Once more, I want to thank you for your good will and your carnest effort.

Sincerely yours,

John R. Freeman.

JRF/H.

March 1st, 1911.

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Frderic P. Stearns, Consulting Engineer,

No. 1 Ashburton Place,

Boston, Mass.

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Once more, I want to thank you for your good will and your earnest effort.

Sincerely yours,

John R. Freeman.

JRF/E.

6M. DEC. 1, 1910

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Copy No.

March 1st, 1911.

Isaac Hausman, President,

Civil Engineering Society.

Mass. Institute of Technology.

Boston, Mass.

My dear Mr. Hausman: -

I most humbly apologize for my delay in answering your very kind invitation of January 3rd. The fact is that at
the time this was received I was absent in the West and your letter
got slipped in between some other papers on my desk and has only
been discovered this morning.

Since more than a month has gone by I presume you have arranged your program for the evening of May 5th.

I really feel guilty at having failed to accept not only your invitation but that of certain of your predecessors, but it has happened each time that I have been absent or under special pressure.

I hope that I may yet find an opportunity to meet with the members of your society and I beg to assure you that my interest in your good work is strong and that I am very appreciative of the good accomplished at Technology by the undergraduate technical societies.

Very truly yours,

John R. Freeman.

JRF/E.

Born The An

## M. I. T.

The Annual Meeting of the Technology Club of Rhode Island will be held on Saturday, March twenty-fifth, nineteen hundred eleven at 6.30 P. M., at the Crown Hotel, 208 Weybosset Street.

We expect the following speakers:

Lieutenant-Governor Bliss President Arthur A. Noyes Mr. John R. Freeman Mr. T. W. Littlefield

Dinner will be served promptly at 7 o'clock. Expense, \$2.00 each.

Come early and bring any M. I. T. man who happens to be in town that evening.

Please mail enclosed postal stating whether you will or will not be present.

TECHNOLOGY CLUB OF R. I.

WILLIAM C. DART,

Providence, R. I., March 18, 1911. Secretary.



Dear Mr. Freeman:

I am still hoping that you may find time to write something, however brief, for the Congress of Technology, or, if you can not find time for writing, that you will be present and speak, though briefly. We are anxious to make the occasion a notable one, and shall be much disappointed if the more prominent of our alumni refrain from taking part in the proceedings.

Yours sincerely,

Richard Charlannin

March 15, 1911.

Mr. John R. Freeman,

815 Banigan Building,

Providence, R. I.