CIHM
Microfiche
Series
(Monographs)

ICMH
Collection de
microfiches
(monographies)

Canadien Institute fo(Historical Microreproductions / Institut canadien de microreproductions historiques

Technical and Bibliographic Notes / Notes technique et bibliographiques

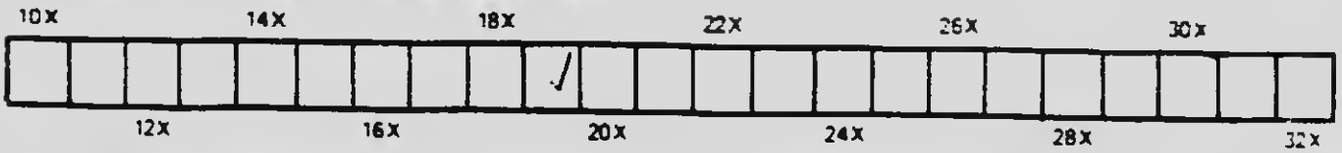
The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming are checked below.

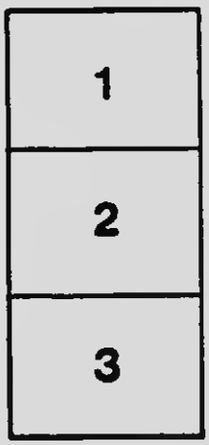
- [x] Coloured covers / Couverture de couleur
- [ ] Covers damaged / Couverture endommagée
- [ ] Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- [ ] Cover title missing / Le titre de couverture manque
- [ ] Coloured maps / Cartes géographiques en couleur
- [x] Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- [x] Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- [ ] Bound with other material / Relié avec d'autres documents
- [ ] Only edition available / Seule édition disponible
- [ ] Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.
- [ ] Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from filming / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- [ ] Additional comments / Commentaires supplémentaires:

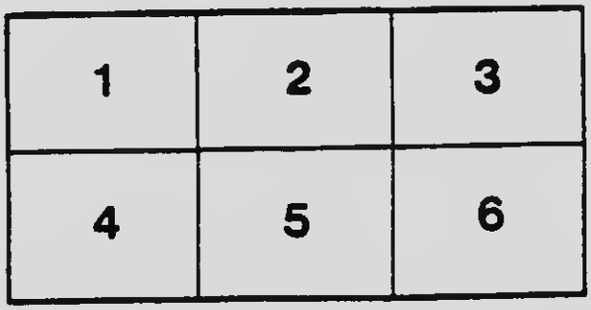
L'Institut a microfilmé le meilleur examplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modifications dans la méthode normale de filmage sont indiqués ci-dessous.

- [ ] Coloured pages / Pages de couleur
- [ ] Pages damaged / Pages endommagées
- [ ] Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- [x] Pages discoloured, stained or foxed / Pages décolorées, tachetées ou piquées
- [x] Pages detached / Pages détachées
- [x] Showthrough / Transparence
- [ ] Quality of print varies / Qualité inégale de l'impression
- [ ] Includes supplementary material / Comprend du matériel supplémentaire
- [ ] Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image / Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.
- [ ] Qpposing pages with varying colouration or discolourations are filmed twice to ensure the best possible image / Les pages s'opposant ayant des colorations variables ou des décolorations sont filmées deux fois afin d'obtenir la meilleur image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.







12.

PETITION

of the Undergraduates

...of the...

Ontario School of Practical Science

presented
to the

LIEUT.-GOVERNOR-IN-COUNCIL

MARCH 6th, 1901.

To the Honourable SIR OLIVER MOWAT, G.C.M.G., Lieutenant Governor of the Province, and the Members of the Executive Council of the Province.

THE PETITION OF THE UNDERSIGNED UNDERGRADUATES AND POST-GRADUATES OF THE ONTARIO SCHOOL OF PRACTICAL SCIENCE, TORONTO, HUMBLY SHEWETH : —

THAT WHEREAS, the immense development work which is taking place in Ontario and the rest of Canada at present, is creating a demand for carefully trained and skilled engineers for the purposes of railroad construction and operation in all their branches ; the development of water-powers and the enormous mineral wealth of the country ; the building of canals ; the working out of chemical problems and their application to the manufacturing industries ; the laying out of towns, etc. This has largely increased the attendance at the Ontario School of Practical Science, which has resulted in the last two or three years in much overcrowding in the drafting rooms, and chemical, mining, electrical and mechanical laboratories. If the rate of increase which has occurred in the last few years is maintained, the class which may be expected next October will render the staff and building quite incapable of accommodating the student body. The present building is defective in that it affords very poor light and ventilation in the drafting rooms. The regular drafting rooms having proved too small at the beginning of this term the present first year are occupying the Assembly Hall of the School, which thus deprives the School of this necessary adjunct. The present

library and reading-room which is furnished by the under graduates with current numbers of the engineering journals, has only accommodation for about twenty students, while there is in attendance 226 students. The library is very meagrely supplied with up-to-date books on the different branches of engineering, and as this class of books is not found on the shelves of the University Library, the students are deprived of a great advantage.

The Chemical Laboratories are so small that classes have to be divided and sub-divided in order to be accommodated; the teaching has to be repeated in some cases four times and the students receive only a portion of the laboratory training which is called for in the curriculum. The Mining and Assaying Laboratories are deplorably small, and the same sub-dividing of classes has to be resorted to as in the case of the Chemical Laboratories.

And Whereas, the proper equipment of a mining department should include up-to-date plant and machinery such as a blast furnace, a reverberatory furnace, stamp mills, vanners, hydraulic classifiers, electric separators, models of shafting and tunnelling, diamond drills, etc., which are represented in the School by one small stamp mill, a Frue vanner, and a small crusher.

And Whereas, in the Chemical Laboratories the lack of balances is a serious handicap to the large classes which require to use them, there being as many as fourteen students for each balance in some of the years; this again has the effect of depriving the students of a part of the time supposed to be used in the laboratories.

And Whereas, in the Mechanical and Electrical Laboratories new machinery is badly needed, for example, in the Steam Engine Laboratory a 180 pound pressure, cross compound engine with experimental appliances including a high pressure boiler and an economizer and superheater would be a valuable addition in investigating modern engineering problems. A small triple expansion engine would also

exemplify marine engineering practice. In the Dynamo Room an up-to-date polyphase generator and motor with necessary switch-board appliances would instruct the student in this important modern branch of electricity? The Galvanometer Laboratory is quite inadequate to accommodate the increasing number of students. As in other departments the classes are sub-divided and do not receive sufficient time or instruction. The room being in the basement and unheated is not conducive to the best results from the students' investigation.

The importance of the undeveloped water-powers of Ontario cannot be over estimated. The successful hydraulic engineer must keep abreast of the times on account of the rapid strides which hydraulics is making, and to do this the Hydraulic Laboratory requires many improvements and additions to render it efficient.

And Whereas, the teaching staff is only one half as large as is found necessary for a similar number of students at other engineering colleges, the professors and lecturers are unable to give to the students that personal attention which is so necessary in the teaching of scientific subjects and sufficient time is not at the disposal of the staff for the preparation of experiments to illustrate lectures.

And Whereas, on account of insufficient accommodation, small teaching staff and poor experimental equipment, it has become generally known that the Ontario School of Practical Science cannot do justice to as large a number of students as is now in attendance and numbers of Ontario's young men are yearly compelled to enter American engineering colleges for an education which their own country denies them; and since the future of Ontario depends largely upon the successful development of her mineral and forest wealth; and since it is now certain that a large part of the world's supply of iron will soon be drawn from our Ontario deposits and manufactured in our province; and since Great Britain is now awakening to the fact that her commercial supremacy

is being wrested from her by nations who have paid close attention to scientific study ; it becomes increasingly important that the very best technical education be available to the people of Ontario to advance the numerous industrial enterprises now being undertaken in our province. And your Petitioners would further point out that if the School is not strengthened in all its departments **immediately** so as to keep abreast of the engineering projects of the day, the men graduating from the School of Science will not have had the facilities for close study to enable them to hold their own with engineers from the United States and other countries, and thus the most responsible positions on Canadian engineering work will go to foreigners.

WHEREFORE, your petitioners humbly pray that your honorable house may be pleased to pass an Act providing money to add to the accommodation and equipment which at present falls very far short of the actual needs and requirements of a college devoted to the work for which the Ontario School of Practical Science is intended. It is extremely urgent that for this improvement to afford the greatest advantage, it should be carried out without delay.

And your Petitioners will ever pray : —

J. L. R. Parsons,	Toronto.
E. A. James,	Thornhill.
Thos. C. Irving, Jr.,	Michipicoten Harbor
H. Spencer Holcroft,	Orillia.
H. W. Saunders,	Petrolea.
R. E. McArthur,	Toronto.
J. E. Davison,	Toronto.
Stuart M. Thorne,	Toronto.
E. V. Neelands,	Lindsay.
J. A. Johnston,	Pefferlaw (York Co.)
E. G. R. Ardagh,	Toronto.
J. G. McMillan,	Dutton (Elgin Co.)
H. A. Dixon,	Elginton (York Co.)
J. Richardson Roaf	Toronto.
W. E. Foreman,	Walkerville.
G. W. Dickson,	Toronto.

J. A. Craig,	Toronto.
E Guy,	Oshawa.
A. S. H. Pope,	Toronto
J. H. Barley,	Mitchell.
Wm. Hemphill,	Toronto
R. L. Latham,	Eglin..on (York Co.)
F. W. Thorold,	Toronto.
Harold McI. Weir,	Brantford.
W. C. Tennant,	Toronto.
J. Roy Cockburn,	Toronto.
J. A. DeCew,	Fenelon Falls.
W. G. Chace,	St. Catharines.
R. H. Barrett.	Amherstburg.
W. P. Breret ,	Bethany.
A. G. Christie,	Manchester.
W. J. Bowers,	Toronto.
W. G. Beatty,	Fergus.
Geo. M. Bertram	Toronto.
H. T. Middleton,	Toronto.
Alan C. Macdougall,	oronto.
J. T. Broughton,	arriston.
G. A. Hunt,	Galetta (Carleton Co.)
H. P. Rust,	Toronto.
Frank C. Jackson,	Seaforth.
Stan Gagné,	Toronto.
Geo. H. Power,	Toronto.
George MacMillan,	South Finch.
Wm C Matheson,	Milton.
D. E. Eason,	Keene.
H. G. McVean,	Dresden.
A. T. E. Hamer,	Bradford.
Charles Harvey,	Toronto
Norman R. Gibson,	Toronto
H. W. Price,	Toronto.
Edgar T. Brandon,	Toronto.
R. D. Wilson,	Toronto.
Arthur Laidlaw,	Durham.
Max V. Sauer,	Toronto.
A. Gordon Lang,	Toronto
Herman J. Zahn,	Toronto.
J. S. Madden,	Toronto.
Wm. Elwell,	Toronto.
Francis G. Mace.	Toronto.

Albert H. McBride,	Toronto.
R. S. Mennie,	Fergus.
R. E. George,	Port Elgin.
Percy Mathison,	Union.
W. H. Sutherland,	Toronto.
D. M. Johnston,	Toronto.
J. Breslove,	Toronto.
J. Elgin Roy,	Listowel.
J. T. Mackay,	Toronto.
Thos. Taylor,	Cheltenham.
D. Sinclair,	Cheltenham.
A. A. Wanless,	Toronto.
R. J. Dunlop,	Napier, West Middlesex.
C. P. Henwood,	Port Hope.
H. G. Barber,	Milton.
H. D. Robertson,	Walkerton.
A. C. Goodwin,	Grimsby.
Chas. H. Marrs,	Beamsville.
J. A. Whelihan,	St. Marys.
J. M. Brown,	Fergus.
H. V. Connor,	Sarginson (Hastings Co.)
Wm. A Duff,	Hamilton.
W. H. Stevenson,	Wentworth Co.
W. C. Lumbers,	Toronto.
Frank T. Conlon,	Thorold.
Wm F. Ratz,	Elmira (Waterloo Co.)
Gardner R. Alison,	Toronto.
M. T. Culbert,	London, Ont.
Chas. M. Teasdale,	Concord (York Co.)
R. W. Morley,	Waterloo.
A. G. McLennan,	Toronto.
N. A. Burwash,	Toronto.
Wm. M Edwards,	Iroquois (Dundas Co.)
Wm. J. Blair,	Oxford County.
Wm. E. Costin,	Brant County.
Wm. Christie,	Grey County.
A. R. Campbell,	Collingwood.
J. S. Henry,	Toronto.
I. J. Steel,	Boxall (Elgin Co.)
Walter Campbell,	Perth County.
H. H. Moore,	Deer Park.
T. N. Nash,	Dundas County.
John M. Empey,	Oxford County.

W. E. Douglas,	Toronto.
R. H. Knight,	Algoma District.
Rutherford Cumming,	Toronto.
D. F Robertson,	Almonte (Lanark Co.)
W. A. Gourlay,	Toronto.
J. J. McKay,	Woodstock.
A. E. Gibson,	Ingersoll.
G. G. Powell,	Toronto.
J. A. Sill,	Jarvis (Haldimand Co.)
F. A. Moore,	Toronto.
A. T. C McMaster,	Toronto
John M. Wilson,	Toronto.
A. E. Davison,	Prescott.
J. P. C. Charlebois,	Toronto.
W. J. Larkworthy,	Mitchell.
C. J. Townsend,	Toronto.
J. G. Jackson,	London.
H. M. Shipe,	Toronto.
A. J. Latornell,	Meaford.
A. H. Legge,	Richmond Hill.
H. Sydenham Small,	Toronto.
F. W. Burnham,	Peterboro.
F. A. Gaby,	Toronto.
F. N. Rutherford,	Norwood.
Charles H. O'Connor,	Sault Ste. Marie, Ont.
Benj. R. Patten,	St. George.
Oliver B. McCuaig,	Toronto.
M. B. Bonnell,	Bobcaygeon.
Andrew Gray,	Port Credit (Peel Co.)
John A. McFarlane,	Atwood Perth Co.)
J. P. Oliver,	Chatham.
W. G. Milne,	Brown's Cor's (York Co.)
I. A. Nevitt,	Toronto.
M. L. Miller,	Aylmer.
C. A. Mans,	Paris.
Jas A. Beatty,	Fergus.
H. G. Acres,	Paris.
C. K. Johnston,	Pefferlaw (York Co.)
H. G. Smith,	St. Catharines.
Jas. Algie,	Alton.
H. H. Angus,	London.
John McKellar,	Penetanguishene.
C. Fensom,	Toronto.

W. K. Greenwood,	Toronto.
W. R. Maher,	Eganville (Renfrew Co.)
V. M. S. Fuller,	Toronto.
J. E. Meader,	Orillia.
H. H. Depew,	Hamilton.
E. E. Mullins,	Toronto.
H. F. White,	London.
Silas B. Wass,	Granton.
D. H. Pinkney,	Morriston.
J. D. Pace,	Orillia.
E. H. Gurney,	Toronto.
R. B. Ross,	Toronto.
R. B. Elmsley,	Toronto.
P H. Mitchell,	Waterloo.
E W. Oliver,	Toronto.
H. Gzowski,	Toronto.
F. Y. Harcourt,	Welland.
H. D. Mackinnon,	Finch (Stormont Co.).
J. Horton,	Exeter.
R. H. Montgomery,	Brantford.
P. E. Morton,	York County.
C. G. Williams,	London.
W. H. Young,	Clifford.
D. H. Philp,	Petrolea.
F. H. Plunkett,	Meaford.
J. E. Umbach,	Elmira.
Geo. Hanes,	Windsor.
Gordon Brown,	Windsor.
J. F. Hamilton,	Creemore.
Ed. O Fuce,	Toronto.
Chas. L. Coulson,	Welland.
Harry W. Evans,	Toronto.
Robert Bryce,	Toronto.
W. A. Stevens,	Chatham.
Tames T. Corbett,	Puce (Essex Co.).
Chester N. Belton,	London.
Clarence J. Millar,	Toronto.
F. Grant Marriott,	Toronto.
W. A. Begg,	Wentworth County.
Peter Gillespie,	Cobourg.
L. J. Hayes,	Toronto.
Ernest A. Greene,	Orillia.
M. C. Hendry,	Toronto.

J. P. Gordon,	Toronto.
H. J. McAuslan,	Heathcote (Grey Co.).
Roland A. McGuire,	St. Catharines.
A. Jas Milden,	Cornwall.
Hubert B Southworth,	Toronto.
J. Waldron,	Pine Grove (York Co.).
Norman D. Wilson,	Toronto.
W. B. Porte,	Toronto.
J. H. Smith,	New Hamburg.
A. L. McNaughton,	Cornwall.
Chas. W. McKitrick,	Petrolea.
Herbert Johnston,	Meaford.
J. C. Gardner,	Niagara Falls.
E. L. Burgess,	Burgessville (Oxford Co.)
M. C. Kernahan,	Toronto.
Clarence R. Young,	Picton.
Fred R. Miller,	Ingersoll.
Murray A Stewart,	Toronto.
Jas. W. Keagey,	Dundas.
J. H. Jackson, O. L. S.,	Windsor.
R. G. Weddell,	Trenton.
F. D. Henderson,	Crathie (Middlesex Co.)
D. L Steele,	Meaford.
Samuel L. Trees,	Toronto.
J. B. Chaliies,	Winchester.
E. R. Gordon,	Belleville
Wm. S. Pardoe,	Toronto.
S. W. Eakins,	Belleville.
J. Edgar Mills,	Guelph.

We need naval architects to work out the problems of the shipbuilding industry of the Great Lakes, which is knocking at our doors.

The students of the School are not alone in the opinion that the School needs strengthening in all its departments, to carry out the work for which it was established, as is evidenced in the following letters.

From New Ontario.

(From the University of Toronto Monthly, January, 1901).

The Town Council of Rat Portage have laid a memorial before the Lieutenant Governor-in-Council, asking that suitable grants of money or lands be made to the University of Toronto, to assist in equipping, in a proper manner, a Department of Mineralogy and Geology, to co-operate with the work now being carried on in the School of Practical Science in these branches. In the opinion of the Council, the knowledge of geology and mineralogy should be widely diffused, in order to lead to the development of our mineral wealth.

The mineral resources of Canada should be developed by men trained along the latest scientific lines, and not by so-called mining experts, who have ruined many a good property, and thrown money away on worthless properties, thus damaging our mines in the eyes of capitalists.

"It is my opinion that the men who are to be the future executives of the operating, as distinguished from the commer-

cial, branch of railroading, will stand on the foundation of a thorough scientific or technical training"

J. D. HARAHAN,
General Manager of the Illinois Central Railroad.

From a Member of the Engineering Profession.

TORONTO, Feb. 27th, 1901.

J. L R. PARSONS, ESQ.,
Chairman Petition Committee,
School of Practical Science,
Toronto.

DEAR SIR:—

Referring to your verbal inquiry of to-day, I have no hesitation in saying that it affords me great pleasure to endorse the application of the Faculty and Students of the School of Practical Science, as I am quite satisfied that the advancement made in that Institution, coupled with that of Science, requires that considerable additions must be made at once, to the scientific appliances in use in the School, to enable your students to keep in advance of those of other modern Institutions.

I also think that with the growth of the School, it is necessary that you should have an increased staff of Professors or instructors, and that these gentlemen, from the highest to the lowest, should receive proper monetary consideration for their services, that they may feel settled and comfortable and thus be able to give their hest services to the country.

Wishing you all success,

I am, Dear Sir,

Yours truly,

W. T. JENNINGS,
C. E.

"In our works we train our own boys, taking them young from the technical schools."—*Andrew Carnegie.*

Over 100 Canadians studied in American Colleges last year. Their own country denied them the educations they sought.

From the Iron Industry.

THE GURNEY FOUNDRY COMPANY, LIMITED

TORONTO, Feb. 22nd, 1901.

J. L. R. PARSONS, ESQ.,

Chairman, School of Science Undergraduate Committee, Toronto, Ont.

DEAR SIR :—

Since the receipt of your letter of Feb'y 15th, in relation to the expansion of the School of Practical Science in the Province of Ontario, we have made a careful study of this matter, and take pleasure in expressing the view that the authorities of the University are justified by the facts, in making an effort to secure a broad enlargement of the present plant and staff.

Every indication points in the direction of the large expansion of manufactures and mining in this Province, and it is important, in our view, that such talent as is developed in this Province, should have the best educational facilities.

While there may be a question in the minds of some as to the desirability of a large expansion in relation to the Art's Course, there can be none as to the necessity of meeting the requirements of men, who are qualified by natural endowment for an education in practical science, as it is in every way desirable to retain in our midst men of this class, and it is obvious that if they are forced to leave the country to secure such an education as they require, they will, in all probability, be lost to Canada as citizens.

Yours respectfully,

THE GURNEY FOUNDRY CO., LT'D.

(Signed) EDWARD GURNEY,

President.

The Manufacturers' Approval.

CANADIAN MANUFACTURERS' ASSOCIATION,

Board of Trade Building,
Toronto, Ont., February 13th, 1901.

THOS. IRVING, ESQ.,
School of Practical Science,
Toronto.

DEAR SIR: —

I have pleasure in informing you that the matter that was yesterday brought before the attention of the Committee of our Association with reference to petitioning the Provincial Government to grant additional assistance to the School of Practical Science, was very favorably considered by our Board, and a motion was passed approving of the School being granted the necessary assistance.

It has in the meantime been referred to our Committee on Technical Education to prepare the necessary resolution on the subject, and to take such steps as may be desirable to bring the matter to the attention of the Government.

Yours truly,

(Signed) T. A. RUSSELL,
Secretary.

Canadian engineers to carry out Canadian engineering work.

80% of the School of Science graduates are employed in Canada.

From the Ontario Association of Architects.

TORONTO, March 4th, 1901.

MR. T. C. IRVING, JR.

Secretary Undergraduates' Committee,
School of Practical Science,
Toronto.

DEAR SIR:—

It has been brought to the attention of the Ontario Association of Architects that your Association is petitioning the Government for an additional grant to increase the facilities of the School of Practical Science, Toronto.

I am instructed to write to you in support of the appeal. The Ontario Association of Architects is desirous that all who take up the profession of architecture should be trained at the School. In the past a number of Canadians have taken the courses in Universities and Technical Schools in the United States, but the Association believes that with the proposed increased facilities, a much larger number than at present will take the architectural course here.

It is also to be hoped that it will be possible to make provision in the School for a course in Naval Architecture, as ship building seems destined to form one of our leading industries.

I am, dear Sir,

Your obedient servant,

WM. R. GREGG,
Registrar,
Ontario Association of Architects.

The Golden Age of the Engineer.

"With the coming of the autumn of 1900 an army of students, nearly two hundred thousand strong, will enter the doors of our colleges and of our technical schools. Of this ever-growing host a larger proportion than ever before will turn its face toward applied science, toward the profession of the engineer.

"Could one whisper a single friendly sentence into the ear of each one of these young men, I imagine he would say: 'Look well to your preparation, for your opportunity in engineering will be such as the world has never seen.'

"As to preparation, this is the day of the trained man. In competition with him the untrained man, or the poorly trained man, cannot maintain himself. Do not be afraid of too much theory. Never yet was good practice which was not preceded by and based upon good theory. Let your theoretical training be broad and deep. It is your only sure foundation for the best work.

"As to opportunity. The next quarter-century promises a physical development such as no generation has ever known. Upon our mainland a vast area of desert land is to blossom under the engineer's touch, canals are to be built, cities are to be lighted, problems of sanitation are to be wrought out.

"In all this progress the engineer, the trained engineer, is to play a role such as he has never yet had the opportunity to assume since commerce began. Our own West was conquered in the strength of an untrained virile energy. The far East, old in her wisdom, is to be conquered, and can only be won by the aid of the most versatile, the most efficient, the most perfect training. He who is to subdue it will go forth, not as did the Argonaut of '49, with pick and shovel, but with text-book and steam-engine and dynamo. This man is the

"All that is human must retrograde if it do not advance."—*Gibbon.*

---

engineer. The twentieth century is his."—DR. HENRY S. PRITCHETT, *Pres. Mass. Inst. Technology, in "Philadelphia Post" of Oct. 27th, 1900.*

The Toronto Board of Trade, on March 5th, unanimously supported by resolution the School of Practical Science petition, and appointed Messrs. J. F. Ellis and Peleg Howland to present their resolution to the Government.

Telegram from London Board of Trade.

LONDON, March 5th, 1901.

T. C. IRVING, Toronto.

London Board strongly commends petition—resolution will be mailed this afternoon.

JOHN BOWMAN.

In brief the position is this:—

The country needs the men.

The men are here to study to fit themselves for the work and have the money to pay for it.

All we ask is that the School be strengthened and equipped to meet the work it has to do.