CANADIAN ARCHITECT AND BUILDER

Fine & Industrial Arts · Decoration · Furnishing · Construction · Sanitation · Engineering

VOL. VI.—No. X. OCTOBER, 1893 PRICE 20 CENTS $2.00 PER YEAR.

INDEX TO ADVERTISEMENTS

NATURAL CEMENT TESTS.

Tests of Cements made by the Government during progress of Work at Kingston Graving Dock, 1891, by Louis Coste, Acting Chief Engineer, Ottawa.

		Time in water.	*Thorold Cement.*	Queenston Cement.	Napanee Cement.	
Thorold was the Only Canadian Natural Cement used in this Work.	Test with 1 per cent. salt in water for tensile strain.	30 days.	*177.10*	189.90	104.40	*2,000 Barrels Thorold Cement used in Kingston Graving Dock.*
		60 days.	*270.40*	240.10	187.	
		90 days.	*297.50*	248.80	193.10	
	Test with 8 per cent. salt in water for tensile strain.	30 days.	*189.60*	172.40	110.80	
		60 days.	*201.60*	183.10	115.50	
		90 days.	*243.60*	224.40	130.00	
	Test with 2 per cent. salt in water for tensile strain.	30 days.	*306.90*	160.20	126.80	
		60 days.	*303.50*	183.50	138.	
		90 days.	*317.10*	230.80	152.40	
	Test with 12 per cent. salt in water for tensile strain.	30 days.	*323.10*	164.40	197.60	
		60 days.	*331.70*	175.80	207.30	
		90 days.	*344.30*	189.30	218.50	

QUEENSTON CEMENT STANDS AT THE HEAD OF ALL CANADIAN NATURAL CEMENTS.

Tests of Cements made by the Government during progress of work at Kingston Graving Dock, 1891, by Louis Coste, Acting Chief Engineer, Ottawa.

	TIME IN WATER	C. B. Wright & Sons, Portland.	English Portland Anchor Brand.	German Portland Lion brand	Syracuse Portland	Montreal Imperial Portland	Queenston Cement	Thorold Cement	Quebec Cement	Napanee Cement	Hamilton Golden Cement.
Average tensile strength of 25 to 30 briquettes each, 1 in square, made of neat Cement consistency of mortar.	7 days	371.04	319.04	190.96	257.12	303.52	93.12	54.20	69.60	23.52	not given
	30 "	523.70	445.96	249.32	583.44	447.00	190.80	130.28	111.72	35.32	
	3 months	519.12	549.20	350.84	551.84	448.20	346.56	257.88	214.00	134.24	
	6 "	654.52	626.20	394.76	589.72	531.20	308.24	326.19	321.80	178.68	
	9 "	666.16	646.56		629.36	601.20	406.88	353.96	370.20	199.76	
	12 "	686.76	648.60	not given	644.00	615.96	428.28	367.56	383.12	221.00	
Average tensile strength of 25 to 30 briquettes each Cement, 1 in. square, neat Cement rammed in mould.	7 days	376.12	467.70	395.80	434.72	343.32	196.18	306.92	272. 2	69.92	not given
	30 "	421.22	512.50	379.40	512.40	423.88	271.08	331.02	164.16	60.77	
	3 months	537.94	544.30	420.60	688.20	510.24	417.56	314.76	293.92	153.16	
	6 "	614.74	623.40	427.60	636.84	542.88	472.16	393.56	400.32	236.82	
	9 "	637.24	612.12	468.20	648.52	546.08	484.84	389.98	389.32	264.00	
	12 "	649.24	628.40	446.12	640.56	533.12	508.86	456.32	390.03	278.82	

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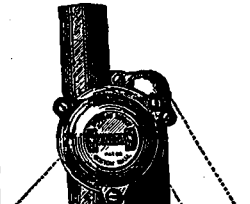
Another City changes its Plumbing Laws

—AND ADMITS THE—

Sanitas Traps without Back Venting

ON Thursday, March 10th, 1892, a test of the leading Traps of the country was made before a Committee of the Board of Health of the City of Rochester, N.Y., for the purpose of ascertaining their merits as anti-siphonic fixtures. The Traps tested were the S-Trap with the McClellan Vent, the Delehanty, the Sanitas, the Puro, the Bower and the Bennor traps. The first three traps were represented by their manufacturers. The last three were not so represented, but were tested under precisely the same conditions. The Committee made its report to the Board of Health, March 21st, and the following is an extract from their report:



TO THE BOARD OF HEALTH:—Your Committee begs leave to present to the Board the following report on the result of the test in relation to Trap Siphonage: The traps selected for the test were the BENNOR, the BOWER, the PURO, the common S-Trap with McClellan vent, the DELEHANTY and the SANITAS trap. These traps were all easily siphoned with the single exception of the SANITAS, which alone successfully resisted siphonage. In view, therefore, of the results of the experiments, your Committee respectfully recommends that Section 26 of the Rules and Regulations of the Board of Health of the City of Rochester, relating to Drainage and Plumbing, be revised to read as follows: All traps shall be protected from Loss of Seal, through evaporation, siphonage or air-pressure.... The SANITAS Traps may be used without venting. In case other Traps are used in connection with the fixtures above enumerated in this Section, they shall be connected with Vent pipes, in the manner hereinafter prescribed in these Regulations.

The above report and the revised rules were adopted by the Board of Health. The SANITAS is the only Trap allowed by the City of Rochester, without venting. As Architects in other cities are interested in saving their clients the needless expense and the dangerous complications of back venting, we invite their co-operation in getting the Anti-Siphon Traps allowed in their respective cities, without venting.

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CANADIAN ARCHITECT AND BUILDER.

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—THE—

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Contributions of technical value to the persons in whose interests this journal is published, are cordially invited. Subscribers are also requested to forward newspaper clippings or written items of interest from their respective localities.

The "Canadian Architect and Builder" is the official paper of the Architectural Associations of Ontario and Quebec.

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A CENSUS Bulletin recently issued by the Dominion Government shows that the workers in wood in the Dominion number 78,604; in stone, 30,856; in wood and stone combined, 10,201; and in metals, 49,476. The number of carpenters and joiners is 45,760; stone masons, 10,312; and painters and glaziers, 10,202.

THE evening classes in connection with the Toronto Technical School were resumed a fortnight ago. The attendance on the opening night was very large, and advantage is being taken to so great an extent of the instruction offered that the need of more commodious quarters is one with which the management will be confronted at an early date. The success which has attended the founding of this school is most gratifying to the advocates of technical instruction for the artisan classes.

THE annual report of the Ontario Bureau of Mines shows that there was produced in this province during the last year, common brick to the value of $980,000; plain pressed brick, $198,350; fancy pressed brick, $32,253; drain tile, $100,000. The value of stone quarried reaches $880,000. Cement to the value of $86,000 was placed on the market. The production of lime is valued at $350,000. Of a total mineral production of $5,374,000, $2,526,603 consisted of materials for use in architectural and engineering works.

IN view of the great scarcity of black walnut, once so plentiful in Canada, Mr. Joly has proposed to the farmers of Quebec that they should cultivate the walnut tree, as has been done in some of the Western States. The nuts after being left out all winter in heaps, covered with earth and straw, are in the spring planted two inches below the surface of the ground. The walnut tree is said to have a rapid growth. Mr. Joly's suggestion seems to be a valuable one, and we hope will receive the attention of the Forestry Department of the Government.

A French blacksmith named Ferdinand Allard, residing at Levis, Que., is said to have discovered a process of tempering copper. A small cannon tempered by his process is said to have been loaded to the muzzle with the most powerful powder driven in with a sledge and exploded without causing the least expansion of the barrel. A plate of copper three-eighths of an inch thick showed only slight indentation from the impact of rifle bullets fixed at forty yards distance with a force of two thousand pounds, while a hardened steel plate two inches thick was shattered to pieces from the same cause. The inventor of the process is confident that the most powerful projectile could not penetrate a ship the sides of which were protected with a 14-inch plate of copper which had been thus tempered.

IF we may judge by the published reports, the city of Winnipeg has become rid of the incubus imposed on her progress by the wild-cat speculation which a few years ago ran riot in that city. To all appearances the city has entered on a period of rapid and healthy development. The volume of building operations during the present year is stated to be about $1,884,450. This is as nearly as possible double in extent those of 1892, the aggregate of which was $900,000. The buildings erected this year consist largely of residences, for occupation by the owners. There is said to be a steady demand also for houses for renting purposes. The character of the residences built this year is said to be greatly superior to that of buildings of the same class formerly erected. There is said to be much demand for a better class of buildings for business purposes, and to meet

this the erection of a number of business blocks is in contemplation. It is anticipated that the coming year will witness even greater activity in building than that which has marked the present one.

THE new Board of Trade building in Montreal was formally opened a fortnight ago by our newly arrived Governor General, Lord Aberdeen. The occasion was marked by a banquet at the Windsor. Among the invited guests were many prominent lights in the commercial and political world. There was a great deal of speech-making. Properly enough much was said regarding the commercial interests of Montreal and the Dominion, and in praise of the part taken by the Montreal Board of Trade in the promotion of those interests. Singular, however, appears the fact that little or nothing was said about the new building itself, the completion of which was presumably the object of the gathering. Nor does a word appear in the report of the proceedings in commendation of the architect who designed and superintended the erection of the structure. There is nothing in the published report of the proceedings to show that he was even invited to take any part whatever in the opening ceremonies. We are at a loss to conclude whether the building is deemed unworthy of praise, or whether on payment of the architects fees, all the credit of the undertaking is supposed to revert to the financiers.

THE citizens of Toronto have been looking long and anxiously for indications of a return of the prosperity and steady progress experienced prior to the real estate boom, and the time of depression which followed in its wake. Architects and builders have naturally been amongst those who have watched most closely the situation, and will have reason to feel dissatisfied with the report of the assessors that the population has decreased during the year, and consequently that there are more vacant houses. Several errors have already been found in the report, and so little dependence is placed on its correctness, that a special police census has been ordered to be taken on the 1st of November to determine the actual condition of affairs. The opinion among architects and builders with whom we have discussed the subject appears to be that many of the houses which were vacant a year ago are now tenanted, and in consequence a moderate amount of building for residence purposes may be anticipated during the coming year. It is to be hoped that the result of the census will show this view to be the correct one. In any event, it can be said that the number of architects in Toronto is considerably greater than the present or prospective demand for their services would warrant, but in view of the commercial and industrial stagnation prevailing in the United States and other countries, there would seem to be great difficulty in the way of their removal to a more promising field.

THE City Engineer of Toronto was recently requested by resolution of the Council to report on the advisability of using native cement for concrete and other works. In his report he says: "Native Portland cement has been used on the works during the past year with very satisfactory results. Frequent tests are being made of this cement, and it is found to be of excellent quality, so that there is no objection to its use on city works, and it is not excluded therefrom. Regarding native natural cements, in my experience they are very much inferior to Portland cement. There may be, however, no special reason why they could not be used in some cases. For roadway work their use would involve considerable delay on account of their slow-setting character. The difference in cost between this cement and Portland cement, when used in concrete, would not be so great as is generally supposed, as a larger quantity of cement is required to be used to make a cubic yard of concrete. I have, however, inserted a clause in the specification for work which is now being advertised, providing that the contractor state in his form of tender the amount he is prepared to deduct from his contract price in case natural cement is ordered." In addition to the manufacture of natural cement which has been carried on extensively in Canada for many years, several companies have lately commenced the manufacture of Portland cement, as a result of which importations of cement are reported to have materially decreased.

A REPORT of the proceedings of the annual convention of the Province of Quebec Association of Architects appears in the in the present issue. Owing probably to the fact of the meeting being held in Quebec, the attendance was small, and the business transacted principally of a routine character. A couple of excellent papers were presented by Messrs. A. T. Taylor and Chas. Baillairgé. We regard it as unfortunate that the visits to points of interest precluded discussion of them. It is gratifying to notice that the importance of proper facilities being provided for the study of architecture has impressed the minds of leading men in the profession in the Province of Quebec. It is to be hoped that the attention bestowed on the subject at this convention will serve to call public notice thereto, and assist in paving the way for the establishment of a Chair of Architecture in connection with one of the great local universities. We regard this as by far the most important work to which the efforts of the Association can be directed. Had Mr. Baillairgé in his otherwise admirable paper kept more closely to this subject, he might have laid before the public a much stronger case on behalf of the proper training of those who will be the architects of the future, and we hope that at some future time he will return to the subject and for the benefit of the profession and the public review it in all its aspects. Mr. Taylor's paper on the Architecture of the World's Fair is a most skilful and interesting portrayal of his observations at the "White City." It is interesting to compare the facts as stated in this paper with the impressions of one of our correspondents in his article in this issue entitled "Notes from the World's Fair." It will be noticed that agreement of opinion exists on one point at least, namely, that the Canadian Building does no credit to Canada.

MESSRS. Dill & O'Hearn were recently given a contract for painting the exterior wood and iron work of one of the Toronto public schools. After the contract was completed, a Mr. Moore, who is alleged to be a rival contractor, charged Messrs. Dill & O'Hearn before the Public School Board with having violated the specifications by giving the building one instead of two coats of paint. A committee of the Board was appointed to investigate, and reported that they were of opinion that two coats of paint were not given to the whole of the work, and that as to any part of the work which might have received two coats it was done in a very hurried manner and not in accord with the intention of the specifications. The contractors admit that the work was hurried, but claim that otherwise it was properly done. When the report came before the Public School Board for consideration, it led to a warm discussion. The chairman created a sensation by stating that it had for a long time been a by-word in Toronto that work in connection with the public schools had been scamped, and that specifications were so drawn that certain favored contractors could secure the work. These remarks, reflecting severely upon the honesty of the Superintendent of School Buildings, were very properly resented by some members of the Board. The Superintendent is, we believe, above such conduct. The report of the Committee was adopted without the Superintendent being asked to report on the case, or explain his position in relation thereto —a course of action which must be deemed to be most unfair to the head of an important public department, more especially in view of the fact that the work had not been finally passed by the Superintendent and there was owing to the contractors on other contracts more than sufficient to cover any defects in the work It is alleged that the man who preferred the complaint had been detected in an attempt to scamp a contract which he had secured from the Board, and that his action in the present case was an attempt to get even with the Superintendent for having compelled compliance with the specifications.

AN ARCHITECT'S OPINION OF THE "CANADIAN ARCHITECT AND BUILDER."

Mr. F. J. Rastrick, the well known architect, of Hamilton, Ont., writes: After an examination of the last year's numbers of the CANADIAN ARCHITECT AND BUILDER, I wish to congratulate you upon the great improvement which has been attained. It has become quite an artistic publication, and one which is not excelled amongst the architectural publications of the United States or Great Britain.

TORONTO ESPLANADE IMPROVEMENT.

MR. Sankey's report to the City Engineer contains his plan for laying out the new water front on the bay, so as to provide public wharves that will give a favorable impression to visitors who enter Toronto first by this way; to arrange for heavy traffic on Lake Street and reserve sites for commercial buildings on the landward side of it; to bring street car accommodation by coverhead lines in connection with the ferries and lake steamers; and lastly, as the wharf accommodation provided is considerably more than double that now in use, to reserve for the public a large waterfront square surrounded on three sides by water.

The works proposed occupy the space from the Yonge Street wharf to the new pier of the ArgonautRowing Club—practically from Yonge Street to York Street. There will be a new Yonge Street wharf more than three times the size of the present one. The new wharf will more properly speaking be a solid pier cribbed only on the outside and filled in firmly with earth. The front will be long enough to allow the longest lake steamer to tie without obstructing the passage of other vessels to and from the sides, which will be of somewhat greater length than the front. The pier will thus form a square of solid earth with a wharf all round. The space reserved for wharf room is 50 feet —20 feet for a gangway and 30 feet for wharf buildings. Behind the wharf building there will be a 40 feet road all around, leaving a central block, round which the road passes, which will be well adapted for a fruit market and cold storage warehouse. The ferry pier will be at the foot of York street and will have besides landings for the ferries, accommodation for steamers running in connection with the railways. The remaining space, about half the distance between Bay and York streets, will be occupied by what Mr. Sankey calls the "Harbour Square." This will be formed in the same way as the Yonge street wharf by external cribbing filled in with earth and will form an area, planted we may presume with trees, about 400 feet wide and running out for about the same distance or a little further into the bay.

To bring the public into communication with the water front it is proposed to form a loop of the street railway between York and Yonge streets bringing the lines down by inclined bridges from the level of Front street to that of Lake street.

In pointing out that the expense of constructing the wharves and harbour square will be small, Mr. Sankey says:—"It should not be more than the cost of the necessary cribbing; there is always a demand for a dumping ground near the centre of the city, and all the filling necessary can be got for nothing." It is however necessary that in constituting these works dumping grounds for the city, some discrimination should be used as to the nature of the material dumped. It will be of little use to provide the Harbour Square as a breathing ground for the people if its soil reeks pestilence. The filling in that has been going on all summer in front of the Union Station has been composed to a great extent of what it is no exaggeration to call garbage. The collection of tin cans, broken pots, vegetable tops, spoiled fruit, etc., which was carted to this spot showed it to be the sweepings of the city lanes. To cover it with a layer of earth made it little less offensive than before. The animal life that is generated from decay is said to be indifferent to burial, and it is probable that unless steps are taken at the beginning to prevent filling in the new works with anything but clean stuff we may expect the Harbour Square to be a resort more favorable to microbes of disease than to human beings.

ILLUSTRATIONS.

POST OFFICE, HALIFAX, NOVA SCOTIA.

THE building, which is constructed of freestone on a granite base, stands in a square opposite the Provincial Buildings. The exterior appearance is very satisfactory, but the interior effect and accommodation are less so. The architect of the building was Mr. David Sterling, of Halifax.

DETAILS FOR SMALL TOWN HOUSE.

These details are to accompany the design for a small town house published in the CANADIAN ARCHITECT AND BUILDER for September.

SUMMER RESIDENCE FOR MR. A. W. OGILVIE, MONTREAL.—A. C. HUTCHISON, ARCHITECT.

ST. JOSEPH'S CHURCH, OTTAWA.—W. E. DORAN, ARCHITECT.

QUESTIONS AND ANSWERS.

[Readers are invited to ask through this department for any information which they may require on lines consistent with the objects of the paper. Every effort will be made to furnish satisfactory answers to all such inquiries. Readers are requested to supply information which would assist us in our replies. The names and addresses of correspondents must accompany their communications, but not necessarily for publication.]

G. E. M., Toronto writes: How many pounds would there be in a bushel of white lime just from the kiln.

ANS.—About 70 pounds.

MONTREAL.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

The sentiments expressed in the following extract from a letter recently addressed by Mr. L. J. A. Papineau to the Cure of the parish of Notre Dame de Bousecours, Ottawa County, protesting against a proposal to substitute for a church in camparatively good repair an expensive edifice of more modern design, will no doubt strike a responsive chord in the breasts of many of your readers: "I have seen in Scandinavia many an old wooden church, of several centuries' existence, and which are as venerated as the lead temples of marble and mosaics in Italy. All throughout Europe they preserve all monuments, civil and religious; and the more so in proportion to their antiquity. In America, on the contrary, people's ambition is to destroy. Each generation seems desirous to pull down whatever their fathers have erected. In Canada, since a few years, it has become a mania to demolish churches and make everything new. For our rural churches there had grown a Canadian type; a long building of boulder masonry, bound by a mortar as hard as a cement, a triangular front and steep roof, arcaded doors and windows, plain, without superfluous ornaments, the shining roofs and steeple seen from afar in the sunlight, the long and sharp steeple ascending towards heaven, crowned by the cross and the Gallic cock. All these old monuments of our ancestors people are now hurrying to destruction, to replace them at fabulous prices by monstrous constructions which are neither gothic nor classical, but a mass of incongruities which may be called the Jesuitical order of architecture, such as is exemplified in so many churches of Spanish America and a few modern European. An agglomeration of pinnacles and caps which, grovelling low, are neither steeple nor dome, and in place of a tympanum display immense white flourishes and ribbons of stone which resembles the contortions of serpents in place of the triangle of Jehovah or the Trinity. We have a striking example of this barbaric transformation in the unfortunate chapel of Bonsecours in Montreal—the only temple left in that city of the colonization period—that venerable temple, which has been so shamefully altered both internally and externally. They have destroyed the many golden sculptures that once decorated the original parish church of 1645, and replaced them by horrible grey daubs worthy of penny theatres. I will not mention the elevator to the roof exhibitions. What a caricature they have made of the holy shrine."

Mr. Porteous, who was perhaps the oldest architect in Montreal, died in this city on the 28th August, at the advanced age of 82 years. Deceased was the designer of a large number of churches and factories. He superintended the construction and hanging of the lock gates of the Williamsburg and Cornwall canals, having been the inventor of an improved method of hanging such gates.

In olden times it was not unusual for the building of a cathedral to occupy a period of one or several hundred years. In our times, however, we are accustomed to see great structures rise as if by magic, and but a few years are required for the rearing of mighty cities. In contrast to this haste of modern times has been the building of St. Peter's Cathedral of this city, which is to be opened at Christmas. It has been under construction for a quarter of a century, not because it could not have been erected in a much shorter time, but because its progress was limited to the rate at which the necessary funds could be obtained. The building, as is generally known, is a model of St. Peter's at Rome, and is about one-third the size of the latter. The interior decorations are as yet incomplete.

HAMILTON.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

The old post office building on St. James street, which I have always regarded as one of the most creditable of the public buildings of the city, is sought to be occupied by the Associated Charities or the Wentworth Historical Society. I trust the latter Society's request may be preferred, as I should dislike exceedingly to see such a building given up to the uses of a soup kitchen.

The statue of the late Sir John A. Macdonald to be erected in this city, and of which an illustration appeared in the CANADIAN ARCHITECT AND BUILDER some months ago, is to be unveiled by the Premier of the Dominion, Sir John Thompson, early in November.

The Board of Works entered early in the year into a contract with Messrs. Robert Thompson & Co. to supply a certain quantity of lumber, at a certain price, for the use of the corporation. The Board having subsequently overdrawn its appropriation, the Mayor instructed the Street Commissioner to receive no further consignments of lumber. In consequence of this order, the contractors threaten to enter suit to compel the acceptance of the balance of material called for by the contract.

The present year has been a fairly active one for architects and builders, and the fact that a considerable increase in the city's population is reported by the assessors may be regarded as a favorable indication for the future.

NOTES FROM THE WORLD'S FAIR.

(By a Correspondent.)

What has been written in the American press about the building of the World's Fair would, if taken without a grain of salt, raise expectations after which the Kingdom of Heaven would be disappointing. But one becomes so accustomed to make light of any utterance of the American newspapers and to make due allowance for the conscientious enthusiasm of articles in the illustrated magazines, that, in spite of all that has been said, the Fair was not disappointing. It is in fact a great piece of designing and a triumph for its designers and the nation.

There is nothing in the natural shore to suggest the result obtained. It is an unbroken beach, sandy and barren. The arrangement of the ground appropriated to the Fair is a piece of pure design, and to whomever it first occurred to dig out a portion of the grounds and let in the water of the lake is due the feature which forms the essential beauty of the Fair and its essential advantage in beauty over other Expositions. The rest is perhaps no invention. Neither the idea of abandoning the old form of Exhibition building in iron and glass nor the material used in making other forms was new. But the completeness with which the scheme has been carried out makes this Exposition a new departure in Exposition building.

The "staff" with which the buildings are covered, a compound, chiefly of plaster of Paris and cement united with fibre, which was invented for the last Paris Exposition, has when set an appearance very like the white stone of which the chateaux of the Loire Valley are built. It is applied to a construction of iron and wood and the result is a building apparently made of stone. As to the buildings themselves, to read some writers on the subject one would think there never were such buildings, that now for the first and only time the world has seen perfect buildings. This is not precisely true; but for total effect the "White City" has been an opportunity in design which the world can seldom offer and of which the associated architects, acting in concert with a great landscape gardener, have taken good advantage. Partly by virtue of size, for the porticos of the Manufacturers' Building are 122 feet high and yet do not appear unduly large; partly by virtue of uniformity of colour and harmony of style; partly by dint of profusion of architectural features, such as domes, towers, pinnacles, colonnades and statuary, but chiefly by skillful disposition of the buildings and by the introduction of the final charm of water with its accompaniments of bridges, balustraded terraces, broad flights of white steps for landing in some parts and the dark contrast of overhanging trees, all planted, in others, the enlivenment of passing boats and of water fowl which swim about and break the water into many colours; the buildings as a whole form a piece of architectural landscape which realize Turner's pictures of Carthage and Ancient Italy. The architects have for once found themselves to some extent in the position of poets who, as Bacon says, may build for beauty only, as they build with small cost. I do not however, think, that any one can argue from these buildings a case for sham; for they cannot be called shams, being so obviously and openly ephemeral. The well regulated mind, which would loathe a sham in permanent work, can derive straightforward pleasure from these buildings and rather prefers in the case of a summer's show to know that the cost is not absurd. Moreover, part of the offensiveness of sham is the facility it affords for representing noble material in a base situation. The soul recoils from a marble front to a corner grocery store. But here no magnificence is out of place, provided it does not cost too much. So far from revolting from an impossible magnificence the imagination claims it as due from the material used, and resents instead a compassable severity which would really simulate stone. It is at any rate true I think that the less satisfactory buildings fail in the direction of the commonplace and matter of fact. The designers who have succeeded best have been those who have used to the greatest extent the freedom given by the material for a lavish use of columns, statuary and plastic decoration.

At one end of the Fair grounds apart from the Exhibition buildings are the States buildings, which represent the States and countries taking part in the Exposition, and contain the official apartments of their commissioners. On the whole it must be said that with the exception of some of the foreign buildings they form a sorry exhibition of designing, and one of the very worst is that representing Canada. Its triviality of design and barren ugliness were more tiring than ten hours in the picture gallery. Many of the States were led astray by their originality, but not so the Canadian designer: his originality was well in hand. Others thought more of displaying native material than of perfection of design. The Canadian designer displayed nothing but native ugliness. Among States' buildings of the United States the best are those which reproduce old examples. Massachusetts excels with a reproduction of the truly refined and beautiful John Hancock house. California has reproduced a Spanish Jesuit mission building, a large building which is used also for an exhibit from the State. New York, it was originally understood, intended to reproduce the Van Rensselaer Mansion on the Hudson opposite Albany. But New York has turned its back on the Dutch and proclaims itself in a present day fashion by a gorgeous Renaissance Club House, extravagantly finished, thickly carpeted and hung as to the walls with tapestry or silk. The stairs are of stone on concrete, with a marble dado, if I recollect rightly, and the economically minded visitor only breathes again on discovering that the handrail is of wood painted to imitate marble. All this for one summer's use is of course sinful. We may congratulate ourselves that the Dominion Government possesses more of the domestic virtue of thrift and that we are spared the pain of regret that the Canadian building must be pulled down. The English Government *more Anglicano*, have built their house solid and presented it to the Park Commissioners to serve some purpose in Jackson Park, after the Fair is over. And this, I believe, will be the only relic on the grounds left of the whole display.

It is hoped that copies of some of the fine groups of statuary will find their way into museums. But some of the best are colossal and others would lack their architectural and landscape setting.

For the buildings there is no further use; and, even if left, they would soon shed their beauty to the ground and stand as bare as trees in the autumn.

One wonders whether there will again be so great an Exposition. It is understood that the promoters of this Exposition will drop nearly half as much again as the entire cost of the Centennial Exposition, and what people can stand such an outlay?

However, there will be Expositions, and if the designers of the next will learn positive lessons from this as well as caution, may I be there to see.

TORONTO ART STUDENTS' LEAGUE.

The Toronto Art Students' League has resumed its regular meetings. Preliminary arrangements are already under way for what promises in January next to be the most interesting exhibit of the work of the members of the League that has ever been submitted to the public view.

RECENT PLUMBING PRACTICE.

MR. Glenn Brown, F. A. I. A., who read a paper on the above subject at the recent International Congress of Architects, at Chicago, summed up the deductions to be drawn from all the experiments reviewed by him as follows:

1. That unventilated traps are liable to fail from either or both siphonage or back pressure.

2. That small traps should have vents the size of the trap, and the main vertical vent should be three inches in diameter in ordinary dwelling houses, and should be computed for larger houses.

3. Ventilated traps do not fail by either back-pressure or siphonage.

4. That ventilation through pipes of the proper size should be required in all specifications.

In the matter of methods of testing pipe-systems, the smoke and the peppermint test are of little service, as they do not represent any pressure. Filling the pipes with water or testing them with compressed air, the pressure showing on a gauge, are the only reliable methods.

Steam for heating purposes says the *Plumber and Decorator*, possesses an advantage over hot water in the case of its application where great inequalities and frequent alterations of level occur, and particularly when the boiler must be placed higher than the place to be heated. For buildings occupied at intervals steam is more effective than hot water in its rapid generation of heat.

USEFUL HINTS.

One gallon priming colors covers 50 square yards; white zinc, 30; white lead paint, 45; lead color, 50; black paint, 50; stone color, 44; yellow paint, 44; blue color, 45; bright emerald, 25; bronze green, 75.

To remove rust from nickel plate: Grease the rust stains with oil, and after a few days rub them thoroughly with a cloth moistened with ammonia. If any spots still remain, remove them with diluted hydrochloric acid and polish with tripoli.

It is stated that ordinary brick boiled in tar for about twelve hours, or until they are saturated with it, are increased about 30 per cent in weight, are much harder than common ones, and unaffected by frosts and acids as well as perfectly waterproof. They form an excellent flooring for work shops or store rooms, particularly in chemical establishments.

CEMENT FOR MOSAIC CUBES.—Soak isinglass in water till soft; then dissolve in proof spirits by means of a gentle heat. In two ounces of this mixture dissolve ten grains of ammoniacum and while still liquid, add half a drachm of mastic dissolved in three drachms of rectified spirits. Stir well together and put in bottles. Melt by standing the bottles in hot water and use directly.

At the Workmen's Exhibition recently held at the Agricultural Hall, London, some interesting examples of wall decoration by means of sand were shown. A plain coloured surface having been prepared the design is stencilled on with gold size or some other suitable sticky material—varnish allowed to partly dry would answer very well. Sand that has previously been coloured to the desired tints is then applied to the surface marked by the design to which it adheres, giving a very attractive appearance. Sand of several colors may be employed if desired.

SWISS BRICK.—In Switzerland there is now being manufactured a glass brick, or a brown building block, formed or molded flask shape, with a short neck at each end, 8 inches in length, 6 inches in width, and 2½ inches in depth, with an air chamber through the center. The edges of the brick are covered, recessed or ribbed and grooved to receive when laid a suitable cement of plastic material of such character that after it has hardened it will constitute a suitable frame or setting to keep the entire mass, roof or wall solidly together. The forms or molds, there being two shapes, are pleasing to the eye, the line or ridges being clear and smooth, and of sufficient thickness or strength to stand a pressure of 150 to 200 pounds to the square foot.

Experiments with glass bricks for building purposes were begun in 1891 by Mr. Falconnier, an architect of Lyons. These bricks are hollow, being blown like ordinary bottles, and are given forms—such as cubes, hexagons, etc.—that permit of ready laying. A bituminous cement, with a base of asphalt, is used; the bricks serve as double windows, giving protection against both cold and heat: they are good insulators of humidity and noise, and they lend themselves readily to the decoration of buildings, either by their form or their colour. Many applications are forseen. The bricks are described as neater than marble for meat markets, and are especially adapted for hospitals, bath halls, hot houses, refrigerating establishments, and buildings in which absence of windows would be an advantage. A hot house of glass bricks, we are informed, costs about the same as an ordinary one, saves fuel and resists hail.

Among the processes for fireproofing to which the attention of the directors of the Berlin Exposition was recently drawn, and for which awards have been declared, are the following: For light tissues, consisting of sixteen pounds of ammonium sulphates, five pounds ammonium carbonate, four pounds of borax, six pounds boric acid, four pounds of starch—or one pound dextrine or one pound gelatine—and twenty-five gallons water, mixed together, heated to eighty-six degrees Fahrenheit, and the material impregnated with the mixture, centrifugated and dried, and then ironed as usual. One quarter of this mixture, costing only a few cents, is sufficient to impregnate fifteen yards of material. For certain materials, theatrical decorations, wood and furniture, thirty pounds of ammonium chloride are mixed with so much floated chalk as to give the mass consistency, and it is then heated to from 125° to 150° Fahrenheit; two coats of it by means of a brush. A pound of this, costing only a mere trifle, is sufficient to cover five square rods.

STEAM-PIPE JOINTS.—The method of constructing steam-pipe joints at one of the Edison Electric Light Stations in Boston where the working pressure carried is 150 pounds per square inch, designed by William H. Gallison, is said to have given excellent results. The pipe is made of wrought iron, and the joints between contiguous sections of pipe are made by the use of cast-iron flanges. The pipe and flange are threaded, and the screw joint is first made in the usual way, care being taken that the thread on the pipe is of sufficient length to extend through the flange its full thickness. After being made up solid inside of the pipe at the extreme end is expanded by the use of a hammer, the metal being driven or riveted into the thread. The pipe is then put in a lathe, and the flange faced off throughout its whole surface; not only that of the cast-iron of the flange proper, but also that of the end of the pipe. The gasket which is used is made of copper, and care is taken that this extends through to the interior edge of the pipe as well as the surface of the flange.

COATINGS FOR PRESERVING STONE.—The following formulæ for metallic cements are given by Mr. Grimand in *La Revue Practique des Travaux Publics*: Oxide of zinc dissolved in a solution of chloride has for a long time been used as a paint, and it serves as a base for the following cements: 1. Oxide of zinc, twenty kilogrammes; pulverized Lorraine cement stone, twenty kilogrammes; sandstone, ten kilogrammes. This cement must be tempered by a liquid composed of hydrochloric acid, twenty-two degress, B., ten litres; water, five litres; zinc white, three kilogrammes; ammonium chloride, 0·5 kilogrammes. 2. A cheaper cement can be obtained by mixing oxide of zinc, ten kilogrammes; pulverized Lorraine cement stone, twenty kilogrammes; sandstone five kilogrammes; and yellow ochre, 0·4 kilogrammes. This cement is tempered with the solution just given, diluted with five litres of water. For soft stone, a cement is made of oxide of zinc, ten kilogrammes; Lorraine cement stone, thirty kilogrammes; sandstone, ten kilogrammes; and yellow ochre, 0·3 kilogramme. Or the following formula may be used: Zinc white, five kilogrammes; plaster ten kilogrammes; Lorraine cement stone, ten kilogrammes; and yellow ochre, 0·5 kilogramme. If an extremely strong cement is desired, it can be prepared of oxide of zinc, ten kilogrammes; pulverized quartz, fifteen kilogrammes. For the last mentioned three cements, the liquid given above is used, only ten litres of water are added instead of five litres. These cements can be applied with a brush as a paint. Colours give give good results. The coating adheres perfectly to the stone, and gives it the appearance of a newly cut surface, and at the same time forms a protecting covering against the inclemency of the weather. The stone should be well cleaned before applying the paint, and, if necessary, several coats may be given.

METHOD OF MEASURING BRIDGE AND FLOOR VIBRATIONS.—Professor Steiner, of Prague, has perfected a method of accurately measuring bridge and floor vibrations by the aid of photography. His process, says *Le Genie Civil*, is a delicate one and is an application of the chrono-photographic process of M. E. J. Marey, of the Institute of France. He uses little glass balls, and these are strongly illuminated, either by the solar ray or by an electric arc light or a magnesium light. These balls give upon a photographic negative a clear and well defined point. To register vibrations one of these glass balls is fixed at the point to be examined, and the photographic apparatus then so set up that the image of the ball falls on the right edge of the plate. The plate is exposed at the moment the movement commences, and at the same time the camera is turned from right to left on a pivot. The negative then shows an undulating line which is the vibrations of the ball point in amplitude and duration to obtain a scale with which to read this undulating line, a second ball is suspended to a fixed point, to which is given a known rate of oscillation. The position of these two balls is such that their images coincide in a state of rest, and a comparison of the trace of the second ball as printed upon the line of the first on the negative gives the number of vibrations of the latter in a given time. It is possible, then, to place near the first ball a fixed scale, brilliantly illuminated like the ball itself, and as this scale appears on the negative, the amplitude of the oscillations can be measured at a glance. The measurements may be made either directly upon the print or from an enlargement made in the usual manner. To avoid the practical difficulty of making the images of the two balls coincide at the beginning of the operation, Professor Steiner says a pendulum may be made to oscillate before the source of illumination of the ball. The ball of the pendulum will pass before the light at regular and determined intervals, and the undulating line of the negative will be broke at distances corresponding to the duration of the oscillation of the pendulum. It is not important that the camera turns upon its axis with a uniform motion, and the speed of turning is likewise of little importance. The relations of the curves placed by the two balls will always remain the same. It is suggested that an apparatus of this kind would be useful in studying the vibration of the floors of buildings resting for some years on iron beams, especially when these floors are submitted to the rythmic shock of dancing.

THE ARTS AND CRAFTS.

This is what Mr. Crane says, in a recent issue of the *Magazine of Arts*, as to the connection which should exist between Arts and Crafts: "The designer—if designer pure and simple he is forced to remain—must never lose touch with the craftsman. It would be well, indeed, if he practiced some craft himself, as the technical conditions, peculiarities, perhaps difficulties, he would be sure to encounter, would tell him more than any words about it; and the practical experience and suggestions gained would certainly react most favorably upon his power to design. Before the evolution of our industrial epoch of sub-division of labour, machine industry, and centralized markets, the craftsman was his own designer. Handicrafts, in fact, did not exist apart from art, and the workshop training and apprenticeship was common to them all. Thus a painter began as a colour grinder, and went through all the technicalities of the studio or workshop before he became master of them. The system is so obviously sensible and sound that it seems strange it should ever have been departed from, and, in fact, it only was broken up by the pressure of the modern commercial system, and the domination of the money-making idea."

PROVINCE OF QUEBEC ASSOCIATION OF ARCHITECTS.

PROCEEDINGS OF THE ANNUAL CONVENTION.

The Quebec Association of Architects met in annual convention in the Parliament buildings, Quebec, at 10 a. m. on Sept. 28th ult. There were present :—

Victor Roy, President ; J. Nelson, First Vice President ; H. Staveley, Second Vice President ; J. Z. Resther, Treasurer ; A. C. Hutchison, Secretary ; A. T. Taylor, J. L. Peachy, J. B. Resther, Theo. Daoust, H. Nelson, F. X. Berlinguet, Chas. Baillairgé, George Emile Tanguay, A. Gendron, J. Redmond and J. Bertrand.

In a brief address the President called the convention to order. Reports of the Treasurer and Auditors were received and adopted ; also the report of the Council, which was as follows :—

REPORT OF COUNCIL.

The Council beg to report that since the last annual meeting of the Association held in Montreal, fourteen meetings of Council have been held, the business at which was principally of a routine character.

The attendance at these meetings was as follows :—Alex. C. Hutchison, 14 ; J. Haynes, 12 ; A. T. Taylor, 11 ; J. Nelson, 9 ; A. F. Dunlop, 8 ; J. Z. Resther, 8 ; V. Roy, 8 ; J. P. Ouellet, 1 ; J. J. Browne, 1 ; H. Staveley, 0 ; H. M. Perrault, 0.

The small attendance of Messrs. Staveley and Ouellet, of Quebec, is accounted for by an understanding that to save expense they were only to be summoned when the business was urgent and that the late Mr. Brown, owing to an accident which happened to him early in the year was incapacitated from attending.

At the first meeting of Council held after the annual meeting, Messrs. F. X. Berlinguet and C. Baillairgé, of Quebec, and Messrs. A. T. Taylor, Joseph Haines and Alex. C. Hutchison, of Montreal, were appointed a Board of Examiners. This Board reported that at the semi-annual examinations held in Quebec on the 26th and 27th of January last three candidates, namely, Messrs. J. P. Ouellet and J. P. E. Dussault, of Quebec, and Mr. D. A. Monette, of Montreal, had presented themselves and succeeded in passing the final examinations prescribed by the Act of Incorporation and by-laws. Their names were consequently entered upon the register of the Association.

The Board also reported that at the semi-annual examinations held in Montreal on the 27th and 28th of July six candidates had presented themselves for matriculation examination, and that the following four had succeeded in passing, namely :—M. Helbronner, P. Sicotte, F. Peden and J. A. Deschamps.

Shortly after the last annual meeting, the Council, with a view to bring the members of the Association resident in Montreal together more frequently, arranged that as many of the members as could make it convenient to attend should meet and dine together once a month—these monthly dinners to be followed by a general meeting of the members for the reading of papers, lectures and discussions on subjects of interest to the profession. These monthly dinners and meetings were held from December to May ; at the meetings papers were read and lectures delivered as follows : "Truth in Art," A. T. Taylor ; "Westminster Abbey," A. T. Taylor ; "Archæology," J. Venne ; two lectures on "French and English Gothic Architecture," illustrated by lime light, by A. C. Hutchison. At one of the meetings a discussion led by Mr. W. E. Doran took place on the Single Tax question. While the attendance at these meetings was not as good as the Council expected, they hope that if they are continued during the next winter season the members will avail themselves of the opportunity thus afforded them for social intercourse and instruction.

An attempt was made in January last to form classes for the instruction of students, but owing to the difficulty of obtaining instructors and the apathy of students, they were not carried out.

During the last session of the Legislature of Quebec, a bill was introduced by Mr. Auge respecting the privileges of labourers, mechanics, contractors and furnishers of materials. As the provisions of this bill if passed were likely to interfere with and hamper the obtaining of loans for the purpose of building, and would foster the growth of an inferior and irresponsible class of contractors, the Premier of the Government was communicated with and he was requested to use his influence in preventing the passing of the bill. The Council were assured that when the bill came up for discussion their objections to it would be presented. The bill, however, was withdrawn before discussion upon it took place.

In the month of January printed lists of the names of members on the Register of the Association at the beginning of the year were issued to all the members.

Shortly after coming into office of the present government of the Province of Quebec their attention was called to the tariff of professional charges which had been prepared in accordance with the terms of the Act of Incorporation, and submitted to their predecessors for confirmation by the Lieutenant-Governor in Council. As this had not been done when they left office, the present Government shortly after they had assumed office was petitioned to have the tariff confirmed at an early date, and on the 24th of March last a deputation of seventeen members of the Association waited upon the Honorable Mr. Taillon, Premier, and urged the claims of the Association to have the tariff ratified. Though the deputation was well received and promised that the subject would have his early and careful consideration it still remains in abeyance and has not yet been rejected.

As a number of the members of the Association wished to have a copy of the tariff as prepared by the Council and submitted for approval to the Government, it was printed in French and English and distributed to all the members of the Association. At the same time circulars were issued containing suggestions for the conduct of competitions. The Council would respectfully urge upon the members to use their influence with any person or body promoting a competition to have it carried out in the manner suggested by the Council.

Early in the year the formation of a library of reference for members and students was taken into consideration. As a library placed in Montreal could only be of use to the members and students resident there, it was felt that it would be unfair to the members of the Association not resident in Montreal to devote any of the funds of the Association to such an object. Subscriptions in books and money were therefore solicited from members in Montreal, and in response to the appeal the sum of $120.00 was subscribed as follows :—V. Roy, $25.00 ; A. T. Taylor, $25.00 ; Alex. C. Hutchison, $25.00 ; A. Raza, $25.00 ; W. E. Doran, $10.00 ; J. Wright, $10.00.—$120

Donations of books were also received from C. Cliff, J. Nelson, A. F. Dunlop, A. T. Taylor, C. St. Jean, J. Haynes, Mrs. J. Redpath.

With the money and books thus subscribed and with those previously donated by Mr. C. Baillairgé, of Quebec, the Council have now 107 volumes upon the shelves of the library, and as they still have an unexpended balance on hand, the number of books will shortly be increased and the nucleus of a good library of reference established.

The preparation of a suitable design for a diploma to be issued to the members who enter the Association by passing the examinations prescribed by the Act of Incorporation and By-laws has received the attention of the Council and they are pleased to report that after considerable delays the diplomas are now ready, and that they are being issued to the members entitled to receive them.

Your Council regret to report in August last the death of one of its members, Mr. John James Browne. The following resolution of condolence was adopted by the Council and a copy of the same transmitted to his widow and family :—

"That the Council put on record their deep regret at the loss by death of their confrere, Mr. John James Browne, whose name has been identified with the growth of the City of Montreal during the last thirty years, and whose vigor and energy gave promise of many years of usefulness to come. His untimely death is mourned by all his professional brethren. The Council would also express their sympathy with the widow and family in their great loss."

In view of the short time between the decease of Mr. Browne and the annual meeting the Council did not consider it necessary to fill his place in the Council by the appointment of another member.

The Secretary's statement of receipts and the Treasurer's report are herewith submitted. The whole of which is respectfully submitted.

The Treasurer's statement shows a balance on hand of $139.16.

ALEX. C. HUTCHISON, Secretary.

The following officers were elected for 1893-4 : J. Nelson, President ; Chas. Baillairgé, First Vice-President ; A. C. Hutchison, Second Vice-President ; J. Z. Resther, Treasurer ; Joseph Haines, Secretary ; Members of the Council—A. T. Taylor, A. Gendron, J. B. Bertrand, Eric Mann, J. Venne, George Emile Tanguay ; Auditors—Theo. Daoust and J. F. Peachy.

A large and richly framed photograph of the original members of Quebec, was presented to the Montreal members, who tendered them a hearty vote of thanks.

A number of the visitors were entertained at luncheon by a few of the Quebec members.

At 2 p. m. a second sitting of the convention took place, when the following paper was read by Mr. A. T. Taylor :

BRIEF NOTES ON THE ARCHITECTURE OF THE WORLD'S FAIR.

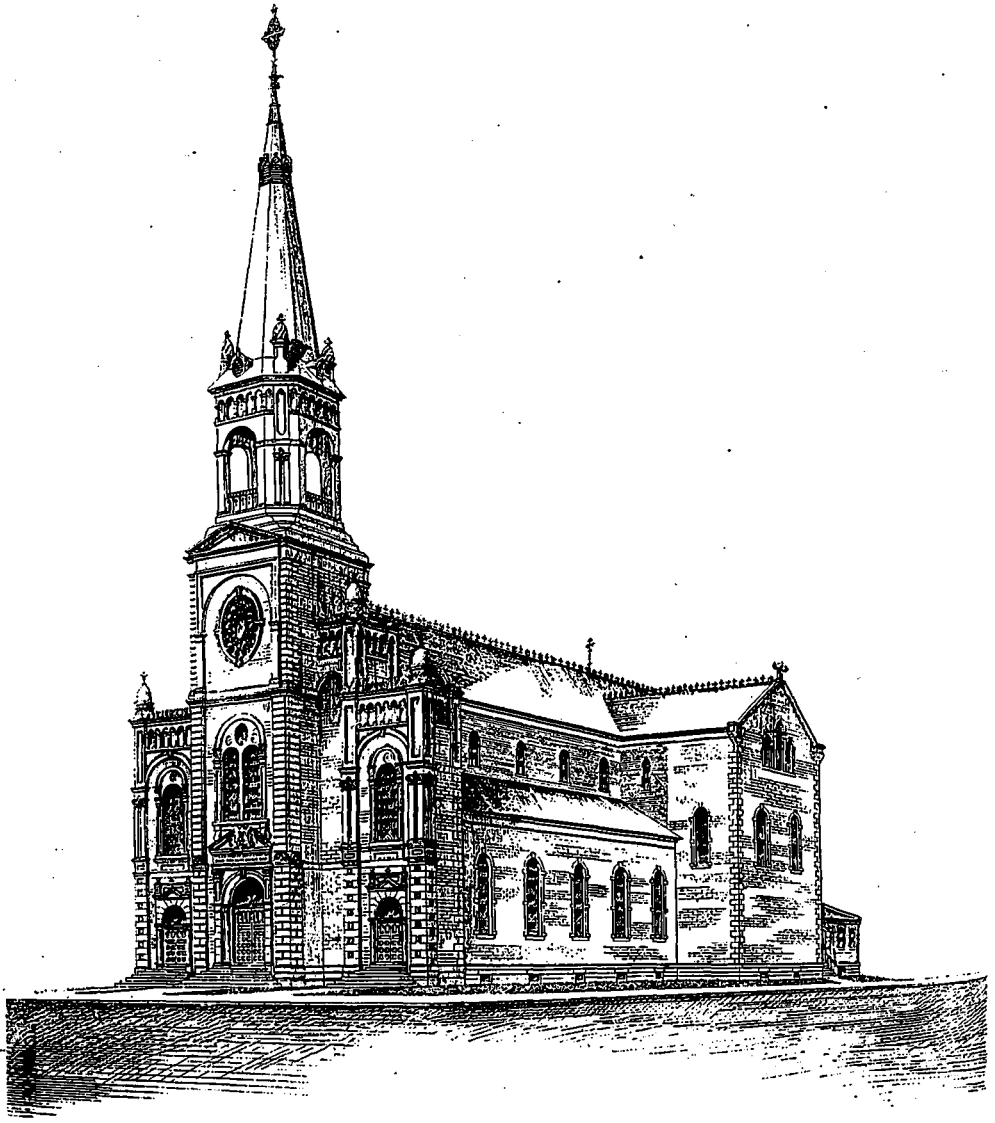
If you wish to realize to the fullest extent the power and potency of contrasts, go to Chicago, and from thence to the World's Fair. You will have shade and light personified. To pass from the noisy, dirty, half paved, half-baked chaotic city of Chicago, to the fair white city on the shores of Lake Michigan, with its lagoons and islands, pleasant winding walks, fountains, statuary and architecture, is like a translation from Purgatory to Paradise.

It is not often the happy lot of any members of our profession to be called upon to design an ideal city. The average modern city is not planned—like Topsy, it just grows, and we are only allowed to touch with the finger of beauty a spot here and there. One longs for the days of Pericles or Cæsar, or even those of the First Empire, when cities were laid out with beauty and effect and were an exquisite settings for noble gems of architecture.

When it was decided to grant Chicago her desire to be the host of the nations, it became incumbent upon her to take steps at once to arrange for the same in a worthy and fitting manner. The experiment was not new, for many previous exhibitions formed precedents for her guidance, but Chicago-like she determined to achieve a success which would at once leave all previous efforts hopelessly in the background. How this has been done remains to be seen. The directors of the Fair were fortunate in securing the services of Messrs. Burnham & Root, architects in Chicago, to formulate a general scheme for arranging the necessary buildings on the flat swamp of Jackson's Park ; and Mr. Olmsted, of New York, was also called in to prepare a scheme for laying out the grounds. With great wisdom it was decided to obtain the co-operation of the best architectural talent of the United States in designing the various buildings. Accordingly, Mr. Richard Hunt, Mr. G. B. Post, and Messrs. McKim, Mead and White, of New York, Messrs Peabody and Stearns, of Boston, Messrs. Van Brunt and Howe, of Kansas City, and Messrs. Henry Ives Cobb, S. S. Beman, W. H. B. Jenney, Adler & Sullivan and C. B. Atwood, of Chicago, and one lady, Miss Sophia B. Hayden, were selected for the work.

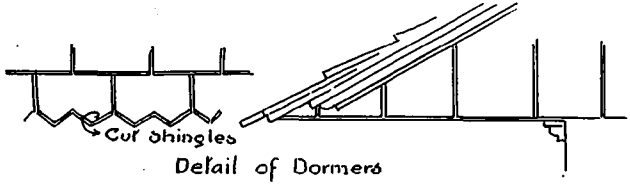
The general arrangement was mainly drawn up by Mr. Root, whose untimely death has robbed the profession of one of its brightest members. The conception was so grand and dignified that it was accepted with but little alteration, and the various buildings were then all located amongst the above named architects. It was considered advisable to adopt one style for the general exhibition buildings, so as to gain unity and harmoniousness of effect, and yet by bringing to bear upon the problem different minds, a variety and interest was obtained. The style adopted was a liberal phase of classic, ranging from the severe Greek to a florid Renaissance. Two important exceptions, however, were made, viz.: in the Fishery Building, in which a free treatment of Romanesque is adopted, and in the Transportation Building, which is orientally nondescript.

What probably strikes a visitor most of all, is the apparently substantial and permanent look of the buildings, and then follows the inevitable expression of regret that they are so soon to be demolished and fade away like a dream.

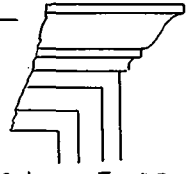


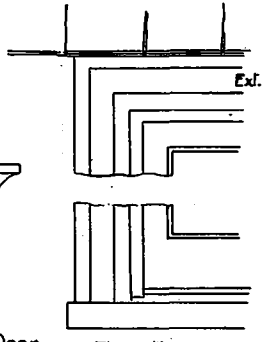
ST. JOSEPH'S CHURCH, OTTAWA, ONT.
W. E. DORAN, ARCHITECT.

EXTERIOR DETAILS FOR "A SMALL TOWN HOUSE"

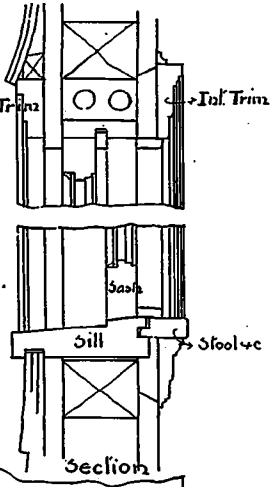


Detail of Dormers

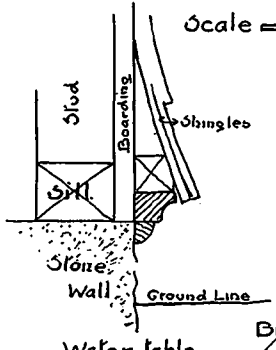

Cap over Front Door



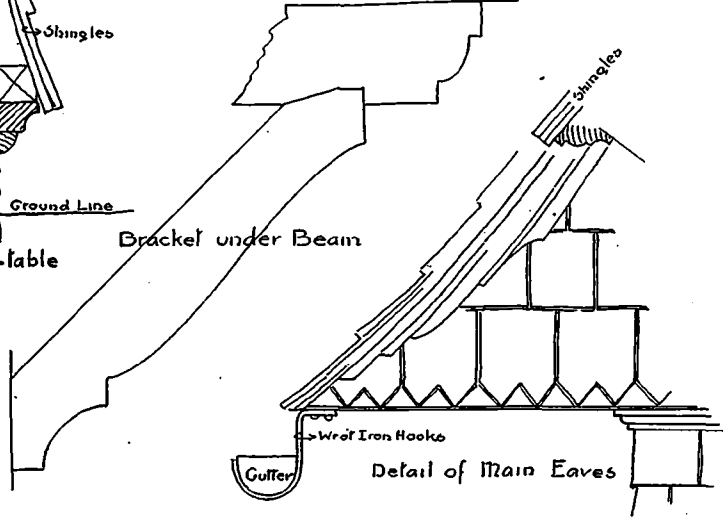
Elevation



Scale 6 12 Inches

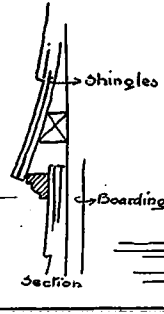


Water-table



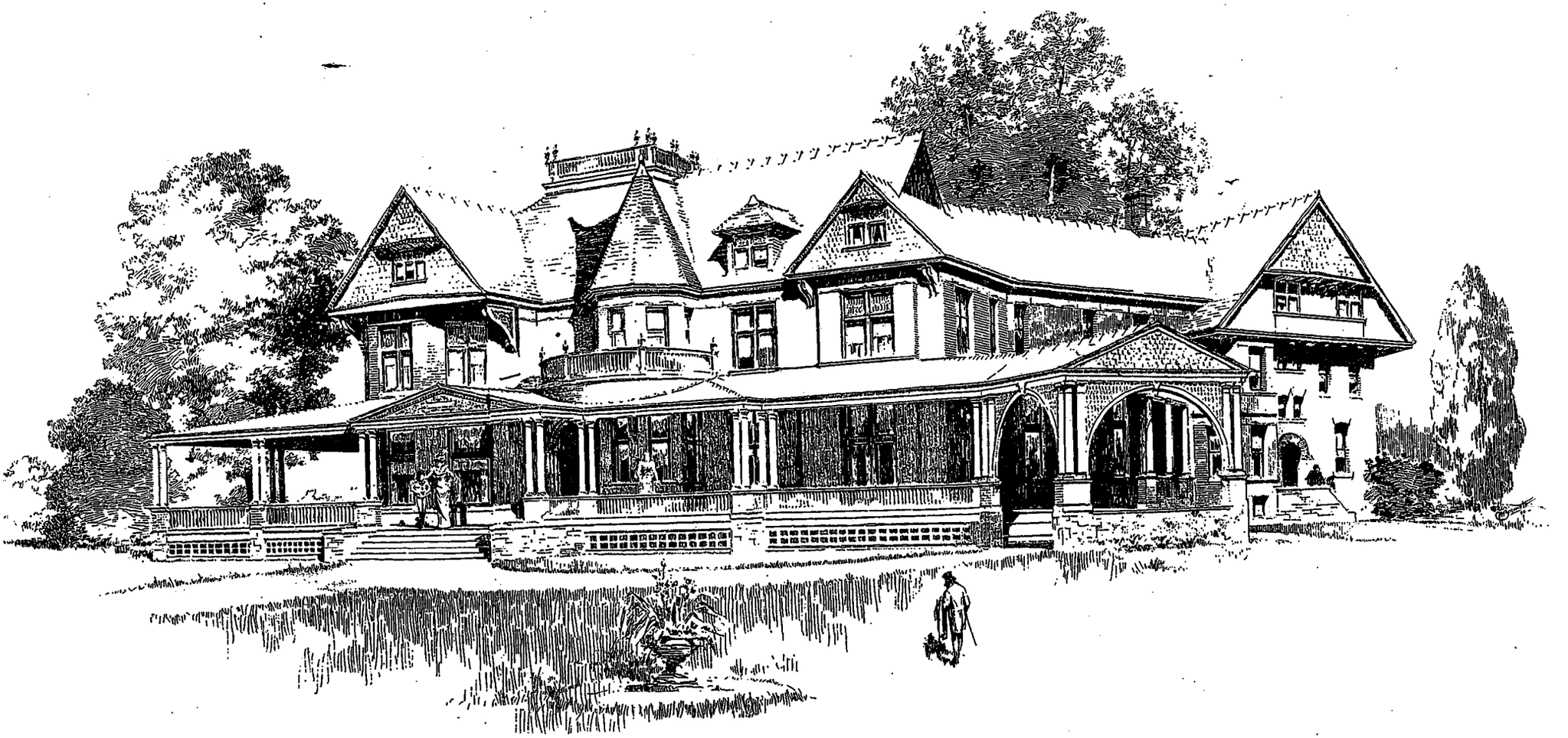
Bracket under Beam

Detail of Main Eaves



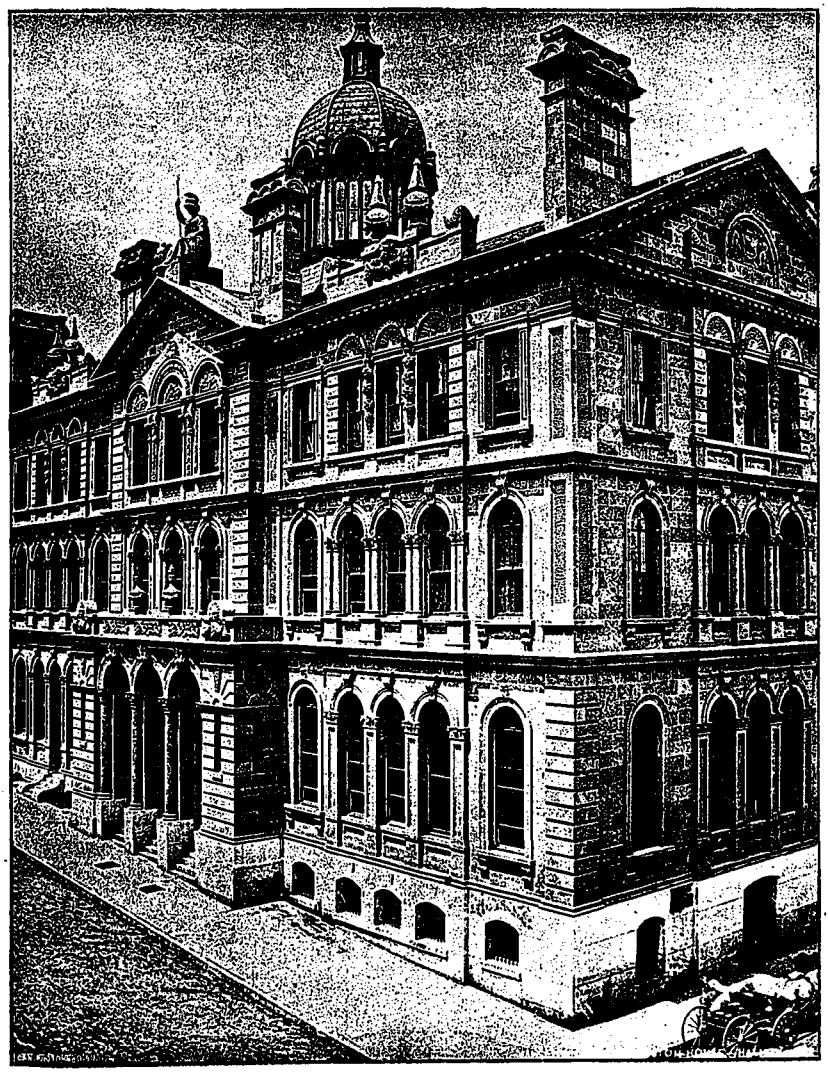
Section

Detail of Porch Columns.



SUMMER RESIDENCE FOR MR. A. W. OGILVIE, MONTREAL.

ALEX. C. HUTCHISON, ARCHITECT.



POST OFFICE, HALIFAX, NOVA SCOTIA.
MR. DAVID STERLING, Architect.

In the nature of things buildings for exhibition purposes have been more or less of a light, flimsy and evanescent character. Perhaps we may make an exception in favor of those of the last Paris Exhibition which were about the best hitherto. We may say as a general rule, however, that the exhibits were the attractions in previous exhibitions and not the buildings; in this case it is the buildings and not the exhibits. It is an undoubted triumph for architecture, and it has opened the eyes of thousands to the possibilities which lie in the work of our profession, to which they were previously blind.

Doubtless many architects who visited the Fair sighed for such an opportunity of distinguishing themselves in design as had been afforded the architects who were chosen, but he that will be faithful in much must be also faithful in little, and genius can be shown in a nut shell as well as in a cathedral. If we are but true to our noble heritage, and to our splendid traditions, and true to our better selves, we will pander to no evil tastes of the age, but will design the smallest buildings we have as well as we know how, making them instinct with truth, beauty, fitness and grace.

Whatever may be the results of the Exhibition on the industrial life of the world, I am convinced of this, that the architecture of the Fair will have a powerful influence on the architecture of this continent for good or evil for some time to come. The style adopted will be the predominant one, and we may expect to see reproductions of the various buildings more or less spoilt, springing up all over the country. One of the gravest results which I fear, will be the bringing again into use of the plastic material called "staff" or a modification of it. It has been found such a pliable adaptive material, lending itself readily to any shape, form or mode of handling, that people will forget it is only justifiable in its use for buildings of a temporary nature, and will endeavor to use it for structures of a more permanent character, the more especially as the gigantic and monumental character of the style adopted for some of the buildings would be enormously expensive if carried out in stone and such like permanent material, and there will be a great temptation, which I am afraid will prove to some people irresistible, to obtain the effect by using this "staff" or composition, to the destruction of truth and genuine progress in architecture. If such be the case, then the World's Fair of 1893 will mark a black period in the annals of architecture. It is not so long ago since we emancipated ourselves from the shams of "compo" fronts and the falsehoods which had well nigh strangled our beloved art, and were endeavoring to work on honest lines with honest material. Let us determine that we will not again be brought into bondage, being well assured that no architecture worthy of the name can live, progress and flourish that is not true and honest in every part.

I have had enlarged the general plan of the disposition of the buildings, so that those of you who have not been able to visit it will be able to form some idea of its arrangement, and I have also brought a few views of some of the buildings; but no plan or views or description can give you much idea of the charm of the whole—it is to be felt and absorbed gradually and cannot be expressed.

The Court of Honor, as it is called, is the great central feature of the general design extending from the lake up to the terminal station, and so arranged that visitors by rail as well as visitors by boat are at once introduced to the grandest spectacle of the exhibition and are profoundly impressed at the outset.

At the lake is a triumphal arch modelled on the Roman arches and flanked on each side by a well proportioned colonnade or peristyle, terminating in a well designed ornate building at each end.

At the terminal station end is the great Administration Building, intended to be the centre of the whole system and having a gilded dome soaring up into prominence. Down the centre of the Court is a large water basin encircled with elaborate balustrading, terraces and steps, having at one end a statue of the Republic 60 feet high, gilded, and at the other a highly ornate and florid Columbian fountain.

On the one side of the Court is the gigantic Manufactures and Liberal Arts Building, and the buildings for Electricity and Mining, and on the other the palaces for Agriculture and for Machinery, the whole forming a magnificent group. Of course to architectural students whose mission it is to criticize and probe and dissect, there is fair scope for criticism on many points. Exception has been taken to the buildings on the ground that in design externally they have no relation to the objects or exhibits they enclose, and were a few extraneous sculptures and frescos removed, the buildings could be all transposed without affecting them in the least, and could even be labelled Royal Palace, State House, Court of Justice, etc., and sustain the character well. There is truth in this criticism, but at the same time it must be borne in mind that the very buildings are themselves in the nature of exhibits, and that each architect vied with the other in producing a noble and magnificent building *per se*, and quite irrespective of its use.

It is manifestly impossible in this short paper to go into an exhaustive description or criticism of the buildings. Their general appearance and their virtues and faults are no doubt familiar to most of you. I can only touch on them in a cursory way, and by bringing the subject before you refresh your memories on perhaps some points.

It seems to me that the designers acted wisely in leaving the buildings for the most part the natural white color of the material. The most radical departure from this is in the Transportation Building, which cannot be said to be happy either in its design or in its color scheme. It is crude in color, unintelligible in motive, and ungraceful and disproportionate in its parts.

I can only speak in passing of the Women's Building designed by Miss Sophia B. Hayden, and which is most creditable to her. She stands, if I mistake not, in the proud position of being the first woman to design a building of such magnitude which has been executed, and it puts to the blush many of the secondary buildings on the ground, such as the United States Government Building, the Illinois State House, and others. We shall have to look to our laurels when our sisters enter into competition with us, and there seems no reason why women should not engage more largely in architectural designing, and the tendency I think is to do so.

Perhaps the building that is most satisfactory and pleasing is the Art Gallery, designed by Mr. Atwood, whom I had the pleasure of meeting. It is purely academic in its treatment—a severe form of Greek having been rigorously adopted. In its repose and quiet dignity, chasteness of detail, and simplicity of outline, it is very satisfactory and restful.

One cannot but be filled with admiration for those old Greeks who produced a style which reproduction thousands of years after cannot spoil, and whose translation into other purposes cannot quench the light of eternal beauty inherent in it.

Of the State Buildings I can only refer to one or two. Some of them have a strict relation in design to the State they represent, and are therefore fitting and pleasing; of these the California building, the Idaho building, the Massachussets building, as well as those of Colorado and Washington, are worthy of mention. Dotted about in every variety of style and color and material, they presented a bewildering and picturesque appearance. The Illinois State House has the unenviable notoriety of being perhaps the worst building on the ground.

Amongst the buildings representing foreign countries England has a modest but tasteful building in the English domestic style, well finished and furnished. The German building is most interesting, being finished with the fantastic and floridly grotesque decoration outside and inside characteristic of some of the Mediæval German buildings.

Canada, I regret to say, does not shine in its building. It is inoffensive and sadly commonplace, and conspicuously uninteresting. It is the more to be regretted as the position allotted to it is good, and the opportunity one which ought to have been taken full advantage of. Inside it is sadly lacking; whilst other buildings had comfortable quarters where any one could get rest in luxuriance and read the papers or write letters amidst inviting surroundings, the aim seems to have been in the Canadian building to make it as uninviting as possible. In justice it should however be said that the money available was quite inadequate for such a purpose.

The little Dutch house of Van Houtens' merits a passing word. The charming interior furnished with Dutch tiles, blue plates, old oak furniture, together with the quaint costumes of the attendants, make as pretty a picture as could be found on the grounds.

On the whole the treatment of the sculpture has been most effective and many of the subjects are of extreme beauty, but these would merit another paper. I would praise, however, the smaller subjects rather than the more gigantic.

The gilded statue of the Republic already referred to is very unsatisfactory—the back view especially being most ungraceful and stiff, and the whole rather coarse and unrefined.

The McMonnies' fountain, as it is called, which has been so much lauded, I must confess I could not like. It seemed to me melodramatic and very disproportionate, many of the figures being lanky and ungraceful and the details evidencing a want of balance and due e ation.

In a few months this white city, or city of white elephants, as it has been called, will have disappeared like a dream—only the Art building will be left as a memorial of the great Exhibition. If it has done nothing else it has proved the indomitable perseverance and skill of those who reared it. It has been a testimony of the ennobling influence of architecture and to the possibility that lies in the art for the magnificent expression of some of the highest emotions of man.

Mr. Chas. Baillairgé then read the following paper:

A PLEA FOR A CANADIAN SCHOOL OF ARCHITECTURE.

I had the satisfaction about this time last year, or during the annual meeting in Montreal of the Quebec Association of Architects, of visiting in your company the splendid new engineering buildings of the McGill University, since opened by His Excellency, the Governor General of Canada, on the occasion of the conversazione given by the Governor of that institution on the 24th of February last, to which I had the honor of being invited.

McGill has now endowed Canada with a school of theoretical and practical technology and engineering second to none on this continent, and equal in every respect to those of the older world, as at Kensington, England, at Aix, Angers, and St. Cyr, in France.

You will remember, gentlemen, and we have it from Professor Bovey's own utterances on the occasion, that he was given *carte blanche* by the promoters to go abroad and spare no expense in bringing together from any part of Europe, the United States and the world at large, machinery and models of the very latest design and excellence.

And yet this School of Engineering was if anything less urgent for Canada to have than a School of Architecture, which we should long ago have been endowed with by the directors of Laval University, had some of our

wealthy French Canadians came to the rescue, as has now been done by the munificent benefactors of McGill. I say it was less needed than a School of Architecture, for at this stage of our country's progress, our engineers do not require to go abroad for help or hints. In this respect we are now self sufficient, as even when the Victoria was run over the St. Lawrence, our Keefers were adequate to the task and there was no need of going to England for men unacquainted with our climate and who merely proved their common sense and prudence by adhering strictly to the Canadian engineers' design.

America has outstripped Europe in very many things: the 800 feet-span railway bridge over the Niagara, the more stupendous one of double the span between New York and Brooklyn. The Frith of Forth, of Scotland, to be sure, in its turn outstrips the Brooklyn with its twin arches of 1700 feet, and leaves the Eiffel tower in the shade, but its very boldness of conception was due to lessons taught on the Columbian continent, lessons from the United States and Canada, by our now nearly half a million miles of railway with their stupendous cantilevers reaching from cliff to cliff over rivers and ravines innumerable and of untold depth, across the Rockies, the Ne adas and the more than marvellous Colorado, and other heretofore so-called impracticable situations, but which our American engineers have mastered in spite of old world fogies pronouncing them impossible.

Nor need we in this respect allude to aught else than our own system of inland navigation which not only equals but surpasses anything of the kind in the old world.

Our engineers have not been slow to mould their minds, their works on the same vast scale as that of our waters, while European engineering has been dwarfed in some respects by having to deal with the narrower streams, the less precipitous rocks of the Eastern Hemisphere. We have the proof of this in our Quebec docks, where when looked down upon from the city ramparts, it makes one's heart sore to think of the millions that have been wasted in the construction of a jetty some 4000 feet in length, to enclose what? not as it should have done, a space commensurate with our increasing Canadian commerce, an extent of ground where a series of piers or wharves could have been built out southward from the jetty and made capable of affording berths for a score or more of ocean steamers, had the jetty been moved northward by 500 or a 1000 feet as it could and should have been; no, nothing of the kind, nothing but a mere strip, a few hundred feet, the veriest fraction of our comparatively immense estuary of the St. Charles at its confluence with the St. Lawrence, a basin where a vessel of any length can not even turn around in, but must back out of by the same route it comes in.

Had a Canadian engineer been entrusted with this work, such an anomaly, such a costly blunder, never could have occurred, and what is of concomitant importance, the engineers over the work, both resident and foreign, unacquainted as it is now evident they were with the severities of our climate, and with the stress against a dock wall exercised by such a semi-fluid material as the sand dredging with which the jetty is made up, and apparently entirely oblivious of the allowance to be made in a retaining wall for the surcharge brought to bear on it by the mountains of coal heaped upon the embankment, have made the walls so thin, so inadequate to stand the thrust, that they are now and have been ever since the filling in has been completed in the rear thereof, gradually and surely bulging outward to their eventual destruction, and tie rods are now being inserted through them and one hundred feet into the heart of the embankment where they are anchored to stay the ruin, while the unresisting nature of the made ground is such that the ties should have been taken through the 300 feet width of jetty and anchored to the opposite or north face or cribwork of the mole.

This subject of the strength of retaining walls is of vital importance, and that they are generally made of insufficient thickness to stand the thrust from behind is evidenced by the giving away of the revetment wall along Commercial street, Montreal, which, if of proper thickness, say not less than ⅓ the height, as if to bear the stress of water, and thicker where a surcharge is to be allowed for, should have lasted 100 years or more instead of 50, to say nothing of the walls of antiquity, many of which still stand solid and unyielding after a life of several thousand years.

Imported English engineering knowledge was again at fault, and where the climate could not be invoked or blamed for it, when from failing to test the nature of the ground by boring, as should have been done, the front wall of the Levis graving dock had to be removed 65 feet further inward or to the southward and the dock curtailed by so much in its length, an error requiring the construction of an otherwise unnecessary dam costing $118,000 and in other ways nearly doubling the cost of the improvement, while rendering the dock so much less frequently available to vessels of the length built now-a-days.

I have said, gentlemen, that we are now well provided for in the way of a professional engineering education, but we can not say as much for architecture. To be sure, a great step has lately been taken by the profession in this country, in forming an architectural association, and obliging would-be architects to submit to a thorough examination as to their technical requirements and fitness for the business.

Our friend Mortimer is also entitled to our suffrages for embarking on the courageous and arduous task, may it prove a paying one, of editing and publishing his now well known, well patronized journal of architecture and construction, styled THE CANADIAN ARCHITECT AND BUILDER. Members of the profession have entered, I am glad to say, on a course of theoretical and practical instruction for the benefit of students, and papers on pertinent subjects are read at meetings of the association in their rooms in Montreal, and re echoed through the length and breadth of the Dominion and abroad by he kindly efforts of the gentleman just alluded to, for the benefit of all. But something more is required to be done for students, aspirants to our ranks; a chair must be established in one of our universities with a paid professor having at his disposal the necessary models, the indispensable appliances for imparting knowledge of a technical and practical nature; just as for a course of physics, chemistry, electricity and the like, instruments and specimens are at hand for imparting a thorough knowledge of the sciences.

If no one can be found amongst us rich enough and patriotic to do the needful, our Government should be appealed to, to help Laval in this long talked of chair of architecture at the University, and what I am now about to add to these preliminary considerations will amply demonstrate the need of instruction in the theory and art of building. And engineers would, like their confrere architects, be amply benefited thereby; for the professions overlap in many instances, and in the same way that an architect must know something of engineering, as when building foundations in water, or when called on to design and carry out a viaduct, a light house, etc., so must the engineer trench upon the domain of the architect in the construction of a mill or manufactory, a bridge, an engine or power house for water works, electro motion, a grain or other elevator, a store for dockage purposes, a railway station, and the like.

During a professional career of now over 40 years as land surveyor, engineer and architect, I have had to design, estimate cost and superintend the construction of very many structures of all kinds, small and large: dwelling houses, churches and presbyteries, the Laval University buildings, colleges, convents, asylums, hospitals, hotels, schools, theatres, mills, manufactories, etc.; and engaged as I have been in hundreds of arbitration cases, relating to defects of construction, as in the settlement of untold accounts for extras arising out of faults of omission and commission on the part of builders, architects and so-called engineers and others; I have had abundant opportunity to notice the great and unpardonable ignorance displayed in scores of instances, of the simplest rules of the constructive art.

There is nothing more usual for instance, with the bulk of our would-be architects and builders than to be totally ignorant of the fact that the strength of a beam or joist is as the square of its depth, and inversely as its length, though they can hardly help seeing without any calculation that the supporting power increases with the breadth.

Do they even know the meaning of the term "square of depth," or if so would they not see that whatever unit they add to the breadth of beam, a fraction of the same added to the height or depth of a joist would produce an equivalent effect. Thus, while to double the strength of a beam its depth remaining the same, its breadth must be double; the same increment of additional resistance is added to it by increasing its depth by four-tenths only, or a little more than one-third of its vertical height, with a saving of nearly two-thirds in the quantity and weight of the additional timber, and the same of course in dealing with iron or steel bearers or supporting bars of any kind. To treble the strength, the advantage is more apparent; it suffices to add not the double of four-tenths, but only seven-tenths; while to quadruple the strength, the depth has only to be doubled, or trebled to make it nine times as resistant to any load it may have to support, and sixty-six and two-thirds per cent. of the material saved.

Of course there is a practical limit to thus adding to the height of beam to increase its strength; as, in the case of timber for instance, the deeper beam must be cut from a larger and more expensive log, and if very deep, staying or lateral bridging must be introduced to prevent shearing, twisting or giving laterally. And again the depth of floors can not be indefinitely increased, the height between them decreased by so much, or the height of structure added to in a manner to make it more costly or of ungainly aspect. What is more usual in scores of dwelling houses and other buildings, than to see the doors out of square, a table so much inclined that you cannot lay a pencil on it without its rolling off,—everything in the house is a word out of the perpendicular or out of level, and all this due to a settling of the centre of the structure attributable to sheer ignorance of the fact that the middle wall of a house should be of just double the strength of the outer walls; while in general not half so strong, or worse than that, no wall at all—a mere stud partition where the superposed bead and foot sills and joists and other horizontally placed timbers crush and shrink both by their own weight and in the action of drying. Then there is the incident cracking of the plaster due to the settlement; and the unhorizontal lines of the ceilings and skirtings rendered more strikingly so by the skew to which the vertically hung papering has to be cut at top and bottom to fit the inequalities, and which to a sensitive and appreciative eye cannot but be a source of mental agony, to say nothing of the bodily inconvenience of such a structure and of the expense of cutting doors to suit, displacing locks, latches, etc.

These defects, this saving of the cost of a central wall or other adequate modes of support by cast or wrought iron columns and bearers resting directly the one on the other, or an incompressible stone or brickwork, are often due to the parsimony of the proprietor, or to his ignorance, and in total disregard of the advice of his architect or builder; and the structure remains a crying disgrace and reproach to all concerned in its erection, and a source of discomfort and torment, as everything unaesthetic generally is, to all people of fine and cultivated feelings.

But there is also to be guarded against, the sagging of a floor between the supporting walls; and to this end it often suffices to remember that every joist, as far as possible, or at least every second or alternate one, should stretch right through the structure from front to rear, and so as to rest on all three of the walls, the centre one as well as the two outer, i.e. on three points of support.

The strength of a joist is thus doubled and its tendency to sag at the centre of the vacant space thus reduced by 50%; its stiffness, as already said, being in the inverse ratio of its length. Nor must it be forgotten that when no more than two points of support can be had, or the beam not long enough to reach the full depth, then may its rigidity be increased 25% by thoroughly sealing it at one end in the wall, or by 50% when similarly sealed at both ends; not forgetting either that whatever weight the beam will bear at its centre, it will bear twice the weight when uniformly distributed over its length.

My advice to the profession is to design the work as it should be in every respect, and to so specify it, and let the plans and paper writing there remain to show and prove thereafter, in case of accident or damage to the building, that you proposed what you considered right and essential; leaving it to the proprietor, though under written protest, to cut and curtail as he may please, thin out the walls, shorten the joists or reduce their height, etc., etc., for the sake of false economy.

I have had examples of this more than once in my own practice, as when some 40 years ago I designed the then parish church of Beauport near Quebec. Each of the towers I had planned to have four walls—in fact to make absolute towers of them from the foundations to the base of the spires, the steeples reaching as they did to a height of 200 feet. The church wardens, in their economical wisdom, decided on leaving out the two inner walls of each of the towers and supporting the corresponding corners or sides of the spires on a single angle post or pillar.

The consequence was that each of the spires settled and leaned inwards and towards each other. When called on some years later to remedy the evil and blamed for such a mode of construction, I produced the original plans showing the four walls as at first proposed by me, when the work was finally carried out as intended by adding the omitted walls, and I was of course thereby relieved of all responsibility for the defect or what it cost to rectify the error of the former curate and church wardens.

I have already alluded to retaining walls and to the fact that they should generally be built as if to withstand the pressure of water. Now, this is a case where it is difficult to make most people understand the necessity of so great a thickness. So do not fail, I advise you one and all, to design your wall as it should be, and in case of failure due in after years to any want of breadth of base, your section will be there to bear you evidence that the fault is not to be laid at your door.

I have not always been faultless myself in this respect, wishing to economize the straightened means of such a poverty stricken place as old Quebec; but have long ago found out that it is all false economy, and that for no reason however plausible should anarchitect, or an engineer condescend to any such thing and then be blamed for it, while at the same time subjected to the annoyance of seeing such a wall from year to year, first gradually losing its batter and then slowly inclining over, and in ten to twenty years requiring reconstruction. But the thing becomes criminal when, as in the case of government structures, no consideration of economy need prevail, as when and only as late as last year the wing wall of St. John gate, Quebec, was rebuilt after being put up of inadequate strength, in 1868, of a thickness still inadequate and probably again requiring reconstruction before another twenty years are over.

Retaining walls will of course fail from other causes than mere thrust of

the back filling, as where water can get into the filling or between the filling and the wall and freeze there from the omission of weepers to run it off, and the back filling should be rendered impermeable to water and thereby to frost by covering it over with some properly laid bituminous material through which water cannot penetrate.

There are other defects to be guarded against, as the bulging out of walls of certain structures by the stress of vaults and arches where not counteracted either by a proper thickness of the masonry only the strengthening thereof by buttresses, or loading from above by adding to the height and weight, or applying iron ties to counteract the spreading tendency, and bringing the walls together by heating and thus expanding every second tie and tightening up the nuts while the other ties remain undisturbed until in turn they be heated and curtailed in length by screwing up their nuts.

Appearances must also be attended to; the quoin or corner pillar of a building should not be less than that between any two adjoining openings, as when, as in the case of the Langelier block on the Grande Allée, Quebec, the door adjoins the gable wall. This defect should be corrected by widening the passage or even making a recess or a rounded corner in the adjoining room to allow of shifting the door in a way to get an increased width of pier.

Gentlemen, there is in our human nature an element of aestheticism: Certain proportions seem to be innate in us, planted there by the Creator, and irrespective of any tuition of the beautiful, they are so to say, engraved on the retina and thus rendered indissoluble. Likely this is due to the ratios in the human stature. We can all appreciate the true proportions. One is said to be too bulky for his height, too short, too stumpy; another too tall and slight; we do not like, we cannot bear to see a waist half way down the body, of which the normal height is at two-thirds or three-fifths from the ground we stand on. Even an illiterate person or a mere child will say of a building which is top heavy that it is ungainly, as of a person who is short-necked and his head resting on his shoulders. And this want of proportion of head to body is in no way better illustrated than when, in the arched or even square heading into a door or nitch or window, the impost moulding is set too high, as in the new side chapel of the Quebec Basilica where, the arched head of window being but one-fifth or thereabout of the total height, the architect should have kept down his impost by at least 4 to 5 inches below the centre of curvature to render the proportions satisfactory; and this, a fault of very common occurrence amongst architects and builders, should now that they are told of it, be strictly avoided in the future.

No one for instance likes to see a column divided in the centre, or its middle pointed at by an abutting cornice, or a plinth course, or by the head or transom of a door or gateway, or by the impost of an arched opening or by a notch of which either the top or bottom comes opposite the centre. On the contrary, if any such adjoining feature cuts the column, or abuts against it at just two-thirds the height above the base, one feels satisfied that the right proportions are observed.

Why are the reeds in the fluting of a column made just one-third the height of shaft? Try them at one-half and somehow or other you will not feel satisfied. Put two such columns side by side, one of which the fillings reach to half the height, the other to one third, and even the untutored eye will select the latter.

Have you ever seen a spire where if the height of angle minaret differ much from one-third the total attitude, the effect is pleasing to the eye. No, and any attempt to alter it materially is destructive of the effect; while on the other hand minarets and angle turrets reaching a bove aflat-roofed building are altogether out of place and objectless as introduced in a new house at corner of Daiquillon and St. Augustin streets of this city.

In the same way can we account, I believe for the rule laid down in classic architecture, that the first or main story of an edifice—the "rez de chausee" as they call it in France, must be about two-thirds of the combined height of the two stories which surmount it, and an attic story one-third thereof or two thirds the height of the story which it crowns, while the window in the classic attic I allude to must be two-thirds the height of the openings of the regular stories below.

A door must be in some way proportionate to the human form when properly attired, as of a woman with her skirts, say in height from two to two and a half times its width and never its width anything like equal to its height.

A room is not satisfactory, it will please no one, not even those who are incapable of knowing why or of giving expression to their dislike, unless its length bears a certain ratio to breadth and height. Our new Parliament buildings, Quebec, are quite a failure in this respect, and to the great detriment of economy of space and comparative cost of building which is only 50 feet in depth from out to out leaving but 15 feet for rooms on either side the corridor, and making mere guts of any room with more than two windows in it, which is the case with most of the committee rooms, as well of those for draughting purposes, and Works and Lands Departments; whereas, had the depth been made 60 feet, the building would have cost but a trifle more for floors and roofs only, with the same walls, the rooms have been 20 feet in depth instead of 15 and the stairs have had a proper tread instead of the break-neck things they are

Gentlemen, believe me, it is in no spirit of fault finding that I allude to these defects of construction, distribution and architecture; but it behooves us to educate our youth and public sentiment to a true appreciation of what is proper; and in the same way as I am now pointing out defects in buildings due to others than myself, so would I at all times be ready to admit the justice of any like criticism where I have been concerned.

Our new post office is, by general consent deemed top heavy—that is, there is too much masonry, too great a height of wall above the unduly shortened windows of the upper or attic story, and the contrary defect obtains to some extent in our new court house, where there is too little masonry in proportion to the size and number of the openings, which, had they been curtailed in height by just one foot or course of masonry would have restored the desired ratio "*le rapport entre les pleins et les vides*," as they say in France, improved the ratio of width to height of window; and maybe the mezzanine openings under the roof had better have been omitted, or if essential to light and ventilation, hidden—"dissimulées," as the chameteristic French expression has it—behind some ornamental open iron scroll work in imitation of the sculptured frieze of an entablature.

If I allude only to buildings in Quebec and do not reach to Montreal and elsewhere for comparison, it is certainly not that there be not something there to criticize, as is the too scant height above the windows of the sick wards of the new Victoria hospital at the foot of the mountain, the ungainliness of the N. D. Cathedral, the prison like structure at the S. E. corner of the Square and Great St. James street, thespace uselessly taken up by the stair well and passages in the new City Hall; but because I have not the buildings in my mind's eye, and I am of opinion, gentlemen, that no better paper could be written by any one of you, none invited or solicited from your city architects of more realistic value to students of architecture, none educative of and conducive to a proper appreciation of the aesthetic on the part of the public at large, than a paper like this, written in a proper spirit, without any desire of fault finding, and which may be discussed to the mutual benefit of all.

What would Mansard say if he could now behold the variety of section given to the roof that bears his name? and in dome construction why do we so far depart from the beautiful proportions of that of the "Invalides" at Paris

I will not say with the proverb that "there is luck in odd numbers." though I do not pretend to deny the fact; but there seems to be some reason for them even in the Scriptures, as in periods whether of weal or woe, famine or abundance, they are never counted in multitudes of 2, but where the odd unit invariably steps in to destroy the monotony of even numbers, and as well in breadth or horizontal magnitude, must these relations be observed as in the vertical already alluded to.

Try it and vary it as you will, the tower, the steeple must make some approach towards the one-third rule laid down of breadth of church facade, and so must the projecting or recessed central portion of any elevation of a building hold some relationship, some near approach to this same ratio of 1 and 2 to 3.

The old Beauport church already alluded to by me, and of which the facade and spire were over 200 feet in height, is a case in point, its towers like those of Notre Dame, of Paris, Westminster, of London, York, Strasburg, Amiens, Chartres, Tours, Bordeaux, Rheims, Orleans and others bore to the total width of frontage the due proportion and hence more pleasing to the eye; but the effect will now be destroyed in the restored structure by building the new towers, (with a view to not disturbing the interior) in a way to envelope the present ruins, thus increasing the distance between the towers without at the same time adding to their width and thus returning to the hybrid type of our Canadian church fronts with towers or imitation ones only one-quarter, one-fifth or less of the breadth of portal, instead of the majestic strength and beauty of the prototypes of ages.

Proportions must be adhered to or the thing becomes a failure, as in the case of the spire of the new church of St. J. B. of Quebec which, in spite of my forewarning, an old pupil of mine with Strasbourg and La Trinité, of Paris, before his eyes, has made an eyesore of from sheer want of 3 to 5 feet to be added to its diameter.

The odd unit is essential in almost every case. Do we not always have an opening, a door or window, a gateway, or the like, exactly in the central axis of a building, and even in a bridge or viaduct, do we not always seek if possible to have a central span instead of a pier right in the middle of a river or a thoroughfare.

There are defects of space which may be remedied by optical illusion. If a structure be unavoidably low, avoid the too oft repeated horizontal lines of belting and cornices, and rather do the contrary and throw it into vertical lines, which have the effect of adding to the height. The vertical flutings of a column lengthen the shaft while horizontal lines or spirally wound ornaments curtail the height, bring down the vault or ceiling and dwarf the building, as is the case in the St. Patrick's church, Quebec, where the spirally guilt belt around the shaft brings down the ceiling by about 4 feet, and I wrote and advised the Fathers of this when but one column out of about a score or more had been done; but clerical pride and obstinacy prevailed as usual, and my uninterested warning remained unheeded.

Nor must we forget to observe the natural in all we do; not only must a post, a pillar or a column be stout and strong enough to support a structure, but it must appear to be. So, when the material for instance is iron, it should be known as such, and painted in a way to look like what it is, instead of being made to look like wood or stone, and thus create anxiety and doubt as to the fitness of its size for the burden it has to bear, and how often do we not see this elementary rule of ethics outraged by dissimulating the true material under a coat of imitation stone or marble, where such material, reduced to so narrow a diameter, would not only be obviously inadequate to sustain the superincumbent weight, but not even self supporting when so long or tall in proportion to its breadth. Montreal in this respect I have observed to be often at fault, as when wide openings for shop windows, etc., are surmounted by heavy piers or walls and the supporting beam which must necessarily be of wood or iron is painted in imitation of the stone facade, while a stone of such an inadequate height in ratio to its length, could not even support itself without breaking, thus rendering it absurd in such a position unless supported from below by iron or other columns visible to the eye from the outside.

Again what is evidently strong enough to bear its burden need not, should not, be supported when the supporting member is not required for distributive and decorative purposes. One of our young and talented Quebec architects has been guilty of this by his introduction of a heavy cut stone column right up to and under the very key stone of the attic arched central window of a new store on Dalhousie street, Quebec. This column is not required for support and as a mullion it should only have reached to the springing of the arch and the curved space above have been thrown into two sub arches and a spandrel.

There are defects of crowding too, which should be steadily avoided, as where the bay and other lateral openings of the new Langelier dwelling on Grande Allée are by a foot or more too close upon the central corps and entrance portico, and otherwise objectionably placed in a way to leave too much blank space beyond them.

Gentlemen, we want a School of Arts and Architecture, a school of architectural and constructive technology, or more than one, where our youth may be educated to the necessity and advisability of all these observances, and the thousands of dollars annually spent in making good the defects alluded to would ere this have paid for and maintained many such institutions on a permanent and continuous footing.

Relating to the sanitary element, made up of drainage, light, ventilation, heating, we are now pretty well off for Canadian and Foreign periodicals dealing with the subject, and I would merely remark on one of these heads, suiting the temperature to the requirements of the outer air, that I do not see why, as indicated in my paper "The Free and Liberal Ventilation of Sewers," read before the Royal Society in May, 1892, some means should not be devised and put into practice of adding to our comfort by cooling the inner air in summer in addition to heating it during cold weather. For, in the same way that the colder outer air is heated on its way to the interior of a building by being passed over heated pipes, in a similar manner can this outer air when too warm to suit the human system, be cooled down by passing it over the same pipes then filled with iced water instead of hot, or directly over a bed or stratum of ice; and how efficient this would prove is evidenced by the fact which all of you may have noticed as I have often done myself, that when on a warm day a breeze or current of air reaches one in the open after passing over the surface of the ice in the uninclosed van as we have them in Quebec, the decrease in temperature or coolness of the ambient air is thus most striking and agreeable.

And in other ways less costly can the air be cooled, as it always is in summer during a hot day when a shower of rain occurs, by robbing the air of its heat to become vapor; by following the same process, imitating nature in an artificial sprinkling kept up during the hottest hours of the day, or better still, where it can be afforded, by artificial rain around the house or opposite an open door or window, by conducting a pipe under sufficient pressure to rise to roof level, so that perforated along its length like the sprinkler of a watering can, it may distribute its contents over so much of the eaves as to suit the purposes required.

As to fire proofing, I would merely say that the subject is most pertinent,

and it is satisfactory to see that a very free use is now being made of iron joists and concrete floors; nor can we reasonably hope for much more than this, with brick partitions instead of lath and plaster, as no one will ever consent to dwell or even pass his or her office hours within a building entirely of stone and brick and iron. No one can nor will put up with with any such permanent and continuous discomfort for the sake of an eventuality which may never occur, or so seldom as not to warrant the expense of iron floors and stairs and doors and window sashes and their trimmings, thus surrounding one with ever chilling influences and more dangerous contact in cases of collision or of a slip or fall.

I have already reminded you in my last years' paper on "Escape from Buildings in Case of Fire" that there can be no real or reliable fire proofing unless all joists and beams and columns and other iron work be protected under a covering of terra cotta or some other non-conducting substance, as the mere furniture in any building—the carpets, curtains and upholstery, beds and bedding, clothes and linen and the like, the goods in storage, are always likely to produce such a heat as to cause wrought iron to shear and warp and give way, cast iron to crack and break, especially when reached by a column of water playing upon it from a fire engine.

I now beg to bring this conference to an end by reminding you of the advisability of providing for escape in case of fire as I am glad to see you are doing to some extent, as in the new Victoria Hospital and elsewhere, but having read a paper on the subject at your last meeting as just stated, I need not now further insist on the precautions to be taken.

No provision, I am sorry to say, has, as yet, been made for escape in case of fire from the six story new so-called Fortress Hotel recently erected in Quebec, though the interior of the horseshoe is admirably suited to a series of continuous galleries, one to each story onto which any one could step from his bedroom window and in a moment reach the street level by one or more light iron stairways, the whole in no way disagreeably obtrusive to the eye. It is to be regretted also that this otherwise elaborate building should be disfigured by an ogee roofed turret instead of conical, like all the others, springing from the apex of the roof over the main entrance on des Carriere st. where it is altogether out of place to have one pyramid on top of another. The upper angle of the main building also obtrudes itself offensively to the eye in awkward proximity to the roof just alluded to, and which to hide the defect and ease off the difference in height between the kitchen wing and main building should have been made just one story higher than it is. The angle turrets, one at corner of des Carrieres and St. Lewis streets and the two at the south west end of building, do not produce the good effect they would had they been made like others to stand out from the angle instead of coming flush with it, but the greatest defect and eyesore so far, contrary to all rules of ethics and not to be for a moment tolerated by even the most uneducated eye, is the heavy stone gablet rising from the eastern front towards the St. Lawrence and resting partly on a pier and partly over an opening or window which in common sense should be if required, in some way made to look like the remainder of the supporting piers.

After the reading of the above paper, the delegates visited the new Frontenac Hotel, Garrison Club, etc. Carriages were in waiting to take them to see the ancient Beauport church, after the inspection of which they were royally entertained by Mr. Francois Parant, ex-Mayor of Beauport, in the old home of Montcalm.

THE BANQUET.

After the first toast, that of The Queen, had been duly honored, Mr. Roy, the retiring President, proposed the toast of the Government of Quebec, which was received enthusiastically. Hon. T. Chase Casgrain, Attorney General of the Province, being called upon to respond, said (translated from the French):

Mr. President and gentlemen: I thank you very much for having drank the toast of the Government of Quebec. I must tell you that the health of the Government of Quebec is at present excellent, notwithstanding that my friend Mr. Barthe here says to-night in his paper that it is a moribund government. I thank you for your kindness in inviting the members of the Government to assist at this sumptuous banquet. To Mr. Nantel and myself it is certainly a great pleasure to be among you; and I have been charged particularly by the Premier to say that were it not for his engagement in Montreal in connection with the reception of His Excellency the Governor General he would be here to-night.

I think history, in giving us an account of the building of the Tower of Babel, for the first time speaks of architects. We are told this was an enterprise which had to be abandoned owing to the confusion of tongues. To-night, however, we have no Tower of Bable to construct: there is no confusion of languages, no confusion of ideas, no confusion of any sort; but the large attendance and the look of contentment depicted in every face are indicative of the good will and harmony which exist among the members of your profession.

I know you will follow the example of your ancestors, who, I have heard it said, even in the time of Solomon, charged very moderate fees for their services. I have found out, since I became a member of the Executive, and since I have had to do with architects, that their prices are extremely modest. Another thing that I have had the pleasure of ascertaining is, that "ye olden time" architects had no tariff; and I am glad to see that you of the present day follow in their footsteps in this respect. I speak as a man of experience on tariffs. We impose on the lawyers a tariff, force them to accept a tariff, and what is the consequence? To-day lawyers cannot charge more than the tariff nor less than the tariff: they are bound by it. As a result, if a lawyer go to Ottawa to plead a case he cannot charge more than five dollars, and if we had no tariff, he would probably charge five hundred dollars: so there is no advantage there. Now, if you had a tariff, you would be in the same position: you could not charge more than the tariff, although sometimes you would feel inclined to do so. I am sure it would be so injurious to you that you would not be inclined to offer such a banquet as you have this evening. Gentlemen, don't make a tariff. In making a tariff you make a rope with which to hang yourselves. I would like to be able to convince you that a tariff would not be productive of the good which a great many of you would expect to see flow from it.

I shall not prolong my remarks, but would say, however, that you have shewn us an attention of which we should show our appreciation; and I can assure you that when you come before the Government with demands that are just and reasonable—I see my friend Mr. Berlinguet looking at me as if to remind me that I should not promise too freely—when you do come with demands such as you have made heretofore, you will find in my colleague, Mr. Nantel, a minister ready to give your profession that which all professions have in the Province of Quebec.

Hon. Mr. Nantel, Commissioner of Public Works, being then called upon, said (translated from the French):

Mr. President and Gentlemen: Like my colleague, the Attorney General, I am sensible of your kindness in inviting me as a member of the Government to attend the annual dinner of your Association. Like him also I understand the importance of this Association of Architects; I understand its importance from the point of view of the benefits which it will confer on the profession in general and on the individual member thereof.

I will not say very much to you of the tariff, because my colleague has told you what he thinks of it. His remarks as to the lawyer's tariff was certainly news to me, and at the same time you; and you must have been surprised to hear that these gentlemen were willing to renounce their tariff. I am sure the lawyers feel very much embarrassed about this. In this connection I am reminded of the fable of LaFontaine, in which he tells us of a fox who, having been deprived of his tail, tried to convince all his fellow foxes of the uselessness of this valuable appendage. The lawyers see themselves menaced in the profession of their tariff, because it is quite clear this tariff cannot be maintained; and should they in advance preach the inutility of tariffs for the other professions, they would be even more foxy than they are supposed to be.

Now to be a little serious, my advice to you is: Do not do as he says, but do as he does, and have a tariff. Have a tariff as other professions have, and as your profession has in almost every other country.

The profession of architect is one which, in every country and among every people which has been blest with civilization, has ranked high. Architects have always been the pioneers of good taste, prosperity and progress. Architecture is not only one of the fine arts, but also a science. It is not only useful, but is indispensable; and it has been said—and with good reason—that in judging the architecture of a country, we judge the degree of prosperity which they have attained, and of the civilization which exists among its people.

Gentlemen, you have formed yourselves into an association, and I for one entirely approve of it. In association is strength; for it is the union of all the individual forces in a great whole. The idea of associations is particularly strong in this country, where men in every path of life are united in associations for the better attainment of their ends as individuals; and associations are and will be respected so long as each individual does his own share and is prepared to often sacrifice his own particular interests for the general good. You, gentlemen, have taken the means of making yourselves respected, and will, no doubt, continue in the course you have up to the present been pursuing. Be great, be strong, be powerful: it is your right. On the other hand, you have certain duties to perform, and among the most important is the improvement of the means of studying your profession. It is your duty to elevate the standard of your profession, and have it do here what it has done in the great countries of Europe— in France, in Italy, in Germany, in England—and we may say with candor, in the United States. No doubt we find there specimens of architecture which are somewhat uncouth, but we also find there grandeur, purity and above all, originality. We have there evidence of accurate study of the great architects, who alone possessed the true aesthetic taste. In the United States they make strenuous efforts to approach the Grecian style of architecture as being the standard; and in Europe they find that the nearer they approach the Grecian style the more perfect are the architectural creations.

We have seen with great pleasure in the newspapers that there is question of founding a chair of architecture which will be affiliated to one of the existing universities, either in Montreal or Quebec. This is a grand idea; and I hope you will push it to a successful issue.

We need reform in the mode of building, and particularly in the mode of constructing houses in the cities and in the suburbs of the cities of this province. I might mention specially the suburbs of Montreal. When in Minneapolis some years ago, I could not but admire the style in which the houses in the outlying portions of the city are built. There they begin by making ditches for irrigation purposes, by planting trees, by levelling the ground, and so on, till the house with its surroundings is a thing of beauty to look upon. In Montreal, for instance, what do we see? Buildings put up in a field, without even any provision for drainage being made, and we know to what it gives rise from a sanitary point of view. I think architects should combine with the municipal authorities to do their utmost to protect the community against these abuses. Sufficient attention is not at present paid to the laws of hygiene by a great number of architects. I must say, however, that students of the

profession have not the facilities for studying up the subject which they should have.

With a chair of architecture established in one of our universities you will be in a position to force your pupils to make serious studies, not only in architecture proper, but also in a number of other branches which to-day are very intimately connected with architecture. By means of such a chair there will be uniformity in your studies, and students, on the completion of their course, will be better fitted for the important work which lies before them.

The vocation of architect is a great vocation. Only the full strength and energy of great talents can in this path attain success. Unfortunately, in this country, particularly among French Canadians, resources are very limited. We have not such chairs of teaching as our English speaking compatriots have. They have received noble assistance from some of their wealthy men, and I only hope that some of these days a Stephen, a McIntyre, a Smith or a McDonald among us, will donate $50,000 for the founding of a chair of architecture. This is desirable and, no doubt, will come, and our people will know how to profit by it.

I cannot further prolong my remarks; but before closing, I would say, as my colleague has already said, you may count on the Government when the question of the tariff will come up to consider it with care and to carry it out. I think I can say tath without compromising the Government.

I again thank you, gentlemen, for the kind invitation which you extended to us. Rest assured it shall be warmly remembered by us; and if there is any way in which we can be of assistance in the development of your Association, you may rely upon us to do all we can consistent with the duties of our position.

Mr. Roy (translated): Mr. President and gentlemen, I feel the necessity of answering some of the remarks let fall by the Honorable Attorney-General, particularly when he suggests to us the advisability of abandoning our idea of a tarifi. As the retiring president, I feel there rests with me a responsibility, and this responsibility weighs as heavily to-day as it did during the past year, to see this object carried to a successful issue. I have made efforts to have this tariff ratified by the Government of the day, knowing in advance that what we asked was not of a nature to injure the present Government, but, on the contrary, of a nature to render it aid and support; because the question of a tariff for architects is not like the question of a tariff for doctors, lawyers and notaries. The tariff that we ask to have approved by the Government is one that has existed for a great many years. There is no doubt as to the future, there is no fear that there will be any abuse. What we ask is simply a recognition of the value of the services of an architect, and this is the value established by the courts, and by the means save us from some of the difficulties under which we have labored here in the Province, and particularly before the formation of our association. I must say that since that time whenever we have been called upon in court to value the services of an architect, the court has gone with us. The question is always put to the architect who is a witness: Do you belong to the Architects' Association? Now, what does this mean? It means that the opinions of those who belong to an association recognized by the law is taken in preference to the opinion of one who is not a member. The tariff which we wish to have accepted by the Government is no different from that recognized every day by the courts. It might be said, well, if it is recognized by the courts, what is your reason for desiring so much to have it sanctioned by the Government? Well, the great advantage which the sanction of the Government would give is, that it would obviate the necessity of our going to the trouble and expense of producing a number of witnesses to prove our charges as being fair and just. The ratification which we ask, and which we will have, if not from this Government, from another, would in this manner be of immense benefit to us. The idea of a tariff was mooted and took form under the existence of another government: it has been kept in abeyance for a long while; but I hope and trust this Government will not neglect to advance it.

I thank the members of the Government present here this evening, and particularly Mr. Nantel, who manifested more good will towards us than his colleague, the Attorney-General. The latter gentleman, however, improved somewhat as he went on, and he may finish by being very good. That is, at all events, the hope of the Association. We ask nothing exorbitant. The proposed tariff is one which is recognized as reasonable and just in all the countries of Europe, France, Germany, Italy, England and also by the United States and Canada. In our Province, however, it is not recognized by the law. That is the only difference between our tariff and the tariffs existing everywhere else. As I said before, we must have this tariff sanctioned, and if not from the present government, from another one.

The President then proposed the toast of the Association of Architects of the Province of Ontario, and there being no member of that association present, Mr. Berlinguet was called upon to respond, which he did in a few well chosen remarks.

The Press was proposed by Mr. Baillairgé, who took occasion to say a few words commendatory of the work of the CANADIAN ARCHITECT AND BUILDER, and requested Mr. J. B. Mortimer to respond to the toast, which he did. He was followed by Dr. G. Stuart, editor of the *Morning Chronicle*, Mr. Lavasseur representing *L'Evenement*, Mr. Carrel, of the *Daily Telegraph*, and Mr. Barthe, of *L'Electeur*.

Honorable T. Chase Casgrain, in rising to propose the toast of the Province of Quebec Association of Architects, said:

Mr. Chairman and gentlemen:—It is my privilege it seems and also my pleasure to move the last toast upon the list, the Province of Quebec Association of Architects. I may tell you, gentlemen, that although in my remarks a minute ago I, to certain minds, seemed unfavorable to the Association of Architects, I certainly feel very warmly towards them. And if you knew what good friends I have among the architects of Quebec, I might mention Mr. Baillairgé, Mr. Bertrand and Mr. Berlinguet, you would say that I could not but feel very warmly, not only towards the individual members of your body, but also towards the association itself. I am very happy to see that you have been for a certain number of years formed into an association; and really I see no good reason why, among all the liberal professions, the profession of architecture should not also form an association in the Province of Quebec. The members of every profession seem now to be forming themselves into associations, and certainly, if the notaries, the doctors and the lawyers have the right to form close corporations, there is no reason why the architects should not also become a corporation and an association.

The question which at present seems to be of the greatest import to the architects, I may say this from what I heard fall from the lips of my friend, Mr. Roy, who even threatened the Government, is the question of a tariff. The question: is a tariff required? is the principal question now upon the tapis. This is the great question of the day. I do not know whether or not there is any question of a tariff reform among the architects. It was hinted that I am opposed to the architects' tariff being sanctioned by the Government. Now, this is not at all true, and I am going to make some very plain statements, as politicians always do, upon this most important subject. You need not think I am going to beat around the bush, or that I am going to say things I do not intend to say or do not mean: I am going to be very explicit, as you will see when I am through.

You all know that since we have had the great pleasure and the great honor of administering the affairs of the province of Quebec, we have been kept very busy by our friends on the other side of the House. We have been obliged to fight our battle. We have been in power only eighteen months, and of course we have dealt with very important questions. The question of the architect is an important question; but we have dealt with very important questions; and, to tell the truth, we have not been able yet to consider this plan of tariff. Other tariffs, for instance that of the physicians, have come before the house, but up to the present not on account of any ill-feeling on the part of the Government towards the medical profession, but on account of the opinion which prevails that the country is not yet ready for it, we have not been able to sanction the tariff of the medical profession. Why? I do not know the reason. Why is it that the House will not allow us to do so? I cannot say. You will understand that if we have not yet taken up this question of a tariff for the architects, without wishing in any way to say anything disrespectful to the members of your profession, it is because we have had to deal with matters which were considered of more importance. We have not so far been able to come to it on the list, and therefore the Government has said neither yea or nay on it. We have it under consideration now; and, of course, as you know, governments generally keep questions of this kind under consideration for some time, and especially the good old Conservative party. But when we make a decision, you know that that decision is generally right, although it takes us a long while to come to the point.

Now, why is it, if the lawyers have a tariff, that the architects, who certainly belong to a liberal profession, should not also have a tariff? That is the question which I, as an individual, put to myself. Is there any reason, any moral reason, any political reason, why the architects should not have a tariff? Mind you, gentlemen, I am speaking for myself; I am not speaking as a member of the Government. I am not in any way binding the Government to any policy. Now, I may tell you this, if I am allowed to give you any advice—and this advice is all the better that it is not paid for; it is disinterested advice—when you frame a tariff, do not make it too high. Do you know what happened in the House to-day? We lawyers have a tariff, and we are suffering under the effect of that tariff. Our business is decreasing every day on account of that tariff being too high; and we have the threat that was made last year in the House that if our tariff was not reduced the House would take it into its hands to change the law so as not to allow us to make our own tariff, but to have it made by the Lieutenant Governor in Council or by the House itself. I understand that when an architect presents his bill before a court of law to have judgment rendered upon it that any member of your association can be brought up to swear that the charges made are just and equitable, and are charges which should be made upon certain works. Now, I would ask—speaking, mark you, simply as an individual—what would be the difference if you had a tariff sanctioned by the Lieutenant Governor in Council and forming part of our law? The only difference would be that instead of bringing up ten or fifteen witnesses to prove the charges contained in the bill you would

simply produce the tariff to show that your charges were not too high. This would be of great use to citizens and to the general public. Now, I think my friend, Mr. Roy, will concede that I understand this question, and that I am not against the architects. I have some arguments in favor of the sanctioning of the tariff; and I may say the only argument, if it is an argument at all against it, is that if the tariff is too high, the House will not bear us out in sanctioning it, but perhaps take upon itself to make a tariff or to abolish all tariffs in the Province of Quebec. You understand from what I am saying that this question is one of importance not only to architects but also to the Government and the country at large. It is a matter which deserves to be discussed from every point of view. Looking at it in this way, you will see why it is that up to the present the government has not seen its way to sanctioning this tariff. I know you will believe me when I say it, that this is the reason why the tariff of the architects has not been adopted so far.

Mr. Roy: you have been thinking too long.

Mr. Casgrain: That may be, but, on the other hand, you may rest assured that if we had not reason to fear that we might be checked by the House, it would be carried through. The House of course represents the Province, and until you convince the people of this Province that your tariff is what it should be, you will not be able to get it sanctioned by the Government or any Government which may come after us. It will be practically impossible, because we are subject to the rulings of the House, and I say now unless your tariff is reasonable,—and I think the one laid before us now is reasonable—and that the House is convinced that it is reasonable, it will not carry. I can say that you are greatly mistaken if you think that in the Government as it stands to-day you have any men who are against the tariff. If you will allow us to take our own time, if you will allow us to convince those who are not our supporters, I think you will achieve your end, and in a short time you will be able to applaud us even more enthusiastically than you have done to-night, although, I must say, you have received us with all due honors. But this, perhaps is drawing away from the subject upon which I began to speak.

I will now move that this toast be drank with all honors, and I hope and trust that your Association will always be found in the vanguard of progress, and that within a very short time you will achieve all the ends which you have in view, and as an individual, I hope your tariff will within a brief period of time be sanctioned by the Lieutenant Governor in Council.

Mr. Hutchison, Secretary of the Association, in response to this toast, said:

Mr. Chairman and Gentlemen, our Association is yet a young Association. It is only a few years since we appeared before the Legislature of this Province to ask for an act of incorporation. Now, I take it that in asking for such an act there were two objects in view, one of a professional or personal character, the other of a public character. Let us take the first one. It was in the interest of individual members of the profession scattered in the cities of Montreal and Quebec, scarcely knowing one another and having no interests in common, that they should by means of this association be brought into closer relations with one another. I think that object has certainly been accomplished in a very great degree. Since the formation of this association all the architects of Montreal have become well acquainted with one another as well as with the members from Quebec, who, before the passing of this act, were almost unknown to them. It has also had the effect of bringing closer to us the Association of Ontario, composed of men whom we did not know at all professionally.

Probably the second object under the personal and professional head might be this tariff that we have heard so much about to-night. I know that with a great many members the ratification of the tariff which has been prepared and submitted to the Government seems to be considered of very prime importance. Now, while it is important, I can hardly admit myself that it is of the importance with which some seem to invest it. Practically, a similar tariff has heretofore been in operation, though not legalized. It is the same tariff that applies in every country that I know where a tariff exists. France, England, British Columbia, Ontario have practically the same tariff as the one we have presented to the Government for ratification.

I think our tariff differs somewhat from the other tariffs referred to to-night. Take, for instance, that of the legal profession. If I understand it, the lawyer is bound to charge according to the tariff. Now, in our project it is distinctly provided that the tariff be not binding upon architects. An architect may make any other arrangement he pleases. It is simply a legal protection, so that when a question of charges arises in court we will be in a position to establish that the fees charged are legal. That is about all the good it will be to the profession.

From remarks which I have sometimes heard from some of our members, I judge that some supposed that when the Association of Architects was formed they were to get material benefit or profit from it. That is altogether wide of the mark. It never entered into my head, and I do not think it entered into the minds of any of the promoters of the association that the mere fact of the existence of an association such as we have got should be of any material benefit. I for one should oppose anything like trying to bring every man to the same level. I hope there is no one of our members who imagines that any act is going to bring the low high or the high to the low. Therefore, if the association has not met the expectations of some in this respect, I do not think it is any fault of the association.

Now, Mr. Chairman, in regard to the second object that we had in asking for an act of incorporation, the public interest. The art of building has become such a complicated affair now-a-days, that the structures that are being erected are of such a nature that a person to be a properly qualified architect requires a knowledge covering a very wide field in the sciences and arts. It requires a great deal of skill to be a good architect; and going before the legislature and getting this act was to prevent the public being imposed upon by parties who are not properly qualified. From this point of view it is certainly of much more interest to the public than to us of the profession. Now-a-days an architect requires not only artistic training for his calling, but he also requires a scientific training. The artistic and the scientific should overlap. There is so much steel and iron entering into our buildings that an architect requires a knowledge of the quality, strength and resisting power of these materials, which thirty years ago would not have been thought of. There is also so much to be known about hygiene that an architect requires to be posted on sanitary engineering. Electricity is making such advances, and is coming into such general use, that an architect must be able to wire a building and must know how to put electric plant in. Of course he may call in engineers to assist in all this; but at the same time he will be in a much better position if he be qualified to direct these works himself. The education of thirty years ago is nowhere to-day. But leaving aside all that, architects are called upon to design so many different sorts of buildings, such as mills and that sort of thing, that a familiarity with machinery is of the utmost importance in order to enable them to do their work satisfactorily. I find in the course of my professional work that I am called upon to build milsl, and I have to have as much knowledge of the laying out of machinery as a millwright. As a guarantee to the public who have to employ architects we should have men properly qualified. Our act of incorporation provides that all persons who enter the profession after the passing of the act should previously pass an examination to show that they are properly qualified for the profession. Before entering the profession a young man has to show that he has had sufficient preliminary training. This has been faithfully carried out. In fixing the standard for the final examinations a very high standard has been fixed; I hope it will become still higher, and so far only four men have been able to reach it. As I have already said, in the interests of the public it is necessary that we should have properly qualified men; and one deficiency which still remains in our system is the lack of means of training aspirants to the profession. We have so far no school or means of giving men wishing to follow this profession a proper training; and as I have before advocated, I think it is one of the essential things in connection with our association to devise some means by which the necessary education can be obtained. It is true we have already made representations to McGill College; and it has often been talked about that Laval University should establish a chair. McGill University, through the munificence of some gentlemen of Montreal, has one of the best scientifically equipped colleges in America, and it lacks very little to make it most efficient for the special training required for our work. But while Laval and McGill might establish chairs of architecture, the requirements would not altogether be met. There will always be a great number of young men who will enter the profession by entering architects' offices as students; and to give these young men the proper instruction it will be necessary to have lectures given either in connection with the universities or in connection with our association itself. I think most of the gentlemen present know that I have tried hard during the last two winters to establish classes for the instruction of our young men. They have not, however, met with the success that I had hoped for them; but I trust that by sticking at the work we will yet get it established on a good basis. It should be compulsory on every young man entering an office to attend a course of lectures such as I have referred to. He will then follow certain well laid down lines, and when he comes to the end of the course he will be able to pass his final examination to his own satisfaction and to that of the Board of Examiners, and will go forth fully prepared to carry on his professional work. The public, in whose interest, I contend, this act was passed, will feel that they then have a man upon whom they can depend.

There is one thing that I think is more important than the tariff, and I hope the Government will take it into consideration. It is the removal of one word from that act of incorporation. When passing that act of incorporation, the Legislature put the word "registered" in front of the word "architect". We want that word erased, and just have it left simply architect. As it is now any person can practice the profession of an architect. The inserting of that word has left the door so wide open that anybody can come in. Now, I may inform the members of the Government here to-night that there is a strong objection to this word "registered," and that the word "architect" is strong enough without being qualified in this way.

I have to thank you, gentlemen, for your kind attention.

After Mr. Berlinguet and Mr. Roy had made some further remarks on the tariff question, Mr. Lavasseur, of *L'Evenement*

proposed the toast of The Ladies. Mr. Gendron responded to this toast in most glowing terms, and was followed by Mr. Nelson.

Dr. G. Stuart, of the *Morning Chronicle*, proposed the health of the President, which was received with cheers, and the singing of "For He's a Jolly Good Fellow," and after a few words of thanks from the president, a most enjoyable evening was brought to a close.

LEGAL DECISIONS.

Messrs Langley & Burke, architects, Toronto, brought suit against Mr. R. W. Prittie for $85 for receiving instructions, inspecting property with Mr. Prittie and having discussions with him as to the damage done to the value of his property by the proximity of the Garrison Creek sewers and giving evidence involving two days spent on the property and the value of professional opinion. The Court gave judgment in favor of the plaintiff for only $30 on the ground that the law allows only $5 a day for certain service.

An important case, relating to conspiracy by a labor organization, was recently decided in England. It appears that the plaintiff, Temperton, was a builder and contractor. He made an agreement with some real estate owners to build houses for them, using bricks supplied by them. For some mysterious reason, this arrangement displeased the rulers of the Bricklayer's Society, who ordered their men in Temperton's employ to strike. The strike failed, and the officials of the society, as usual, sought revenge by other means. They found that he had contracted with a certain firm for concrete sills and lintels for the houses, and succeeded in persuading the firm to break its contract. Temperton brought suit against one Russell and others, as representing the Bricklayer's Society, for damages for this interference with his business, and was awarded by the jury the comfortable sum of two hundred and fifty pounds, while the judge granted a perpetual injunction to prevent future attempts of the sort. The Bricklayer's Society appealed, but the House of Lords confirmed the judgment on the ground that conspiracy to persuade persons not to enter into a contract with another, or to break a contract already made, with the object of injuring the the person with whom the contract had been or was to be made, was a malicious and wrongful act, for which damages could be recovered.

In re Westmoreland Green and Blue Slate Company. —In this case, reported in the *Monetary Times*, P. and Q. were working a quarry in partnership. P. also owned an adjoining quarry, and had the option of taking a lease of S. quarry. Wishing to form a company for working the quarries they called in A. and B. to assist them. A lease of the S quarry was granted to P., Q., A. and B., and on the same day the four entered into an agreement with the trustee for the intended company to sell to the company the three quarries for a sum to be paid in cash and partly in paid-up shares, A. and B. to receive 120 shares each. The company was formed. B. was one of the first directors; the agreement was confirmed and A. and B. received their shares. The company was ordered to be wound up, and it turned out that A. and B. had no interest in the property sold to the company, except their interest as lessee of the S. quarry under the lease of even date with the agreement and B. admitted that he had no interest in the S. quarry till that day, and had nothing to do with fixing the price. The articles provided that the agreement for sale should not be impeached on the ground of the directors or any of them being vendors or promoters of the company, nor should they be accountable for benefits secured to them. *Held* that B. was liable to contribute to the assets of the company equal to the nominal amounts of the shares issued to him and to A. on the ground of his misfeasance as director in accepting the shares allotted to himself. *Held*, affirming this decision, that although A. and B. had been *bona fide* owners of shares in the company, the transaction could not have been impeached, the insertions of their names as vendors when they had no real interest in the property sold was a device for enabling them to get fully paid-up share for their services in the promotion of the company, and that the issuing them was a misfeasance on the part of the directors, and that it was not known to the company, the clause in the articles did not protect B.

PERSONAL.

Mr. Ernest Willby, whose recent return from Europe was noted in a former issue, has gone to New York.

Mr. Arthur R. Denison has been appointed local architect of Dominion Government buildings in the city of Toronto.

Messrs. Gregg & Gregg, architects, Toronto, have recently opened at Ottawa a branch office, which will be in charge of Mr. A. H. Gregg.

Mr. E. F. E. Roy, Secretary of the Department of Public Works, Ottawa, on the eve of his marriage on the 11th inst., was presented by his confreres in the Department with a valuable service of silver.

Mr. David Kennedy, a well known builder and contractor, of Guelph, Ont., was killed on the 13th inst. by a falling wall, which was being taken down to make room for the foundations of the new opera house.

Mr. Geo. Walker, upon resigning the position of trensurer of the Toronto Builders' Exchange, was presented by his fellow members with a gold-headed cane. Mr. John Barnard has been elected as his successor.

The death by accident is announced of Mr. Geo. Tonsford, of St. Thomas, who received fatal injuries by falling from a bridge. Deceased was the oldest contractor in that city and built the greater part of the older prominent buildings, including the opera house.

TRADE NOTES.

The Toronto Radiator Mfg. Co., the well known manufacturers of "Safford" Radiators for steam and hot water heating, have just issued a new catalogue (to be known as Edition "B") which is a most elaborate work of the printers' art, and speaks volumes for the enterprise and tact of the Company in going to such expense to bring their goods before the Canadian public and tradd. The book contains complete illustrations of the many various styles and different sizes of radiators made by them, and opposite each cut is a tabulated list of dimensions with prices and telegraph code of the different heights which will enable the trade to readily get at the desired information in regard to radiators and the surfaces they contain. Nearly 200 half-tone plates of Canada's most prominent buildings follow, making a fine work of reference for architects and their clients as to the different styles of architecture throughout the Dominion. Still further on is a very comprehensive work on heating and ventilation, with tables, etc. We understand that the whole of this work has been given the most careful attention by the compiler and is authentic in every detail. The work has been copyrighted at the office of the Hon. Minister of Agriculture so that it cannot be pirated. A copy of the book will be sent to any of our readers upon mentioning the Canadian Architect and Builder.

Among recent additions to the catalogue of the Toronto Public Library is the work by Norman Shaw and T. C. Jackson, entitled "Architecture, a Profession or an Art."

MANUFACTURES AND MATERIALS

The Buckler Brick Co., Annapolis, N. S., will shortly make a shipment of brick to the West Indies.

British Columbia red cedar sash and doors and shingles are finding a market in Hawaii and Honolulu.

We learn that Mr. Williams, late manager of the Rockland Slate Company, is about to open up a new quarry at Danville, Que.

Portland cement, which twenty-five years ago was imported from New York, and cost $10, per barrel can now be purchased for less that $3.

The Council of St. Johns, Que., will shortly submit a by-law for the approval of the citizens to authorize the granting of a bonus of $10,000 towards the rebuilding by a Montreal syndicate of the works of the St. Johns Stone Chinaware Co.

The Longford Quarry and Lime Co., recently cut with plug and feather and shoved out in one piece a stone 78 feet long, 8 ft. 6 in. wide and 14 inches thick, and weighing over 50 tons. The stone was afterwards cut into large blocks for use in the new Union Depot at Toronto.

Mr. D. L. D. Winwell and Messrs, Miller Bros & Toms, of Montreal, were on August 30th granted a Canadian Patent, No. 44,110, for a hot water heating system.

Mr. Duncan Macdonald, of the St. Johns Stone Chinaware Co., is said to be organizing a syndicate in Montreal to carry on the manufacture of pottery on a large scale at St. Johns.

Mr. John Hyde, chartered accountant, has been appointed curator to the estate of C. B. Wright & Sons, of Hull. The assets are stated to be from $150,000 to $200,000, and the liabilities about $100,000.

American capitalists have outlined before the Quebec Board of Trade a scheme for the organization of a company to manufacture pulp boards for use in lining houses and in the manufacture of furniture.

The experiment is being made of shipping brick from Japan to British Columbia. The cost of production in Japan is very light, the wages paid to male and female operatives being 25 and 15 cents per day respectively. The brick can be shipped as ballast at nominal rates.

We learn from the *Canadian Lumberman*, that Dr. Mark, of Ottawa, has shipped to White River, a small station on the C. P. R., beyond Port Arthur, a house, 18 by 12 feet in dimensions, built in sections, to be used as a vestry and study for a young Methodist minister who is to take charge of a church recently erected there. The nearest sawmill to White River is 300 miles away and the nearest place where lumber is sold is 169 miles distant.

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