CANADIAN ARCHITECT AND BUILDER

FINE & INDUSTRIAL ARTS · DECORATION · FURNISHING · CONSTRUCTION · SANITATION · ENGINEERING

VOL. XI.—NO. 7. JULY, 1898 { PRICE 20 CENTS $2.00 PER YEAR.

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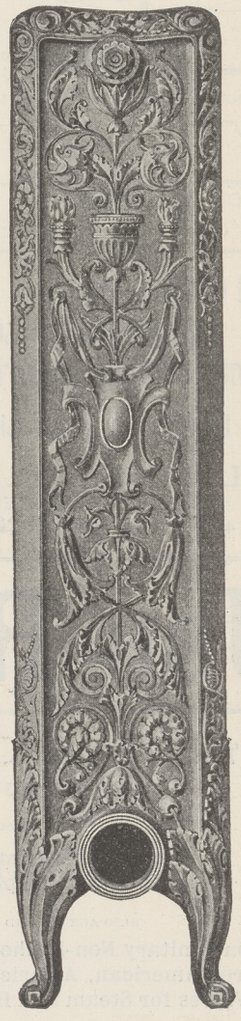

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CANADIAN ARCHITECT AND BUILDER.

VOL. XI.—NO. 7. JULY, 1898 { PRICE 20 CENTS $2.00 PER YEAR.

—THE—

CANADIAN ARCHITECT AND BUILDER,

A Monthly Journal of Modern Constructive Methods,

(With a Weekly Intermediate Edition—The CANADIAN CONTRACT RECORD).

PUBLISHED ON THE THIRD WEDNESDAY IN EACH MONTH IN THE INTEREST OF

ARCHITECTS, CIVIL AND SANITARY ENGINEERS, PLUMBERS, DECORATORS, BUILDERS, CONTRACTORS, MANUFACTURERS OF AND DEALERS IN BUILDING MATERIALS AND APPLIANCES.

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Fostering Native Art.

THERE is one condition attached to the expenditure of $50,000 annually on art in New York. The work upon which the money is expended must be the work of artists resident in the United States. This is money well invested. If art is to exist at all in a country it must have opportunity. There is only one way to attain to skill in art and that is by working at it. The sooner a nation resolves to do its own art the better for its art. It would be a solid advantage if there could be some reasonable sum to be annually disposed of in Toronto under the direction of the Toronto Guild of Civic Art, that some opportunity may be afforded also to artists and sculptors in this country.

A New Style of Competition.

THE practice of wolfing for work is not considered necessary in the higher walks of architecture in New York. It appears that when the commission for the new National Art Club was offered to Messrs. Carrere & Hastings they thought that as the proposed club was intended to be a haunt for architects as well as artists, a more clubable way to proceed would be to take equal chances for the work with other well known architects of New York. Accordingly, after a luncheon in honor of the proceeding, Messrs. Carrere & Hastings, McKim, Mead & White, George B. Post and Babb, Cook & Willard drew lots—a process much less exhausting than, and quite as satisfactory as a competition. The result was a parable for the lot fell, after all to Messrs. Carrere & Hastings.

Professional Ethics.

IF good professional ethics in relation to one another were the rule among architects, while the conditions of practice would be more conducive to doing good work the total result in the distribution of employment would be much the same as if the "get there" idea were to prevail. Professional habits, as followed by those of the profession who have, as the French say "arrived," are rather an index of how they achieved their position than, as is sometimes supposed by the irregulars, a creation to help them to keep it. The only way to permanent success is expertness, and this is to be attained not by working for work but by working at it. The

young architect whose ideal or practice is to become a man in the street, dusting about to procure work for draughtsmen to do, has entered upon a career which can have only one end, the gradual elimination of real architecture from his work, and his own gradual elimination from a profession in which the first requisite is, after all, architecture.

Art Commissions.

ART commissions for large cities is becoming an established institution. There are several in the United States and one in Canada, in Toronto. The powers of the commission vary, but all possess the essential characteristics of voluntariness and independence of the city vote. The new act creating the art commission of the city of Boston, which we have before us, provides a commission consisting, besides the Mayor, entirely of head officers of different institutions of the city; the president of the trustees of the Public Library, the president of the trustees of the Museum of Fine Arts, the president of the Boston Society of Architects and the president of the Massachusetts Institute of Technology. The titles of these officers suggest a safe rather than an adventurous commission. In New York the commission is disposed to take the initiative, and has proposed the erection of a $100,000 fountain in Central Park. The price is mentioned as $100,000 to $150,000, so that perhaps the larger sum may be taken as the proposed price. As the city of New York is allowed to spend $50,000 annually on works of art it would not take long to pay for this work.

Sizes of Bricks.

IN England the size of bricks is fixed by law, and it would be well if some member of parliament would take the subject in hand and bring up an act in the Dominion to fix the size of bricks to be used in this country. For want of such a law here, the building interests are often handicapped. A thousand bricks, when each brick measures $9 \times 4\frac{1}{2} \times 2\frac{1}{4}$ inches, make a different sized wall from one made of a thousand bricks where each brick measures only $8\frac{1}{4} \times 4 \times 2$ inches, and yet there is this difference—and even more—in the size of Canadian bricks. If all bricks were made to one uniform size throughout the whole Dominion, contractors in Vancouver would be able to estimate on brickwork in Halifax with a certainty that their quantities were right, and one of the reasons for wide discrepancies in bids for work would be removed. A good size for a brick is $8\frac{1}{4} \times 4 \times 2$ inches. This size is easily wrought, is a good size to burn, handy to lay, easy to bond, and has a good appearance when in the wall. A brick this size contains 66 cubic inches, and if hand-moulded and well burned, weighs about $4\frac{1}{2}$ pounds, or 118 pounds per cubic foot, 14,223 pounds to the cubic yard, or 498 bricks per ton. Pressed bricks this size will weigh about five pounds each. If made wet, either brick will absorb from half to three-quarters of a pound of water. There have been very few failures of brickwork on account of crushing, and, while some bricks have withstood a compressive force of 13,000 pounds to the square inch, it is wise never to subject them to a greater pressure than 250 pounds to the square inch. In heavy structures much care should be exercised in the choice of bricks, and those made in a yard situated near a limestone formation should be eschewed, for the occurrence of fragments of limestone, or other calcareous matter, occasion the destruction of bricks, owing to the caustic lime formation during the burning. When this becomes moistened the lime slakes and tears it to pieces, an occurrence that might prove a cause of much trouble in a wall or support laboring under great pressure.

French Professional Ethics.

THE annual calendar of the Societe Centrale des Architects Francais for the present year contains a statement of an architect's duties towards himself, his brother architects and contractors. The statement is signed by M. Charles Garnier, the president of the society which thus officially adopts it as a code. It defines an architect from the dictionary of the French Academy as: "The artist who designs buildings, determines their proportions, arrangements, decorations, causes them to be erected under his orders and controls the expenditure upon them." The architect therefore practises a liberal profession, not a commercial calling. His position is incompatible with that of contractor, manufacturer or furnisher of material in any way, and he is compensated entirely by fees to the exclusion of every other source of emolument resulting from his work or the exercise of his powers. If, therefore, he has taken out a patent for a product connected with building he does not exploit it himself, but sells it and all proprietary rights in it. Not being engaged in a commercial calling, he does not have any dealings which involve discounts or commissions, either received from those who wish for his patronage or given by him to agents and solicitors for capitalists or others whose patronage he himself desires. Nor does he seek publicity by advertising his capabilities in a commercial manner (which, we presume means to point to the impossibility of the same person fulfilling at the same time the role of self advertising for the purpose of making money and that, which he ought to fill, of a trusted agent acting entirely for the best interest of his employer without any other consideration coming in). In general the architect must have no dealings with any one which dealings must be a secret between him and his clients, either actual or prospective.

As concerns his professional brethren: The architect refrains from hostile criticisms and does not aim at a situation or connection obtained by a confrere. If by the death, retirement or dismissal of an architect another architect is called to take up his work, the new architect considers himself as the guardian of the honor and interests of the former one. An architect recognizes the condition of brotherhood in the profession; he is careful to let the rules of consideration between equals govern all transactions between architects, such, for example, as arranging that meetings between architects shall be held in the office of the oldest without reference to standing of success. In the same way an architect treats young men obtaining their professional training in his office as members of his profession and lets them have the full benefit of his experience.

In his relations with his client the architect devotes to him all his knowledge and gives opinions and counsels with entire regard to advancing the interests committed to his care. At the same time the architect does not allow his client to exact from him operations which would injure the rights of others, or which would compromise his client himself, or which would bring about accidents. In these cases he warns his client that he

cannot fulfil his wishes. He also warns his client when his instructions are such as to increase the proposed expense of his work. He gives from beginning to end a clear statement to his client of what is proposed by the plans and what the estimates and tenders come to, and forwards to him all accounts when he has verified and corrected them. He is remunerated by his client and by his client only, without receiving anything from anyone else connected with the works. Even when the works involve services to another person the fee based upon this expenditure is paid by his client, who recovers the amount from the other party or parties. In matters of litigation an architect declines to act as an expert in a matter in which one of his clients is a party. He declines to act as expert if he has already published an opinion upon the matter in litigation. If he is nominated as expert by a client, as, for example, in a question of insurance, he ceases to become the agent or representative of his client, and becomes merely an expert.

Towards contractors: The architect is fair and disposed to smooth their work as much as possible, but, as before said, he has no dealings with them which place either them or himself under money obligations one to another. He deals promptly and openly with all accounts between them and the owners, but does not pay them unless he receives a special commission from his client to do so. When an architect has a contractor or body of contractors as client, he is remunerated by fees in precisely the same manner as by any other client, and does not become involved in any element of commercial speculation which may be connected with the work. An architect who becomes a contractor or the clerk of a contractor loses the quality of architect. He does not lose this in becoming the clerk of an architect.

Plans and Specifications.

MANY contractors, when making estimates of work on which to tender, will examine the plans and specifications closely with a view of discovering some flaw or some defect or omission whereby they may evade some of the conditions, and by this means fail to comply with the spirit of the architect's intentions. There would be but little use of specifications entering into details and descriptions if contractors were allowed to interpret every disputed point to their satisfaction, for it is quite obvious every interpretation would be in the interests of the contractor's pocket, and to the disadvantage of the owner. If the practice of evading written specifications and drawings were not so common, the subject might be left untouched, but, from what can be gathered, the practice of wilful evasion, or violation, is becoming so frequent that the matter requires consideration. To make this clear, a few instances may be cited by way of explanation. A certain contractor agrees to build a house, according to plans and specifications provided, for a stipulated sum. The plans have been prepared by an architect residing some distance from the contemplated work. The contractor persuades the owner that the plans and specifications are complete, and that the cost of inspection may be saved, as he—the contractor—will see that everything is done properly. The owner consents, when a series of violations and evasions begin, that properly named would be called bare-faced robbery. The building is finished—according to the contractor's view—and the owner, to make sure that all is right, employs the architect, or some other competent person, to go over the building and to report. With plans and specifications in hand, the work is gone over, but paint, mortar, putty and sheathing have so hidden defective work and materials that the inspector cannot reasonably find fault with defects he cannot see, so orders some changes in the hardware, has a bolt put here, a sash-lock there, another step at the kitchen door, and a few shelves and drawers in the pantry, with a few more wardrobe hooks in the closets, and he has earned his

R.C.A. Exhibition. THE MODELLER. E. DYONNETT, A.R.C.A.

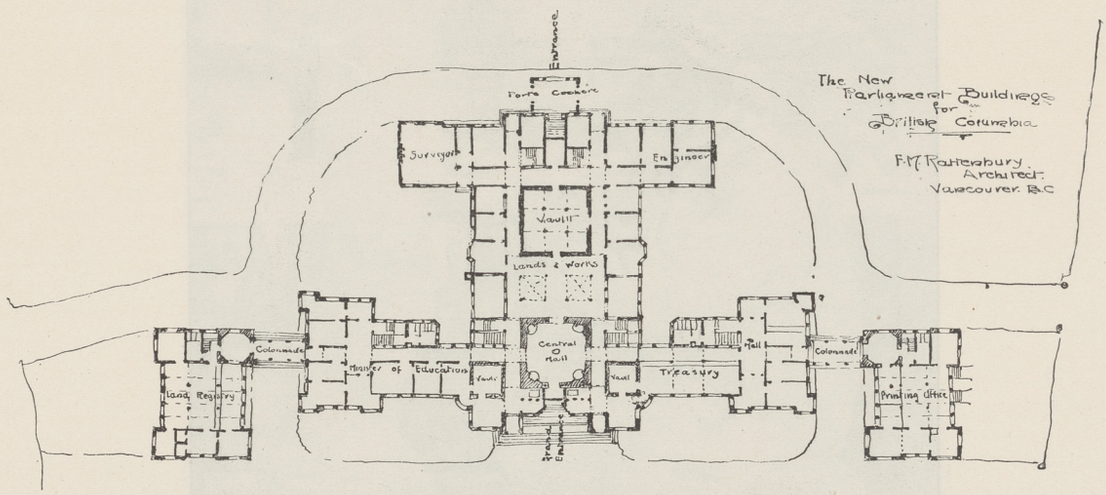
fee, while the owner is satisfied he has got a good job, and the contractor shakes hands with himself and pockets the profits he has stolen from the owner. A few years later the owner realizes the mistake he made in allowing himself to be persuaded to forego the services of a competent inspector, but he has no recourse —only, he never gives that contractor another job. Plans and specifications should be adhered to closely, and, though the architect may have erred in some small things, it is better—and wiser—to stick to the letter and the spirit of the plans, than to allow a contractor to change them.

ILLUSTRATIONS.

NEW LEGISLATIVE BUILDINGS AT VICTORIA, B. C.—F. M. RATTENBURY, ARCHITECT.

In the Canadian Architect and Builder for April, 1893, was published a rough sketch of the accepted design by Mr. F. M. Rattenbury for the proposed Legislative Buildings at Victoria, British Columbia, accompanied by a brief description. This design was submitted in a competition in which a large number of Canadian and foreign architects participated.

By the courtesy of the Premier of British Columbia, the Honorable Mr. Turner, and the Legislative Librarian, Mr. R. E. Gosnell, we are enabled to present, in this issue, from specially prepared photographs, exterior and interior illustrations of the completed buildings, which are designed in the Renaissance style and constructed of grey stone, quarried on Haddington Island, about 300 miles north of Victoria.



The buildings are roofed with slate obtained from quarries at Jervis Inlet. The granite steps and landings were obtained from quarries at Burrard Inlet and Nelson Island. Native woods and materials have, as far as possible, been employed throughout the work.

The buildings are arranged in three groups, so that while each is in itself complete, they are connected with each other by covered colonnades. The general arrangement of the building will be better understood by reference to the accompanying plan. It will be seen that, while each building has a separate entrance, yet direct access is obtained from the central main entrance hall.

The main entrance is reached by 44 steps, with two landings, and is flanked by two towers. On the left is a statue of Captain George Vancouver, an adventurous navigator, whose name is prominently identified with the early history of the North Pacific coast, and on the right by a statue of Sir Matthew Baillie Begbie, first Chief Justice of the province. It is ornamented with rich carving and guarded by wrought iron gates.

The rotunda, which is reached by this entrance, is octagonal in design, and surmounted by the dome, which is the principal feature of the exterior of the building. The height of this dome from the bottom of the foundation to the top of the surmounting figure is 165 feet, and the diameter 42 feet. The walls of the rotunda are lined with Tennesee marble to a height of 6 feet 6 inches, and at equal distances are square marble columns rising to a height of 30 feet. The floor is of mosaic.

The Legislative Hall is situated in the centre of the block, and has a corridor round it, with rooms for the use of the ministers and members, committee rooms, library, etc. On three sides an arcade is carried round, with galleries for the public and the press over the corridor. The Legislative Chamber is 61 feet long, by 39 feet 3 inches wide. A prominent feature is the solid Italian marble columns, 22 in number, extending along both sides and supporting the roof. These columns are beautifully variegated in color, the capping being black, the base a veined white and the columns themselves a rich dark green. They are surmounted by Ionic capitals and gilt scrolls. The walls between the columns are white marble. It is intended that the panels between the columns shall be filled in with paintings. The Chamber is well lighted from the ceiling by four dome-shaped lanterns, as well as by side windows.

On a level with the legislative chember are the Attorney General's apartments and the law library which are finished in native cedar. In the south-east corner are the quarters of the Provincial Board of Health, and in the north-west corner the executive council chamber, panelled in Indiana oak with oak parquetry ; also the provincial secretary's department. On this floor is also located the office of the commissioner of lands and works, and in the basement below are large vaults in which are kept the records of this important department. In the north-east corner is the Department of the Premier and Minister of Finance and the Treasury Department.

At the approach to the three departments on each floor from the central hall, a system of iron doors or bulkheads is arranged, by means of which, should a fire occur, it can be isolated and controlled. The buildings throughout are to a large extent fireproof in character, a great deal of concrete being employed, and the use of wood in exposed positions being, as far as possible, avoided.

The rooms set apart for the use of the Lieutenant-Governor and his suite are located on the second floor, also the departments of agriculture and mines.

The west wing is occupied by the government printing office and the east wing is intended for a provincial museum.

From the central hall charming vistas are obtained down the arched corridors, the windows of which are filled with stained glass of excellent quality.

The buildings are heated by steam generated by Heine boilers, located in the basement. At present the lighting is supplied by the City Electric Light Company, but provision has been made for the installation of an isolated lighting plant. The heating system was installed by the Bennett & Wright Co., of Toronto.

The construction of the buildings was largely carried out by local contractors, under the superintendence of Mr. E. C. Howell, of London, England. Contracts were let for each trade separately, tenders being based on carefully prepared bills of quantities in accordance with the British system.

The total cost of construction, including furnishings complete, is given in the provincial year book as being under $840,000.

NEW LEGISLATIVE BUILDINGS, VICTORIA, B.C.

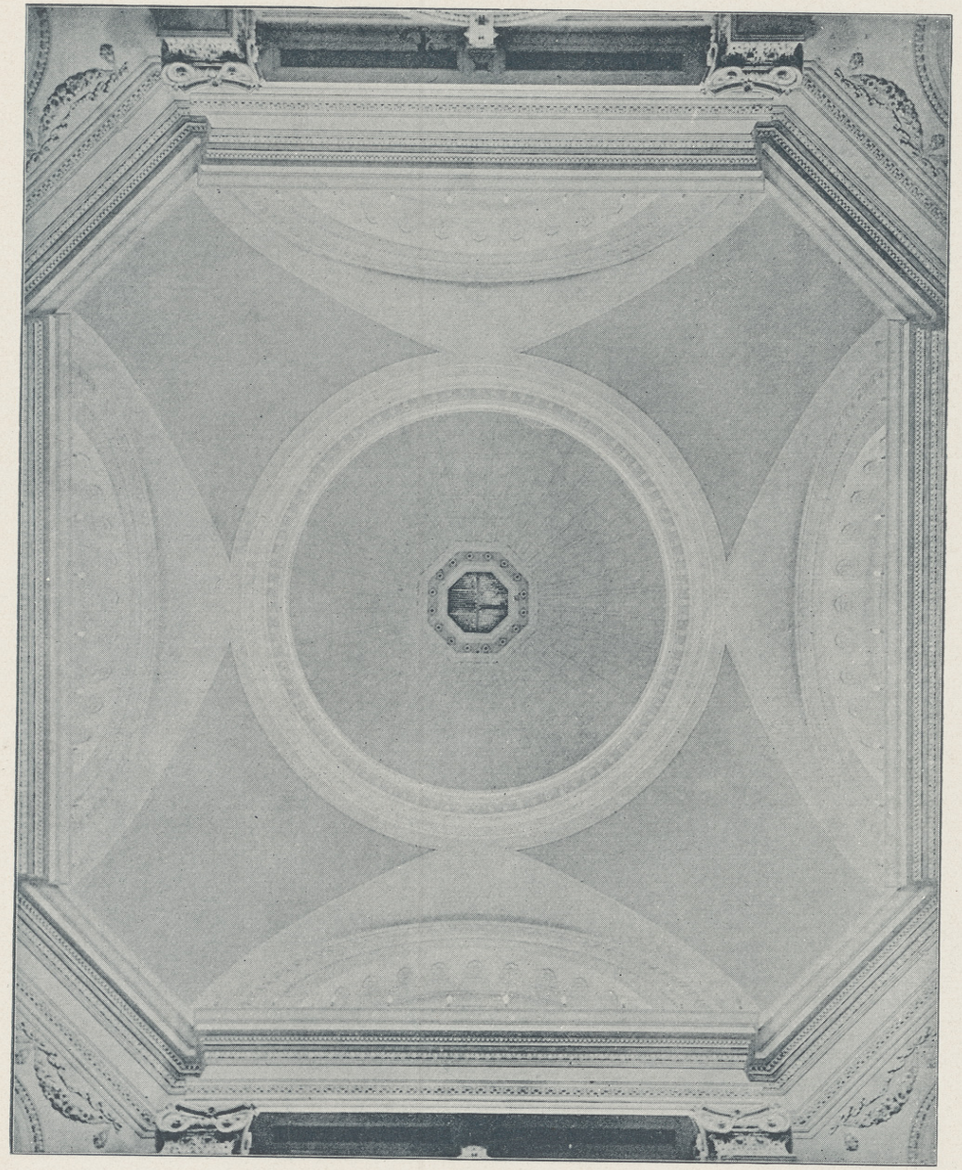
Entrance, with Iron Gateway; Showing Group of Members of Present Legislature.

F. M. RATTENBURY, ARCHITECT.

New Legislative Buildings, Victoria, B.C.—Front Elevation.

F. M. Rattenbury, Architect.

NEW LEGISLATIVE BUILDINGS, VICTORIA, B.C.—MAIN CORRIDOR, FIRST FLOOR, SHOWING SECTION OF STAIRWAY.
F. M. RATTENBURY, ARCHITECT.



Ceiling of Dome.

Rotunda Leading to Legislative Hall.

New Legislative Buildings, Victoria, B.C.

F. M. Rattenbury, Architect.

New Legislative Buildings, Victoria, B.C.—Main Entrance, showing Grand Stairway and Architectural Details.
F. M. Rattenbury, Architect.

NEW LEGISLATIVE BUILDINGS, VICTORIA, B.C.—LEGISLATIVE HALL.

F. M. RATTENBURY, ARCHITECT.

CORRESPONDENCE.

Letters are invited for this department on subjects relating to the building interests. To secure insertion, communications must be accompanied by the name and address of the author, but not necessarily for publication. The publisher will not assume responsibility for the opinions of correspondents.]

A MISREPRESENTATION.

To the Editor of the CANADIAN ARCHITECT AND BUILDER.

SIR,—In your June number Mr. Langton writes as follows: "Mr. Wells wrote a letter in your March number saying that the Ontario Association of Architects is wrong to advocate education for architects when what is wanted is inspection of buildings."

Mr. Langton is quite mistaken. I made no such assertion. The arguments advanced in Mr. Langton's reply to my first letter were based on this same false assumption. And in my rejoinder to his reply I endeavored to point out this fact. Since Mr. Langton persists in mis-stating my argument, and indeed waxes quite indignant that I should not be convinced and silenced by a reply that falls quite beside the mark, it is perhaps useless to continue the discussion.

By all means let the Ontario Association advocate education for architects in all ways and at all times. When have I said a word against it?

What I have said, and do say, is this: The prime object of the Ontario Association's existence has always been—and apparently still is—to obtain from the government power so that it may regulate various matters connected with the profession.

The CANADIAN ARCHITECT AND BUILDER contends that this power should be granted to the Association in the interest of public safety; I have tried to show that there are other more directly effective means of securing the public safety.

Mr. Langton declares that the architect must be educated; I have sought to point out that the highest education is obtainable in various ways, all quite independent of government-authorized machinery. While the champions of this legislation idea rely solely on arguments such as these, their case is surely not a strong one. And yet it is remarkable that they seem unable to get any further than this.

Anyone, ignorant of the history of the Association, and of what is the chief end of its existence, might read both of Mr. Langton's letters without once guessing that the organization in defense of which he was writing had the least ambition to exercise power in the regulation and restriction of the profession; much less would the ignorant one guess that the Association's desire for such exercise of power was the main object of attack by the correspondent Mr. Langton was engaged in answering. Indeed, the promoters of the legislation idea seem always to have thought it expedient to place much emphasis on some incidental benefits that the public have been encouraged to hope might result from the Association winning new powers; and no emphasis at all upon what the real nature and scope of these powers are to be. Yet this is the all-important question; and it is right that the Ontario government should think twice before delegating powers that might easily at some time or other be greatly abused.

Yours truly,

ARTHUR E. WELLS.

MUSKOKA, July 9, 1898.

To the Editor of the CANADIAN ARCHITECT AND BUILDER.

DEAR SIR: In Mr. Wells' letter, which you have kindly sent me, he comes out squarely as an opponent of the Ontario Association of Architects, on the ground that the real object of its existence is "to exercise power in the regulation and restriction of the profession." The only objection that can be taken to this ground is that there is involved in it an accusation of duplicity against certain well-known and respected architects who are serving or have served as members of the Council of the Association; for the avowed object of the Association is different from what he says is its real object, and we can only suppose that he conceives of the members of the Council as attending to its proceedings with their tongues in their cheeks. As a matter of fact, if this is Mr. Wells' only ground of opposition to the Association, there is no occasion for him to oppose it, for the Association has no object other than that which it professes to have, viz.: to establish in Ontario a profession of architecture in which all members of the profession must have the training which will enable them to practise the profession properly. The only way to attain this end is of course the usual way, of examinations on a standard curriculum, so that the Association is practically an educational body.

It has also one professional regulation: the agreement signed by all members of the Association, who sign the Register, that they will receive remuneration in connection with any work only from the client for whom they are acting in that work.

It might be a good thing to have a society which would regulate the profession more than this. It would probably do good at first, but might degenerate afterwards. In any case regulations are of the nature of medicine. It is better to make for the soundness of the body. It is in this direction that Mr. Wells will find the "nature and scope" of the powers which the Association has now in some degree, and which it has been seeking to improve.

To foster the architect; to make a professional man of him; to exact from him and towards him a certain standard of behavior, is one way of going to work; and perhaps it may be reasonably claimed that by thus improving the status of the architect, the quality of his work will improve. But who is sufficient for the demands of such a mode of regulation. A more certain way to improve the position of the architect, to give him all the recognition, honor and even emoluments which result from holding a place of importance in the world, is to foster architecture; to bring about the recognition of a high standard in what is required from the architect. This is a liberal policy, which no architect need be ashamed to support, nor need any legislator hesitate about giving powers to help on its execution.

The first step to its attainment is held by the Association to be a limitation in the use of the title "architect" to those persons who have passed a standard set of examinations, and have thus exhibited, perhaps roughly, but in the only effective way that has yet been conceived, that their general education and professional training is up to such a mark that they have at least the grounding found necessary for doing good work.

As Mr. Wells truly says, "the highest education is obtainable in various ways, all quite independent of government authorized machinery." This is quite true, but it is not the highest education here and there which will bring about the end advocated by the Association, but the attainment of a general level so fairly high that no man need fall below a certain point. This is the hope of architecture in Canada. We are not in the position of the older countries. We have no tradition, as they have in France and Italy. We are not surrounded by examples of the best periods of architecture, as they are in England, so that one may acquire, from constant association, ideas in unconscious progress, as we do our manner of speech. Everything that we know about architecture has to be learned, and it is necessary both to afford opportunity to those who know this and wish to learn, and an occasion to those who would not otherwise know what there is to learn.

As to the safety of the public, it is obvious that it is not the highest education of a few, but this same general level sufficiently high, that will furnish security to the public. Danger does not lie in tall steel frame buildings, nor in large public buildings where money is easy and an eminent architect is employed. It is the simpler practitioner who has to put the most strain upon his material, and he would be happier in his work, and take less risks, if a scientific training were thrust upon him before he began practice.

I remain yours truly,

W. A. LANGTON.

THE LONDON CITY HALL DISASTER.*

TORONTO, February 5th, 1898.

To the Editor of the CANADIAN ARCHITECT AND BUILDER:

SIR,—After reading the article in your valuable journal of Jan. 1898, upon the above-named subject, I made a calculation of the strength of the broken beam with the following results, which I beg leave to submit to your journal, with a few remarks upon the actual strength of pine joists or beams under transverse loadings:

I make the area of the floor supported by the beam that failed about 308 square feet, equal one half of $22' \times 28'$. Dimensions of beam $12'' \times 14''$, $21'\ 6''$ between the bearings.

Dead load on the beam would be about as follows:

308 superficial feet of $1\frac{1}{4}''$ flooring	963 lbs.
18 joists $3'' \times 13'' \times 15'$	2,212 "
1 beam $12'' \times 14'' \times 21'\ 6''$, including bolts	800 "
308 superficial feet of lath, plaster, &c., &c.	2,700 "
	6,675 "

Moment of inertia of the beam $= \frac{b.h^3}{12} = \frac{12.14^3}{12} = 2744.$

If we assume the ultimate strength of the lumber in the beam, or of the average stock pine at 4000 pounds, which I believe is a fair allowance, the breaking load would be $= \frac{16.f.I}{L.h} = \frac{16.4000.2744}{258.14} =$ 48530 lbs. Substract the dead load from this, and we have

* The above communication, designed for publication several months ago, was unfortunately mislaid. Owing to its value, its present publication is deemed desirable.

48530 − 6675 = 41855 as the live or superimposed load necessary to break the beam.

In a beam of this kind nothing less than a safety factor of 4 should be adopted—a factor of 5 would be preferable. Therefore $\frac{41960}{4}$ = 10464 lbs. as the safe load of the beam = to $\frac{10464\text{lb}}{308'}$ = 34 pounds per square foot of floor.

But from evidence given at the inquest we may assume that the strength of the beam was reduced about 25% by defects, such as knots, &c., so that the actual safe load the beam would carry was about 25 pounds per square foot of the floor it supported. Evidently some one made a bad guess when this beam was put in.

Whilst this sad accident is fresh in the minds of the public, would it not be a move in the right direction to interview the Dominion government and ask for an appropriation to pay the expenses of carrying out an extensive series of experiments upon the different Canadian lumber used in buildings, bridges, &c., such as struts, columns, joists, &c.

There is no reliable data to work from in the designing of wooden beams and joists, except the experiments carried out some 50 years ago on foreign woods one inch square, free from knots and all other defects. Such experiments are of little value, and not a fair representation of the strength of joists taken from the ordinary stock of lumber in general use.

A series of experiments made at the Watertown Arsenal, in the U.S.A., on full sized specimens go to prove that the data given by the early experimenters is not to be relied upon as correct for lumber in use at this date, the figures given being too high.

My impression is that it would be much safer to assume the ultimate strength of the outer fibres of pine at 4,000 pounds in beams or joists under a transverse load, and in designing beams or joists use a fibre stress of 800, 900, 1,000, 1,100 or 1,200 pounds per square inch as the case may require. The former would give a safety factor of 5 and the latter about 3½. With a higher unit stress than 1,200 pounds the deflection would be greater than good practice would approve.

In all modern specifications for steel beams a unit stress of 16,000 pounds per square inch has been adopted for the tension and compression flanges. This gives a factor of safety of about 3½ to 4. Now if it is considered good practice to adopt a factor of 3½ to 4 for safety in a metal that can always be got from the mills of a uniform quality, is it wise to use wood beams at a less safety factor, when we know that it is impossible to obtain lumber of a uniform quality and strength and without some defects.

In the United States tests above referred to, the transverse breaking strength varied between 3,400 pounds and 6,400 pounds per square inch. The quality of the lumber was good and free from large knots and other defects, but not selected.

If we take the average quality of lumber, I think 4000 pounds would be equal to the average strength.

It is to be understood that beams under the above mentioned fibre stresses, to be safe, should be braced by bridging or otherwise at intervals of about 20 times the thickness of the joists; and to avoid too much deflection the depth of joists may be got from the following: Multiply the length of beam in feet by 0.75 and the product will give the depth in inches.

Below I give formula for the safe loads of rectangular pine joists of symmetrical section:

For a fibre stress of 800 lbs.—f. $\frac{b.h^2}{L} \times 88.9$ = Uniform load.

"	"	900 lbs.—f.	"	× 100 =	"
"	"	1000 lbs.—f.	"	× 111.1 =	"
"	"	1100 lbs.—f.	"	× 122.2 =	"
"	"	1200 lbs.—f.	"	× 133.3 =	"

If these formula are followed we need not fear that another disaster would occur if a few dozen extra people crowded into a room at any time. b = thickness, h = depth, and L = length in feet. f = the fibre stress in pounds per square inch.

W. H. LAW.

The Board of Health of London, Ont., have adopted a by-law to regulate plumbing work in that city, and will recommend the same to the city council.

TEMPERING TOOLS.—Steel tempering is usually done in clean cold water; but Mr. Levat publishes the result of employing commercial carbonic acid to quench in, as a method practiced by him with greator success at the laboratory of the Faculty of Sciences, Paris. Two gravers made of Holzer steel were heated to cherry redness, and one was dipped in water and the other in carbonic acid. The superior physical qualities of the tool tempered in the new way were very evident on subsequent use.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

IMPORTANT amendments to the Plumbing By-Law of the city of Montreal have been prepared and have been read a first time in the City Council, as follows:

"Whereas, this council has been given power to establish a board of health and to grant thereto power and authority to take means to promote the health of the city, to provide precautionary measures against the introduction of diseases, etc.;

And, whereas, the existence, within the city limits, and especially within the densely populated districts thereof, of pit-in-the-ground privies is a menace to public health and a frequent cause of disease;

It is ordained and enacted by the said council as follows:

Sec. 1.—Paragraph (41) of section 4 of by-law No. 215, passed on June 4, 1894, and entitled "By-law concerning plumbing, drainage and ventilation of buildings," is amended by striking out all the words in the first three lines of said paragraph and by replacing them by the following so that the said paragraph reads as follows:

"(41).—No privy vault or cesspool for sewage, shall be, after May 1st, 1899, permitted to remain in any part of the city where water closets can, by means of a drain not over 200 feet in length, be connected with a public sewer in the street. When no sewer exists in the street, a permit for a temporary privy may be granted by the board of health; and in such case it shall be water-tight, of a capacity of 45 cubic feet; the sides and bottom shall be constructed of cemented brick, 12 inches in thickness and well cemented inside with hydraulic cement; such vault may be constructed of cast iron, the shape or form of which shall be either circular or oblong, without angles, and with a concave bottom; it shall be provided with a ventilation pipe at least four inches in diameter, extending from the pit through the roof sufficiently high as to prevent inconvenience to occupants of neighboring houses; the seats shall have a tight-fitting cover; it shall have an aperture opening exteriorly to allow of cleaning by pneumatic process, such aperture to be 2 feet by 1½ feet in size; or else the flooring shall be air-tight and shall have a tightly fitting trap door communicating with the pit; the top of the vault shall be one foot above the level of the ground; nothing shall be put into such pit, excepting human excreta; privies shall be located at a distance of 20 feet (or more, according as the board of health may deem necessary) from any house or street; they shall be emptied when the contents reach to within 18 inches of the top of the vault, by persons appointed by the board; no offensive smell or gases shall be allowed to escape therefrom. But, in no case shall a privy be allowed within the walls of a dwelling house or in any property situated in a street having a sewer."

Sec. 2.—The said by-law is further amended by adding, after section 5, the following:

"Sec. 6.—For each day after the first of May, 1899, that any privy vault or cesspool for sewage shall be permitted to remain within the city limits, in contravention of paragraph (4) as above amended, the owner of the property shall be liable to a minimum fine of one dollar, recoverable through the recorder's court on action of the health department or of any member of the board of health."

Sec. 3.—Section 6 of said by-law becomes section 7.

THE MORALITY AND ECONOMY OF COMPETITIONS.*

By B. Creswell.

Of the figures which are here presented for the first time, I may say that they have been modified from what was originally hoped and intended of them. It was found impossible to discover the actual number and value of all competitions in Great Britain over such a period as should afford an unquestionable average figure of competitions in any one year, because a large proportion of competitions are only advertised locally. In England alone, I have it on high authority, more than half of all competitions are not advertised or noticed in the professional journals, and from my own investigation it was made clear that both in Ireland and in Scotland the tendency is to preserve and confine competitions to their respective countries, a circumstance for which, under existing conditions, we can scarcely be sufficiently thankful. One is inclined to predict that, if these two countries opened their doors, and our voracity for competitions did not flinch from the new undertaking, the profession would, figuratively, fall limb from limb and rot away.

The figures and facts hereinafter dealt with, therefore, must be regarded as having reference to England only, but even here they are inadequate to give any idea of the magnitude and extent of the system, for the already stated reason of the inaccessibility of local statistics.

It should be explained in passing that it is upon the basis of averages that the subject is to be here dealt with. The system has manifest advantages over that in which special cases are enumerated. It is a fairer method, because in dealing with so wide a subject a selection of special cases can be made to illustrate any assumption or point of view, and prove any desired conclusion. It is clear, because it condenses the whole field of the subject to a single representative item, and reduces the whole matter to its vital and primal element. It is absolutely necessary, in considering this subject of competition, to regard it in its wide and general bearing as affecting the profession and the art, if any profit is to derive from that consideration. To investigate it from the point of view of the individual competitor, and with an eye to his personal welfare or disadvantage, is scientifically absurd, besides being obviously absurd in many other ways as well. There is little doubt that this horrible incubus of competitions which torments the profession would never have grown to a serious harm if we had considered the matter in its universal and general bearing, and not in its personal and particular aspect. Competitions, therefore, will here be dealt with in relation to the profession as a whole, and a scheme of averages is used as being the most serviceable to that end.

The following figures, which are presented in the annexed table, are the result of a search through the files of the Builder, both in the advertisement columns and those of the body of the journal, and cover a period of two years. As has been explained, they refer to England alone. In the years 1894 and 1895 there are some seventy-one advertised public competitions, or, say, thirty-six advertised in each year. The average value of a building for which competitive designs are publicly invited is £9,000, so that the value of the buildings whose designs are made in public competition advertised in the Builder is about £324,000 yearly. The average value of the first prize (and premiums may be considered to be always offered, though there are solitary exceptions) is £56, and, besides, a sum of £52 is divided in smaller prizes. The average number of competitors I find to be about forty.

Now, the cost of making the drawings in a competition of the value of £9,000 may be fairly put at £30 for an average case, being eight drawings at £4 each. This sum does not cover the time of the principal, but the actual cost of producing the drawings. It is true that this cost cannot be at all exactly stated, because the amount of work put into competition drawings varies considerably, for obvious reasons. It is, however, a fallacy to omit in computing this cost, such items as rent, light, and general office expenses, on the ground that they would have been incurred in any case; and it is wrong to consider that, because the principal makes the drawings with his own hand, they have cost him nothing. If he had done this amount of work for some employer he would have been paid, and by doing it for nothing he may be considered out of pocket to the extent of the value of the work. Indeed, he has probably lost more than if he had employed an assistant, because, should he choose to work for his hire, he could command a higher price than what he would pay his draughtsman. The special committee of 1872 stated in its report that the cost of producing competitive drawings (irrespective of principal's time) varied from ¼ to 20 per cent., and from £2 to £800, so that an assumed average of £30 in a competition of £9,000 seems well below the mark. This figure gives an average expenditure by architects of £1,200 upon each competition, or an out-of-pocket loss in each year of £43,200. This, remember, only refers to such of the public competitions of England as are advertised in the Builder. I find a slight decrease in public competitions in the last twenty years; but this seems more than balanced by the mass of limited and local competitions.

Gentlemen, I am not going to amplify and emphasize the significance of these figures further. This phase of the subject has already been done to death. But I claim for them that they establish and demonstrate our competition system to be commercially rotten and unsound—that it is irrational; that from an economic point of view it is a monstrous anomaly, and that it is the occasion of expense and extravagances which could hardly be justified even if the possibility of the system was shown to be widely beneficial to the dignity of the profession and the distinction of the art. This, however, is not the case. Our system of competition as a policy is so disastrous to the status of the practitioner, and so enervating to the art itself, that even if the economic considerations were satisfactory, and the system beneficial to the pockets of the profession, it could still be shown desirable that the system should either be abolished or entirely reconstructed. This question of policy may be considered quite apart and aside from the economic question, which we have now done with, but it is necessary to explain that the remarks and the conclusions proffered in this and the following columns, do not refer to those large public competitions for valuable and important buildings which are published and discussed by us all, but to the general ruck of competitions, including limited and local competitions, which are here designated and included in the term "our competitive system." Public competitions for national and monumental buildings, in which the best established and most reputable of our architects take part, must ever stand in a very different light, and be viewed with a very different sentiment, from that which is roused by the wild, tumultuous disorder of the common herd of competitions.

It seems to be assumed by many people that competitions are a means to the end—building. This, of course, is not the case. It is, indeed, conceivable that the noise and excitement of a competition in a small township may stir up and inflate the emulation of the bigwigs of neighboring towns, and infect with the fever of building those who otherwise might have remained spotless of the disorder; but this is too fanciful and conjectural to be seriously debated. The fact is that a certain number of buildings will be raised in a given year, and we may consider the existence or otherwise of our system of competitions to have no weight in deciding what that number shall be. This complex mechanism of public competition exists solely to determine which precise architect shall be employed to carry out this or that individual work; and after fifty years of this struggling and grunting and tearing and fighting among ourselves, it is still found that the architects of England have raised England's architecture—precisely the same state of things that would have been effected without competition, in peace and goodwill. Our competition system has crowded the profession, and crowded it very largely with ineptitude. In these days we all go in for the grand handicap for premiums before we know how to run. It is a scramble wherein all sorts of unlikely people come in first. The opportunities for a young man to find a standing in the profession by a single stroke of good fortune induces many to enter the profession who would not dare to face the long stern path by which alone success is usually to be sought. They are dazzled by a game wherein success relies so little on sterling ability, and so much upon the chance circumstances of prejudice and bad taste in ignorant people.

The policy of the system is detrimental also to the art of architecture, as well as to its practitioners, because it effects that the selection of architectural designs shall be made precisely by the class least qualified to form a right judgment. The class who acquire the right of selection under the system—the hanging committee in the gallery of architecture—are not merely ignorant, but they are saturated with the most blatant forms of vulgarity. Our competition system has secured that a large and important division of our national architecture, shall interpret and immortalize the ideals and aspirations of precisely the most degraded and insignificant class intellectually in the country; a class that is educated in positive ignorance, and cultured in execrable artistic proclivities and tastes. It is not, unfortunately, a case merely of

* Abstract of a paper presented before the London Architectural Association.

callousness or indifference ; the rural town councillors of remoter England positively select with a rare pains and discrimination the worst designs—not merely or necessarily the most hideous and ineffective, but just those which are most laden with studied assumptions they cannot support, which pretend to qualities above their kind and station, and which cry out their sham importance—precisely those designs which are least fitted to exist, which most insidiously degrade and pollute the morals of all who pass beneath their walls. The custom is to speak in fulsome terms of the enobling influence exerted upon the mind of man by true and refined architecture of lofty aspirations. If this be a just and true estimate of the potency of architecture to influence and modify the ever-changing moral tendencies of a people, and I do not think many will dispute it, we are entitled to apply the reasoning to the other side of the picture, and turn our attention to the false and mean qualities which characterize the greater part of our architecture. What horrors of infamy then do we not see being daily inculcated at our street corners, gentlemen, and what iniquitous deeds must be those performed in the trades of our bricklayers, masons and carpenters. And of these insidious stimulants to moral degradation, which are daily rising inch by inch throughout the country, some of the most evilly-intentioned are those raised in public competitions. The influence of these to undermine the pure motives of humanity in those whose life is spent under their shadow is the stronger and the more to be deplored, since the buildings hold a significance in being for the most part public buildings, the property of the township. The sermon of their stones is preached from an authorized pulpit. It is sufficiently melancholy that that class which, as has been said, is cultured in a positive ignorance of matters relating to art, and which is permeated with the undignified instincts and ambitions of small trade, should hold the privilege of perpetuating these deplorable instincts and ideals in the majority of the public monumental buildings in England ; but it is a great deal more melancholy that architects (in acquiescing in a system of competitions which grants these unfeeling creatures the choice of some forty designs) should have added the privilege that enables them to secure a design which portrays their own meagre commercial instincts, and their motives of brag, assumption, and self-advertisement much more thoroughly and effectively than they could reasonably have hoped to obtain from a private architect. It is true that an assessor is most usually appointed, but it is certain that he has little authority with the average town council upon a question of design, and nearly all conditions of competition expressly state that his award is not held binding upon the promoters, as will be shown hereafter. The tendency of our deformed system is to secure that a great deal of architecture is soundly and thoroughly vile, which otherwise might have been merely weak and poor.

There is a general approval of competitions on the ground that they give young men an opportunity of showing their worth. I have heard them called "the young man's friend," a touching phrase, which, however, lost in pathos from being employed by a young man who wins competitions. As, however, a young man must look to compete forty times for every first award he wins, we may rather consider them the "young man's enemy," for it is appalling to think of the host of young men who have thrown away their best energies and hopes in the preparation of useless drawings. The great names in art are not altogether those of men who have risen to acknowledged supremacy in early life, and early success is usually vastly detrimental to the artist. The very essence of true power is that it shall come of long vigils of self-denial and long years of self-contained labor. A genius usually has to make his own public. In these days the matter for remark is not slow acknowledgment of worth, but rather the numbers of men who spring into superficial notoriety, and who are never again heard of, or whose names are never associated with any admirable or commendable work. This is because men spring into notability upon specious and meritrecious qualities. Merit is content to wait; demerit is not. The men who are most successful in their professional life, in their art, are those who start without fallacious incentives, false aids, and without haste, and without greed of those rewards of acclamation and patronage which is the gift of the discerning British public.

It is a common usage to exclaim against the promoters of the competition when there has been inequitable treatment of the competitors, or a precedent has been made in new irregularities. This, however, is unreasonable. Competitions are not a matter of philanthropic consideration—there is no suggestion of philanthropic motives or of mutual concessions for mutual benefit. In any other transactions involving such large outlay and such weighty consequences, the architect, in common with his fellow-citizens, protects himself according to commercial usage, and there is no reason why he should make an exception in the case of competitions. A town council desire something for which it is prepared to offer certain moneys or advantages, and architects, by accepting those terms, have committed themselves beyond dispute as being satisfied with them. The promoters, regarding the matter solely as a commercial or business enterprise, can only suppose, from the rivalry and enthusiasm the competitions evoke, that they are esteemed and valued of the profession. It is no conspiracy on the part of the public, of the promoters, that has led to this lax and lamentable state of affairs, but a conspiracy of greed and weakness on the part of the profession.

The conditions of competition as now drawn up may be in general very fairly described as a sham legal instrument ; it is a sham form of contract wherein the obligations of the competitors are clearly and exactly defined, and the obligations of the promoters set in such loose, ambiguous terms as render them open to any interpretation that subsequent events may show to be most profitable to the promoters. The conduct of a public or limited competition is clearly a matter of contract, and it is the business of each party to see that his interests are properly protected in its terms. It is, therefore, weak and foolish for competitors to cry out and protest when they find that they have the worst of the bargain. It is usual in such cases to charge the promoters with having broken their word, with having falsified their explicit undertakings, but surely redress for such injury as is here claimed lies not in the sympathetic columns of the professional press, but in an action at the High Court. The truth is, however, that it is very rarely that promoters of competitions go back on their precise undertakings or falsify their explicit promises. This is not for any qualms of sentiment or conscientious scruples, but for sheer lack of any precise undertakings to go back upon, and utter dearth of any explicit promises to falsify. When an assessor's award is set aside, or when the winner of the first premium is supplanted in his commission to do the work, there are invariably long and loud protests ; pathetic appeals to common honesty and fair treatment from us poor architects, who forget our greedy rivalries for the moment and are bound in one common sympathy of misfortune. Someone read a paper once on "Professional Etiquette." One does not think it could have been unduly long. This common misfortune may be described as the only bond of sympathy still existing among us. But to keep to the subject of conditions of competition, I have drawn up a table which enables me to substantiate what I say. This table gives the gist of thirty-two conditions and instructions, as sent to competing architects, taken haphazard from the portfolio lately instituted for this purpose, in the library of the Royal Institute of British Architects. Upon this basis I find that in 50 per cent. of cases an assessor is appointed, that in 77 per cent. the premium merges in commission; that in no case is the winner of the first premium promised the work, but that, on the contrary, 54 per cent. state that the committee is "not bound to accept first award," and 35 per cent. state that they do not bind themselves "to accept the first or any design." That in no case is the assessor's award stated to be absolute, but that, on the contrary, in 100 per cent. (estimated on a basis of thirty-two instances) of the cases it is expressly stated or clearly implied that his award will not be absolute—that the committee do not hold themselves bound by his decision. I may also call your attention to other little delicacies offered, where the thoughtfulness of promoters is again instanced. In order to mitigate the fevered enthusiasm and passion of emulation with which they have noticed we fling ourselves into competition, they have docked the commission in some 16 per cent. of the cases by making the 5 per cent. include quantities or other extraordinary expenses. I also discovered four cases where no conditions existed at all, and also a little gem, where there was no premium offered, and yet another, where the ten guinea premium was to merge in commission if the work was carried out within five years.

I submit, that of the general ruck of competitions not one grain of professional or artistic enthusiasm has place—if enthusiasm may be estimated in grains. The desire to compete is born of unrest, worldly ambition, weak unbalanced inclinations and false hope bred of an incontinent longing for the plums of life before the just harvest time : to be got, not legitimately, but by a short cut. Every one knows that the knack of winning competitions is not the knack of design. Even Sir Gilbert Scott admitted that his designs made in competition were necessarily different from those he would have made for a private client. Professor Kerr has insisted that the man who wins is the man who gets the best

information from the best source. The ordinary competitor does not think of consequences, or he would not compete. He is buoyed by excitement; and it is this memory of his intoxicating excitement which prompts him and entices him to further risks. It is no use or purpose to show him that it is forty chances to one against his winning—any more than it is to tell these things to the gambler or the betting man. The whole circumstances of the ordinary architect is that of a gambler making a big stake.

The whole atmosphere and environment of competitions is corrupt. I know personally of a competitor who was approached frankly—unreservedly—indecently—by a member of a promoting committee in a late competition. The committee-man inquired whether he wished him to work for him on committee.

Can anyone believe, until he has eradicated from his mind the whole field of competitions, that architecture is either a profession or an art. Let me tell you the true and fascinating story of Durham, it is not a very old story, but it will bear a lot of re-telling when we wish to be stung to the recognition of the melancholy status of the profession. I especially tell the tale in reference to the question, is architecture a profession or an art? It will be observed that it is a case which rises out above the general run of competitions to which my remarks heretofore have had reference. In other words, it is an exceptional case, above the average in value and importance.

To begin with, any architect entering for this Durham competition, promoted by the County Council of Durham, had to pay a fee of £5 before he could know upon what precise terms he was humbugged. This is a common expedient with promoters to stave off the first mad rush of the architects. The assessor selected six designs, from which he made the final selection of his awards. The committee paid the first premium, awarded a local architect the second premium, and gave the latter the commission to execute his design. This local firm's design was stated not to have been included in the six designs of the preliminary selection. Then the profession made a strong stand. It got right on its hind legs. It objected. It objected in the professional press; it objected in printed circulars sent to the Council. Fourteen of the competitors signed this circular letter, praying that the winner of the first premium should be appointed to execute the work. They also pointed out that not only was the local firm selected by the Council not included in the first six, but that his design should, under the conditions of competition (for the luxury of which they had staked £5 each) have been disqualified. This memorial was sent individually to each member of the Council, shortly before the meeting which was to make the final irrevocable decision, with the intention, we may presume, of sapping their native resolution with such a show of firmness. Our powers of objection now became almost inspired, and certainly beyond human precedent. Two of the competitors, solemnly appointed and deputed by vote of them all, went and took residence in a hotel close by the building in which the Council were to meet. Think of it! Two live competitors at hand, in a hotel, in person to bring shame to the naughty councillors! Notification that these two protesting professionals were actually in situ at the hotel was duly sent to the Council. One regrets to say that there is no evidence of the Council having winced in bulk at this ominous news. We can fancy the pallor-stricken subordinate official bursting upon the elect councillors of Durham with the extraordinary intelligence. One has tried to realize the terrorizing effect, or the persuasive influence of a brace of protesting architects in a hotel, inviting there inspection and examination from the townspeople. One has altogether failed. One can hardly picture anything funnier. Our profession is content to go out to battle with a glass tube and a mouthful of rice, instead of having recourse to the solicitor's letter, which is usually employed. The result of this venture was that the Council said that they claimed legal right on the conditions of competition, and further, that the disqualifying features in their awarded design had not been brought under their notice, while a noble Lord who had got washed up on to the Council in the late high tide of municipal aristocracy, denounced the protesting brothers' cause as "a professional squabble."

What else than something of this kind we could have expected to get from the Council it is not very easy to imagine. The protesting brothers seem to have appealed to the Council's sense of justness, to its goodness of heart, and so forth; which, in face of the printed regulations accepted open-eyed by each competitor, was quite beside the mark, and an affront to both the understanding and the feelings of the Council. Apparently the deputation of protest expected to be answered somewhat as follows: "Gentlemen, we have been touched by your appeal to our good nature and sense of poetic justice, and though we were careful in the "conditions" to secure a free right to appoint whoever we might choose, yet your eloquence has shown us so clearly how base and shameful our motives were, that we herewith withdraw our decision, and agree to do what you wish." Unfortunately, side by side with our objectors' words of appeal, was the complacent admission of the assessor, who told the Council that "of course they were not bound by his award."

And now, gentlemen, bearing this scene in mind, is architecture a profession or an art?

A very great number of suggestions have been made for the

Analysis of Thirty-Two Conditions of Public Competition, as Issued to Competitors. Taken as they came to hand from the Portfolio at the Library of the Royal Institute of British Architects.

Value.	Premiums.	Assessor.	Premium to Merge in Commission.	First Award to Execute.	Drawings Property of Committee.	Assessor Absolute.
—	50.20.10	Yes	Yes	Not bound	1	No
—	20.10	Yes	Yes	" "	1 and 2	No
500	10.5	?	Yes	" "	1	No (5 per cent., including quantities.)
(over 9,000)	50.25	No	Yes	" " Nor any	1 and 2	No
4,000	30.20.10	Yes	Yes	" "	1, 2 and 3	No
3,500	25.10	No	Yes	" "	1 and 2	
1,800	20.15.10	Yes	No	" "	1	No
30,000	100.50.25.15	No	Yes	" "	1, 2, 3 and 4	
5,000	30 and 20	No	Yes	" " Nor any	—	
15,000	50.30.20	Yes	Yes	" " " "	1, 2 and 3	No
5,000	30.15	Yes	Yes	Yes: if competent	?	No
—	20	No?	No	Not bound. Nor any	1	No
2,500	20.10	No?	?	Designs only asked	1 and 2	No
16,000	75.50.25	Yes	Yes	Not bound	1, 2 and 3	No
—	None	No?	?	" "	Yes	No (5% to include travelling, attendance at board, extras on contract, &c.)
300	7/10.2/10	No	?	No mention of execution	1 and 2	
—	—	—	—	No conditions	?	
?	20.10	No	Yes	Not bound. Nor any	1 and 2	No
5,500	50.35	Yes	Yes	" " " "	1 and 2	No (5%. No. expenses.)
?	150.100.50	Yes	Yes	" " " "	1, 2 3	No
4,000	25	No?	Yes	" "	?	No
?	10/10	Yes	Yes	" " Nor any	?	No
7,000	40.20	No?	Yes	" "	1 and 2	No
4,000 (about)	—	—	—	No conditions	—	
1,800	—	—	—	" "	—	
4,500	50.20	No	Yes	Not bound. Nor any	1 and 2	
9,000	50.20	Yes	Yes	" "	1 and 2	No
15,000	50.25	Yes	Yes	" "	1 and 2	No
4,000	—	—	—	No conditions	—	
7,500	—	—	—	" "	—	
7,000	40.20	No	No	Not bound	1 and 2	
8,000	—	—	—	No conditions	—	

The Average English Public Competition.

Computed from the basis of seventy-one English Public Competitions advertised in the Builder in the years 1894-5*; from particulars of these same competitions subsequently appearing in the body of the journal; and from an analysis of thirty-two "conditions of competition" (see other table).

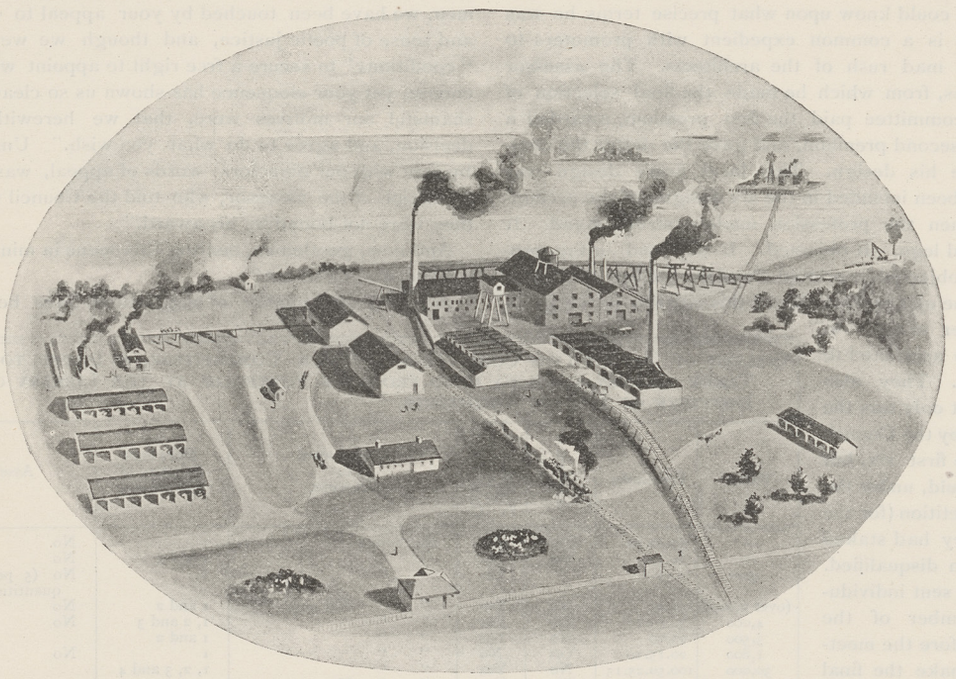
Value.	Premiums.	Competitors.	Promise of Assessor.	Premiums to merge in commission.	Promoters "not bound" to accept "1st award."	Promoters "not bound" to accept "1st or any award."	All Premiated Designs Property of Promoters.	The 5 per cent. commission to include extraordinary expenses.	Assessor award admitted to be absolute.
£9,000	1st £56, other prizes to value of £52.	40	Over 50 per cent.	77 per cent.	54 per cent.	35 per cent.	73 per cent.	16 per cent.	Practically never.

* It is not meant that each item has been worked out from seventy-one cases. Full particulars of every case were not to be obtained, but the number of cases yielding each figure was sufficient to guarantee accuracy for round numbers.

amelioration or reorganization and reconstruction of competition, but, so far as I know, no one has suggested that we should, in the matter of competitions, individually regard architecture either as being a profession or an art, or both, and that we should return to that attitude of independence with which it is hoped most of us left school or college, and which was ours before we were enticed to the attitude of the emulative haber-dasher soliciting some one's "valued order." We are wont to deal with matters relating to a private commission from a quite different standpoint to that from which we regard competitions; but I think few of us will deny that the wide generality of local competitions has spoiled our clients; and I think you will agree that the ordinary man who has not the advantage of a private fortune or a circle of the right sort of friends is almost compelled to submit to humiliating treatment from his prospective clients.

For my own part, I feel strongly against turning the profession into a sort of trades' union, yet most of the remedies which are suggested imply that, or tend to that end. The matter lies in our own hands. Our disordered competition system is a monument to our incontinent unthinking greed and folly. We have overreached ourselves, and we must retract and amend, and bring matters back to a position of ordered decency.

The power lies chiefly with assessors, because they are few, and because they are men of substance and position. It should surely be with them a sine qua non for their sanction of conditions of competition, that the terminology is legal and free of ambiguity, and that the various clauses are fair and reasonable. There is a very strong general disinclination to enter a competition where an assessor is not employed. Let it be noticed and understood in the profession that the assessor is a guarantee that the "Conditions" is a legal document, and that the clauses are fair and reasonable in the circumstances (which at present is far from being the case, as we have seen), and it will soon be difficult to get any one to enter a competition where this guarantee is wanting. This may not do much to ameliorate the radical false basis of the system, but it will mitigate its corruptions and irregularities, and it will enable these affairs to be enacted with such decorum as befits an occupation which is only uncertain whether it is a profession or an art.



Works of the Owen Sound Portland Cement Company.

OWEN SOUND PORTLAND CEMENT CO., LTD.

In 1888 this company was formed in Owen Sound with a capital of $100,000. The natural deposit from which they are now making their well-known "Sampson brand" Portland cement, is situated at Shallow Lake, 9 miles west of Owen Sound, on the G. T. R. The deposit covers 500 acres, forming the bed of Shallow Lake.

The water recedes from the lake early in June, usually not rising again till late in the fall. During this dry period the company put on teams and scrapers, and take out first the marl and then the blue clay which underlies the marl. In removing the clay a steam derrick is used to elevate the clay into dump cars in which it is hauled to the works, which are located above high water mark on the shore of the lake.

The excellence of the cement made by this company is largely due to the very superior quality of the natural ingredients, which are apparently better adapted for making Portland cement than groundstone which is more commonly used.

The original works were destroyed by fire a few years ago, and have been replaced by large and more commodious buildings and modern kilns, built after the plan of those used in English factories. Every department of these new buildings was fitted with latest designs of improved machinery known in the art of cement making in England, Germany and the United States, and to which additions are being continually made, till from the very modest start made in 1888, the buildings now cover a space of over two acres and have cost the company over $200,000.

The company have their own stave factory and cooperage plant and manufacture their own barrels at the works. An efficient chemist is continually employed, and every kiln of cement is carefully tested before leaving the works for the storage department.

The capacity of the factory has this year been increased from 130 barrels to 300 barrels per day. The company employ an average of 80 men throughout the year and have storage capacity at the works and in their warehouses at Toronto and Winnipeg for 40,000 barrels. The present demand for Sampson cement is so great that they are quite unable to supply their customers.

Twenty-three tons of coke are consumed daily in burning the clinker preparatory to grinding into cement, and 2,000 cords of wood are annually used in making steam. The company own their own electric light plant and the works are well lighted inside and out throughout the entire year.

Since this company began operations the price of Portland cement has gradually decreased and many failures have been recorded in England and the United States as a natural consequence. The price of cement to-day is nearly fifty per cent. lower than it was ten years ago. The company state that while profits have been small—in fact, no profits at all—through unfair competition of light weight barrels, adulterated and often useless brands of cement, and public prejudice in favor of imported goods, their aim has continually been to improve their Samson brand, until now they confidently challenge the world to produce a better cement, and hope in the near future to be able to raise the price to a more profitable figure.

For proof of the excellent quality of the company's material we are referred to the following results of tests made in comparison with well known brands of Belgian and German cement:

Lion Brand (Belgian)—(1) Fineness, 75% passed a 100 mesh sieve. (2) Blowing test, in water at 108° F. for 24 hours; unsound; blown all to pieces. (3) Tensile strength, 7 days, 90 lbs. per square inch.

Stetha Brand (German)—(1) Fineness, 90% passed a 100 mesh sieve. (2) Blowing test in water at 180° F. for 48 hours; sound. (3) Tensile strength, 2 days, 337 lbs. per square inch; 7 days, 505 lbs. per square inch.

Samson Brand (Canadian)—(1) Fineness, 93% passed a 100 mesh sieve. (2) Blowing test in water at 180° F. for 48 hours; sound. (3) Tensile strength, 2 days, 345 lbs. per square inch; 7 days, 565 lbs. per square inch.

THE BUILDER

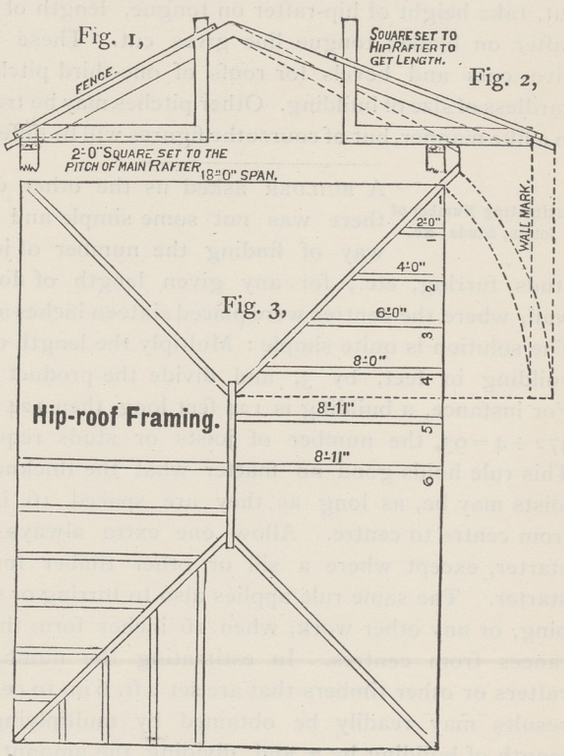
[THIS DEPARTMENT IS DESIGNED TO FURNISH INFORMATION SUITED TO THE REQUIREMENTS OF THE BUILDING TRADES. READERS ARE INVITED TO ASSIST IN MAKING IT AS HELPFUL AS POSSIBLE BY CONTRIBUTING OF THEIR EXPERIENCE, AND BY ASKING FOR PARTICULAR INFORMATION WHICH THEY MAY AT ANY TIME REQUIRE.]

Something About Shingle Roofs.

THE average life of a shingle roof was formerly placed at twenty-five years, but recent observations have proved that the modern shingle roof does not live more than fifteen, and oftener, ten years; and in many instances roofs that were shingled twenty-five or thirty years ago hold good, while neighboring roofs required re-shingling once or twice during the same period. Two reasons are given for the early decay and wear of the modern shingle. Latterly, shingles are made from fallen or burnt timber, and have but little life in them when cut into bolts. The lumbermen and mill men cut everything into boards that will make boards or dimension stuff, and the culls, dozey butts and defective fragments of logs and burned timber are made into shingle bolts. The result of this system is that a large majority of the shingles that find their way into the market are half decayed before they are laid on the roof. Under proper architectural supervision such shingles would not be permitted to be used, but, when the contractor is also the architect or superintendent, his interests are in the direction of cheap, and consequently, inferior shingles. Another cause of early decay in the modern shingle is that, as a rule, roofs are not now built with the acute pitch they were twenty or thirty years ago. A shingle will not last as long on a flat roof as on a steep one. The reasons are evident. The roof that sheds the water the quickest, dries the quickest, and lasts the longest. The pattering of the rain does not cut the shingles as it does on a flat roof; and under every condition a steep roof is less likely to leak than a flat one, and in case of a fire in adjacent buildings, a steep roof stands a much better chance of escaping than one having a flat roof. It could be demonstrated by algebraical rules that, the steeper the roof the longer it lasts, and a solution of the problem shows that, to get fair results, a roof should never be less in height than half the width of the house—that is, one-half pitch. A quarter-pitch roof, unless used on a cottage roof with hips, though a common roof in Canada, should not be employed if it is to be shingled, and further, it is offensive to good taste and is constructively bad, even when tied with collar-beams.

Hip-Roof Framing.

CONTINUING our remarks on the use of the steel square, we take up the question of hip-roofs. Suppose the pitch shown at Fig. 1 in the diagram, where the square is applied, is described on the architect's plans and specifications. Then the end of the blade of the square must only just enter the fence, as shown, and the tongue be adjusted to the pitch of the roof, whatever that may be. Fig. 2 shows the square set to the pitch of the hip-rafter. The two squares as set give the plumb and level cuts. Fig. 3 shows the plan of a house 18 × 24 feet; the rafters are laid off on the level, and measure nine feet from centre of ridge to outside of wall; there should be a rafter pattern made, with the plumb cut at one end and the foot cut at the other. When the foot is marked off, place the end of the blade to the wall line, as shown in the diagram, and mark across the rafter at the outside of the tongue, and these marks on the rafter pitch will correspond with two feet on the level plan; slide the square up the rafter and place the end of the blade to the mark last made, and mark outside the tongue as before. Repeat the process until nine feet are measured off, and then the length of the common rafter is correct, with the exception of half the thickness of the ridge-piece, which must be cut off the point of the



rafter in the plumb-cut. The rafters are laid off on part of the plan to show the appearance of the rafters in a roof of this kind; but for working purposes, the rafters 1, 2, 3, 4, 5 and 6, with one hip rafter, is all that is required. For the hips and jack rafters, lay off a common rafter as explained, but make the pitch one-third; that is, raise the ridge above the level of the wall plates one-third the width of the building. This pitch is obtained by employing the figures 8″ on the tongue and 12 on the blade, which gives the length of one foot on the plan, and the plumb and level cuts. Next is the hip-rafter.

If we take 12 and 12 on the square, the diagonal line touching these figures will be 17 or thereabouts, and the hip is the diagonal of a square added to the rise of the roof; therefore, we take 8 on the tongue and 17 on the blade, run the same number of times as we would for the common rafter (rule to find distance of hip diagonal, $a^2+a^2+b^2=y^2$). To cut jack rafters, divide the number of openings or spaces for common rafters. If we have five jacks, with six spaces, our common rafter being 12 feet long, each jack would be two feet shorter; first 10 feet, second 8 feet, third 6 feet, and so on. The top down cut for jacks is the same as the plumb cut on common rafters; the foot cut is also the same as in common rafters. To cut the mitre to fit the hip, take half the width of building on tongue and length of common rafter on blade, and blade line gives the cut. Now find the diagonal of 8 and 12, which is 14.42—call it 14 7-16; take 12 on tongue and 14 7-16 on blade; blade line also gives cut. The hip should be "backed" or beveled from centre to suit line of jacks. Take height of roof on tongue, length of hip on blade; tongue line gives bevel from centre line of hip. These figures will cover all cuts for cornice and sheathing. For bed moulding which is cut on the rake, take half width of building on tongue, length of common rafter on blade; blade line gives cut. It must be remembered that machine-made mouldings will not "member" properly on a rake, no matter at what angle they may be cut, but the method given will make a solid joint, when the moulding may be pared to "member." To cut planceer to run up valley, take height of rafter on tongue, length of rafter on blade; tongue line gives the cut. For the plumb cut, take height of hip-rafter on tongue, length of hip-rafter on blade; tongue line gives cut. These rules give cuts and bevels for roofs of one-third pitch, regardless of size of building. Other pitches may be treated in a like manner, but of course the figures will be different.

Estimating Number of Joists, Studs, &c.

A BUILDER asked us the other day if there was not some simple and rapid way of finding the number of joists, studs, furring, etc., for any given length of floor or wall, where the centres were placed sixteen inches apart. The solution is quite simple: Multiply the length of the building in feet, by 3, and divide the product by 4. For instance, a building is 124 feet long, then $124\times3=372\div4=93$, the number of joists or studs required. This rule holds good no matter what the thickness of joists may be, as long as they are spaced 16 inches from centre to centre. Allow one extra always for a starter, except where a sill or other timber forms a starter. The same rule applies also to furring or strapping, or any other work, when 16 inches form the distances from centres. In estimating the number of rafters or other timbers that are set 2 ft. 6 in. to centres, results may readily be obtained by multiplying the length of building by 2 and dividing the amount by 5. The result will show the number of pairs of rafters required, less one pair, which must be added. Again, if we want to place joists or timbers of any kind eighteen inches from centres, all we have to do is to multiply the length in feet by 2, and divide the product by 3, pieces required less one, which must always be added. In the first instance, the foot is divided into three parts of 4 inches each, and in the two latter examples the foot is divided into two parts of 6 inches each. The principle is quite plain, and when properly understood, may be applied to many cases in estimating.

Weights of Windows, Doors and Blinds.

IT frequently happens that a contractor desires to know the weight of doors, blinds, sashes and other wrought stuff, in order that he may be able to provide for railroad expenses or other freight charges; and the following tables have been prepared to meet such requirement:

WEIGHT OF DOORS.

Size.	Thickness. 1 Inch.	1¼ Inch.	1½ Inch.
2 ft. 0 in. x 6 ft. 0 in.	20 lbs.	25 lbs.	32 lbs.
2 6 x 6 6	27	33	38
2 6 x 6 8	30	35	40
2 10 x 6 10	33	40	45
3 0 x 7 0	36	45	50

WEIGHTS OF WINDOWS.

Thickness, 1¼ Inches.

Size of Glass.	Glazed.	Unglazed.
7 x 9—12 light sheets	13 lbs.	6 lbs.
8 x 10 "	15	6½
9 x 12 "	20	7½
9 x 13 "	21	8
10 x 12 "	22	8¼
10 x 14 "	23	8½
10 x 16 "	26	9

WEIGHT OF BLINDS.

Two sheets to each window of 12 lights.

7 x 9	11 lbs.	2 ft. 6 in.	x	6 ft. 6 in.	23 lbs.
8 x 10	13	2 8	x	6 8	24
9 x 12	14	2 10	x	6 10	25
9 x 13	17	3 0	x	6 6	26
10 x 12	17	3 0	x	7 0	27
10 x 14	19	3 0	x	7 6	29
10 x 16	21	3 0	x	8 0	32
10 x 18	22	3 2	x	8 2	34
10 x 20	26	3 6	x	8 6	40

While the tables are not absolutely correct, as the weight of lumber varies, yet they are sufficiently near the truth to enable the estimator to obtain an idea as to the cost of freight when he knows the rate per 100 pounds. The table referring to glazed sashes will also give the estimator a fair idea of the cost of sash weights required for any given work. The following table may also be of service in estimating cost of freight on dressed and undressed lumber:

Pine boards or plank, weight per M.	2,700 lbs.
Flooring, dressed, "	1,900
Ceiling, " ⅜ in. thick, "	800
" " ½ " "	1,200
" " ⅝ " "	1,400
" " ¾ " "	1,600
Boards, surfaced one side, "	2,000
Dimension stuff, rough, "	2,700
Shingles, per ¼ M. bunch	40
Pickets or other dressed stuff, per 100 ft.	200

From these tables, the weight of all the lumber and dressed stuff in a building may be determined, and the cost of freights to any given point obtained, railroad or steamboat charges per 100 pounds being known.

Weighting Windows.

IN preparing weights for sashes, care should be taken that the lower sheet is nicely balanced. The usual custom of making the weights of the lower sheet a trifle less than weight of sash, is all wrong, inasmuch as the weight of cords and friction of axle act against the weights more than against the sash, therefore it is better to have weight and sash just about balance. If the top sheet contains the same size glass, and same number of panes, the weights used should be the same heft as used in the lower sheet. This will always have a tendency to keep the top sheet snug to the top of the frame, as the weights will be a little heavier than the sash, owing to the fact that the bottom rail of the lower sash is always made heavier than the top rail of the upper sheet, while the meeting rails are the same in both sheets. Close, but not too tight-fitting, of sashes, enables them to move freely in their grooves, though, when fitting, allowance must be made for three coats of paint on the sash and three coats on the frame. Generally the trouble with hung sashes is the paint; painters do not exercise the care they should when painting window sashes and frames. Sometimes a little soap applied to the groove in which the sash travels will perform wonders in assisting the sash to move easily.

MASTER PLUMBERS OF CANADA.

Proceedings of the Third Annual Convention of the National Association at Quebec.

Canada's ancient and historic city of Quebec has so much of interest to offer visitors that it has become the Mecca of travellers from all parts of the world. It was therefore wisely chosen as the meeting place of the third annual convention of the National Association of Master Plumbers of Canada.

The convention opened on June 29th, and closed on the evening of Dominion Day. The following delegates were in attendance: J. Burns, E. Lesperance, James Sadler, Thos. Forest, T. Christie, J. Brunet, P. J. Carroll, J. Watson, J. W. Harris, M. Montpetit and Jos. Lamarche, of Montreal; J. Higman, Ottawa; M. Crump and M. Day, Halifax; H. Hogarth, J. K. Allison, W. H. Meredith, Jos. Wright and W. Mansell, Toronto; J. Pennington, Windsor; C. E. Pickard, Quebec; Wm. Smith, London; Joseph Wright representing Vancouver, and Wm. Smith representing St. Thomas, as these places were unable to send delegates.

The Executive held a session in the morning, at which the various matters to be brought before the convention were considered.

The first business session of the convention opened at 3 p.m., Mr. Wright, the President, being in the chair.

Messrs. Higman, of Ottawa, Allison, of Toronto, and Lesperance, of Montreal, were appointed a Committee on Credentials.

The following gentlemen, representing manufacturing and supply firms, were in the city during the convention, and were admitted to the preliminary session: P. McMichael, of The James Robertson Co., Toronto and St. John, N.B.; W. Robinson and L. Payette, of Warden King & Son, Montreal; J. M. Taylor, of The Toronto Radiator Co., Toronto; E. Hebert, of H. R. Ives & Co., Montreal; H. McLaren & Co., Montreal; W. H. Wiggs, of Mechanics' Supply Co., Quebec: L. H. Gaudry, Quebec; Col. Massey and R. Lockhart, of The Gurney-Massey Co., Montreal; Geo. Moffat, of The Robert Mitchell Co., Montreal; Charles Robertson and A. A. Robertson, of The James Robertson Co., Limited, Montreal; Geo. H. Booth, of The Toronto Steel-Clad Bath Co., Toronto, and A. Saunders, of the Goderich Organ Co.

Communications were read from Mr. Wiggs, of The Mechanics' Supply Co., Quebec, and J. W. Hughes, of Montreal, regretting their inability to be present.

The President, after welcoming the representatives of the supply houses, handed the Secretary his annual report, which was read to the convention as follows:

PRESIDENT'S REPORT.

To the Delegates and Members of the National Association of Master Plumbers, Gas, Steam and Hot Water Fitters of the Dominion of Canada.

Gentlemen,—So swiftly do the months pass, it is difficult to realize that a year has elapsed since you did me the honor of placing me in the chair. It must be pleasant to you, as it is to me, to see again the familiar faces of your brethren in the craft.

Since the formation of our Association, two years ago, the day has passed when a master plumber, gas, steam or hot water fitter regarded his fellow craftsman as an enemy, for whom he had no use, and whom he hoped to assist to get off the earth. Education and experience have taught us, not only the uncharitableness and moral wrong of such a feeling, but also its utter inexpediency and futility from a business point of view. We have found, as have other industries, that cut-throat competition can only lead to mutual extermination or self-destruction. We now regard each other as men who must of necessity be coadjutors and co-workers for the mutual good and profit of the trade.

In our city, when we met together in local association, we speedily discovered two facts: that we did not know by sight even men whose names were household words in our business, and secondly, that these men, instead of being evil disposed adversaries, were mighty good fellows. Then let me welcome you all as good fellows to a convention of an honorable industry.

The importance of a convention like ours is not to be underestimated. We are acting, not for ourselves alone, but for all those engaged in our line of business, whether members or not, throughout the Dominion of Canada. Every one of these must be more or less affected by legislation of this assembly. Let us remember then the great diversity of conditions that prevail in a country as large as ours, the variety of local practice in a constituency so dispersed and varied. In matters where national practice is uniform we can adopt uniform and rigid rules, but in reference to local affairs there must be an elasticity of law that will permit local associations to make local rules not conflicting with the National Association and By-Laws.

Our relations with manufacturers and dealers in general during the latter part of last year were not very satisfactory. Complaints have come to the Executive Committee from St. John, N. B., that T. McAvity & Sons and Thos. Robertson & Co., Limited, of Montreal, and others, were violating the resolutions signed by them.

Your Executive Committee took the charges up and wrote these firms, and they denied the charges, and it was thought best for your President to visit Montreal and investigate. I was able to meet at the Windsor Hotel Messrs. McAvity, of St. John, T. Doody, Provincial Vice-President for St. John, N.B., and P. J. Carroll, Provincial Vice-President for Quebec, and I am pleased to report that we were able to adjust all charges satisfactorily to all. I also made an appointment to meet Mr. Robertson, of Thos. Robertson & Co., Limited, of Montreal, and P. J. Carroll, Provincial Vice-President. We met again at the Windsor Hotel, Montreal, and were able to adjust matters satisfactorily.

I have also met the manufacturers and dealers of Toronto. One of the points discussed was the interpretation of the term Master Plumber, Gas, Steam and Hot Water Fitter, as set forth in our regulations. My interpretation differs from those given by some members of the local association in London, Montreal and Toronto. This should come before this convention and be settled.

I am pleased to report that we have local associations from the Atlantic to the Pacific Ocean. I was at Vancouver and organized a local association there on the 27th May. I am sorry I was not so fortunate in Victoria, B.C., as the trade there were out for a good time, keeping the Queen's birthday for three days, all the time I was there. Vancouver, B.C., will try and get the plumbers to form a local there.

I visited Winnipeg on the 31st May, and met the officers of the local association and dealers at the Manitoba Hotel. We were able to adjust all their grievances satisfactorily.

During the year I have made five visits to Montreal, two to Ottawa, one to London and Hamilton, on business connected with the Association.

At Hamilton I regret I was not able to get a meeting of the plumbers.

The Executive Committee met in February last in Montreal. The meetings have been a great help to our Association, manufacturers and dealers. A printed report of these meetings has been sent to all members. In closing, I extend my sincere thanks to the officers of the Association, to the members of the Executive Committee, and to you, the members of the Association, for the unfailing courteous treatment and assistance which I have received from you at all times, at the same time trusting you will kindly forgive any shortcomings in my administration.

The future of the Association is in your hands. I ask you to give your best thought to the deliberations of this convention, and your best efforts and enthusiasm to the promotion of our common interest throughout the coming year.

On motion of Mr. Allison, seconded by Mr. Lesperance, the report of the President was received.

The report of the Executive Committee was next presented, as follows:

REPORT OF EXECUTIVE COMMITTEE.

Your committee have pleasure in submitting their annual report to the third annual convention for the year ending June 30th, 1898.

Three meetings of the Executive have been held as a whole during the year, the first meeting being held on the blue waters of Lake Ontario on our National Day, 1st of July, 1897. The second meeting was held in the Royal City of Montreal on the 2nd day of February, 1898, and the third meeting was held in the city of Quebec on the 29th of June.

At the first meeting, on July 1st last, the main business transacted was the appointment of a sub-Executive Committee, whose duty it was to consider all grievances submitted to them for adjustment and decision. The President, Mr. Joseph Wright, Mr. J. B. Fitzsimmons and W. Mansell, Secretary, were elected a sub-committee, with full executive power. Several matters of more or less serious import were brought before this sub-committee during their first six months in office, at their several meetings held for that purpose, all of which were handled with care and consideration. At the beginning of the present year, a circular was issued by Vice-President Carroll and his colleagues of the Executive throughout the Dominion, asking their opinions as to the advisability of holding a full Executive meeting in the city of Montreal about the 1st of February, and as the replies were all in favor of same, a summons was issued calling the meeting together on the 2nd of February.

At the several meetings held on that date and the day following, very important business was transacted, some of the fruits of which are already being reaped. Joint meetings were held by our Executive and representatives appointed by the manufacturers and jobbers, when many misunderstandings were corrected and the best of good fellowship prevailed; no decision was arrived at till the conclusions were satisfactory to all present.

It is very gratifying to be able to record in this report, that the advice of our Executive at that meeting, to the manufacturers and jobbers present with us then, has been adopted by them, and they have formed their different associations into a Dominion body. It is also very gratifying to report that the hopes of our last year's Executive have been assured by the zealous action of our President, who, in the interests of this Association, went as far as the Pacific Coast, and by organizing an Association of Master Plumbers, Gas, Steam and Hot Water Fitters in the city

of Vancouver, B.C., forged the connecting link that makes our Association complete from the Atlantic to the Pacific oceans. While not extending our Association as fast as we anticipated, it is very encouraging to be able to report that steady progress is being made, which is well known to be the surest way of attaining solid and lasting construction. While expressing our hearty appreciation of the achievements of our President, there is necessity of having some Executive officer specially appointed for the purpose of organizing every master plumber and fitter in the whole Dominion under the banner of our Association. Although we can look back with pride on the results of the labors of our predecessors, much more remains to be done before we can rest on our oars and feel satisfied to hand over the reins of control to our successors with that feeling of contentment that our labors in the past have not been wasted, and that we can relinquish our active effort with that feeling of satisfaction that they have not put forth for selfish or harsh purposes, but for the improvement of our Association, and for the trade protection of the interests of all master plumbers and fitters throughout the Dominion.

We regret to have to say that some of our larger cities and towns still remain unorganized, but with the proper person entrusted with this work, we can freely say that there need not be a city, town or village unrepresented at our next convention, and we strongly urge that special consideration be given to the subject of organization this session.

JOS. WRIGHT, President.
W. MANSELL, Secretary.

On motion of Mr. Denman, seconded by Mr. Pennington, the report was received.

Mr. William Smith, Dominion Vice-President, then presented his report, as follows :

VICE-PRESIDENT'S REPORT.

GENTLEMEN,—One year ago you honored me by placing me in the position of Vice-President of the National Association, of which I am thankful and justly proud, and the time has now come for me to give an account of what I have done during my term of office. In all matters of importance I have consulted with the Executive Committee before acting, and in all cases I have found them prompt and painstaking and conservative in their advice, and as a member of your Executive I might state that your Executive acted upon a number of important matters during the year, which I leave to be dealt with in the committee's report. During the year I have had occasion many times to explain to the wholesale trade the full meaning of the resolutions, and in each case my explanation was satifactorily received. I might also inform you that through the efforts of your Sanitary Committee of last year and the Association of this year, we have been successful in getting the Board of Health of the city of London to pass a Plumbing By-Law. I now call your special attention to the great evil that is caused by local associations forming themselves into what I call a combine to get better prices for their material and work. In our London Association it was formed against my wishes, and it resulted in nearly wiping out our Association, and from what I can learn it has ruined the St. Thomas Association. I am satisfied that the time has now arrived when we should stand together to get all that we are legally entitled to, and I hope the day is not far distant when we will enroll all the good-thinking plumbers of the Dominion under our banner. I am sorry to say that the increase of membership for the past year in the west has been very small, but the outlook for the coming year is encouraging. I now take pleasure in thanking the officers and members for the kindness shown me during my term of office, and in closing it is my earnest hope that the coming year will dawn brighter for the plumbing and heating fraternity.

WILLIAM SMITH, Dominion Vice-President.

On motion of Mr. Carroll, seconded by Mr. Day, the report was reeeived.

Mr. T. J. Carroll, Vice-President for Quebec, presented his report for the year as follows :

REPORT OF VICE-PRESIDENT FOR QUEBEC.

GENTLEMEN,—A year ago I was honored by being chosen your Vice-President for the province of Quebec, and I respectfully beg to lay before you my report for the past year.

My relations with the master plumbers in my jurisdiction have been most cordial, and I desire first of all to return to them my sincere thanks for the aid they rendered me in the discharge of my (in some instances) unpleasant duties ; to the Executive officers of the National Association I also owe much gratitude for their many kindnesses rendered me during the past year.

We had many occasions for anxiety during the past year for the future of our Association, owing principally to the open disregard of the solemn promises made to us by the wholesale trade, and to the unfortunate and demoralizing indifference of the members of our trade. As to the differences between the Master Plumbers and the supply houses, it is gratifying that they have been very satisfactorily arranged by the meeting between us held on February 2nd in Montreal. As to the indifference of our members, how much has been said on the subject and how little good has been effected. Would that we could instil into the minds of our members the benefit to ourselves and to the public at large that would arise from constant and devoted interest in the affairs of our Association.

I have endeavored during my term of office to enthuse the members of our trade into more active support of our local associations, both by conversations and much correspondence, and while the measure of success has not been as great as I wished, I trust that the few results so far will have lasting effects, and that during the coming year the efforts put forth by your officers will bear fruit an hundred fold. As to the members of the craft in our province who have not yet joined our ranks, I can assure you that it is not because the members of the local association have not by all means endeavored to have them join us ; however " there are none so blind as those who won't see."

In the city of Montreal, it is indeed gratifying to the trade to see the City Council taking a new and very active interest in the heretofore sadly neglected Plumbing By-Laws. There now seems to be in the City Council aldermen who recognize the importance of a proper supervision and inspection of the plumbing of dwellings, shops, etc., and we have reason to hope that in the near future, owing to representations made by the Master Plumbers, we will have a Plumbing By-Law second to none on the continent.

We have often been reminded at former conventions of the absolute necessity of secrecy as to our actions at meetings. I cannot do more than recommend it at once. Let us be true to ourselves, and we will compel others to be just to us.

We should communicate one with the other as frequently as possible, because it creates a friendly feeling between us, and by the exchange of ideas we become more proficient in the discharge of the duties we owe to the public as Master Plumbers. Also the Executive officers should be prompt in replying to communications, so that our members will feel that their interests are being attended to.

In conclusion, I trust that you will pardon me for the many suggestions I have made, instead of giving you a complete resume of the work accomplished by us during the past year, but in my opinion it is better that the work we have accomplished should be given in detail by word of mouth rather than in writing, particularly when the work done is pretty well known to all present.

The whole respectfully submitted.

P. J. CARROLL, Vice-President, Quebec.

On motion of Mr. Higman, seconded by Mr. Allison, the report was received.

Mr. John Barton, Vice-President, representing Nova Scotia, presented the following report of the work in Nova Scotia and Prince Edward Island :

NOVA SCOTIA AND PRINCE EDWARD ISLAND.

It is with great pleasure that I now make my second annual report as vice-president of this association, representing Nova Scotia, which includes Prince Edward Island, and to state that all matters pertaining to the benefit of the craft in our section of the Dominion are satisfactory. Our trade relations still continue amicable with the wholesale houses, and are carried out satisfactorily to both plumbers and themselves. Any difference arising at any time is settled at once by myself and our local associations. As you are aware that the arrangements made with us and the trades, manufacturers and supply houses, and which is signed by the majority of manufacturers and dealers from Halifax to Toronto, is such that they cannot sell to any but association members. This has been the rule since our local organization, before the national association was formed, and still works satisfactory to all parties, and, in my opinion, should be adopted by the national association.

I am only one in the matter, but the day will come when this association of master plumbers of the Dominion of Canada will find that steps will have to be taken in this respect if we want to live.

Our membership is about the same as last year, the majority of whom are in good standing, but I must again mention that we have Nova Scotia plumbers on the list of New Brunswick. This should be changed, and those plumbers and members of New Brunswick association who live and do business in Nova Scotia should be transferred to our association. This requires the co-operation of our brother plumbers in New Brunswick, who, I have no doubt, will be only too willing to meet us in this matter.

I am sorry to state that we have not yet been able to get the western master plumbers with us (by this I mean western Nova Scotia), but have hopes that if our national association can co-operate with our brother associates in the United States, that this can be arranged satisfactorily. As long as the western plumbers can buy in the United States market, they will not be with us.

Speaking of our trade relations with our confreres in the United States, I can only reiterate what I stated in my report last year, namely, that this National Association of Master Plumbers should take some action whereby we could co-operate and have better trade relations with the association of the United States, both for our own protection as well as all the local associations of the Dominion.

On behalf of our association I would ask that some action be taken in the matter at the forthcoming convention.

In conclusion, gentlemen, I must express my regret at not being able to attend the convention, but hope in the near future to be able to be with you as in the past.

Respectfully submitted,

JOHN BARTON,
Vice-President representing Nova Scotia.

On motion of Mr. Forest, seconded by Mr. Lesperance, the report was received.

The report of the Sanitary Committee was next presented as follows :

REPORT OF SANITARY COMMITTEE.

Your committee have pleasure in reporting that during the past year considerable progress has been made in the most necessary of all sanitary work, viz : the general education of the public. The pulpit, the press, the school, the platform, and last, but not least, the master plumber, and the master Plumber's associations, have all contributed their share, and slowly but surely the general public are awakening to the fact that it pays to be healthy. Once this view of the question becomes the general belief of the masses, there will be no difficulty in making, and what is of more importance, in the carrying out of sanitary laws and by-

laws. But there is still an immense amount of missionary work to be done before the masses and the classes can be got to believe that most cases of illness are caused by the violation of nature's laws, which are God's laws, for He made them, and that any infraction of them will be followed by a sure punishment.

If our people drink sewage polluted water, they will have to bear the pains and penalties, as well as the expenses incidental to an outbreak of typhoid fever. If they inhabit filthy dwellings, breathe a polluted atmosphere, and live in the midst of unsanitary surroundings, they will be subject to the penalty of having some filthy disease. Man can no more take into his system the germs of disease and expect to escape the penalty, than he can swallow arsenic or laudanum and escape the effects of these drugs. If instead of looking upon an outbreak of illness as a mysterious dispensation of Providence inflicted upon us for our sins in general, we would understand that the sin of violation of God's sanitary laws was visited by the punishment made and provided, there would be more attention given to the state of the drains, the source of the water and milk supplies, and our legislators would not hesitate to pass, and what is more important, enforce, laws calling for good plumbing, pure water, effective drainage, light and ventilation in our dwellings in proportion to the needs of the occupants.

Your committee would recommend our association to point out to our legislators the necessity already great in our large and growing cities, for the careful supervision of tenement houses and the dwellings of the poor. Already there is overcrowding; dark rooms are becoming common; absence of sunlight and ventilation is producing the usual results, and if our large towns wish to avoid the sad and costly experience of other countries the question must be taken up at once. Plumbing by-laws and general sanitary regulations are needed for the protection of the masses and especially for the poor who are unable to protect themselves.

The rich employ the best talent and use all precautions against the admission of disease-producing elements into their homes. The poor man, alas! is compelled by his poverty to live under such conditions as his purse will allow.

The state has a duty in this matter, that of protecting those who cannot protect themselves in sanitary matters, and your committee would strongly urge upon our legislators in the Dominion parliament the passing of a law for the Dominion, covering these important questions—a law laying down the general sanitary principles and preventing the use of improper materials or the employment of wrong methods, whether in the city, town, village or the isolated dwelling.

The public press has recently given an account of a terrible state of affairs in connection with a certain public work. Accounts of the outbreak of diptheria and kindred diseases in lumber camps, and similar places are not infrequent, and the little hamlets and villages are frequently visited by death-dealing scourges that would have no existence were even the most elementary sanitary laws known and practiced by the inhabitants.

Men are employed by the government to educate our people in such questions as the manufacture of cheese and butter or the rotation of crops; surely the health of our inhabitants, the most important asset we have, is of equal importance.

Millions have been spent in inducing the foreigner to come to our country; surely a few thousands could be spared to protect and prolong the lives of our much more valuable population.

As long as the death rate in any district remains above normal, it proves that valuable lives are being wasted, the saving of which would at least be of equal value to the country, with the introduction of foreign emigrants to take the place of those needlessly sacrificed.

In the special line in which we are interested progress has been made. The call for the better class of fixtures is becoming more frequent, better materials are being used, and slowly but surely the public is being awakened to the fact that good plumbing pays, that the best is none too good, and is in the end the cheapest, and that every man who can caulk or solder a joint is not entitled to be called a plumber.

Rigid examination and certification of plumbers will, we hope, soon be the rule, and the inspector of plumbing be considered as necessary to the completion of the roll of municipal officers as the mayor or city surveyor.

To secure these things we must work shoulder to shoulder—not crushing a weak brother, but rather lending him a helping hand, for on the uplifting of our calling and the proper appreciation of it in a great measure depends the health of large numbers in our cities and towns.

Respectfully submitted,

J. W. HUGHES, Secretary,
JOHN WATSON,
J. W. HARRIS,
} Sanitary Committee.

On motion of Mr. Sampson, seconded by Mr. Forest, the report was filed and the secretary instructed to furnish extracts to the press.

The following report of the Essay Committee was read:

REPORT OF ESSAY COMMITTEE.

In view of the present condition of association matters in our district, your committee take this opportunity of making a few remarks.

Our committee is of a more diversified nature than in any other city in the Dominion, and, consequently, the aims, interests and opinions of those who are looked to to form and maintain a local association make it difficult for them to amalgamate on the same lines, and the action that is deemed necessary and right by one part is apt to be looked upon by the others with a certain amount of distrust, and as an effort to curtail their chances in doing business. While, at the same time, some of those who are in a position to know and do better fail to act up to the principles which are taught in the association, and, instead of seeking steadfastly to maintain the benefits that the association seeks to secure for the trade at large, take advantage of those benefits and then personally sacrifice them by giving them over, with sometimes a little more, to secure work which they would often be better without. These combined causes make it a difficult task to show to the trade at large that there is any value to be received for the money they are called upon to contribute for the association expenses.

It is a singular problem to explain how a man with more than the average amount of brains necessary to conduct both the commercial and mechanical business of plumbing, who has spent all the working hours of his lifetime to learn the mechanical part, and all that ought to be his leisure in mastering the commercial part, can deliberately sit down with a price list, a discount sheet and an architect's specification and make out some of the tenders which were put in for work during the past few years.

Whether it is greed for work or ignorance, the result is most disastrous, both to themselves and the rest of the trade, and sometimes to their creditors. We venture to say that there is not a man in the business today who does not hope that when the time comes that he has to lay down his kit and hand in his time sheet his business will be continued by a son, a son-in-law or other heir, and think what a while elephant a business is, part of which is conducted on these lines. Whether it is possible for association teaching or experience to improve this condition is a problem that must engage the attention of the thinking men in all trades, but especially in ours.

Trusting that these few remarks may bear some fruit is the wish of your committee.

C. E. PICKARD. A. FOREST.
R. SAMPSON. J. B. LANE.
O. MATTE.

On motion the report as read was adopted.

The announcement was made that reports from Ottawa, St. John, Winnipeg, Fredericton and Stratford had not come to hand. Some of them were said to be in the mails.

Mr. Day intimated that there were 27 members in good standing in Halifax.

On motion of Mr. Smith, seconded by Mr. Allison, the reports of the secretary and treasurer, although not entirely complete, owing to the illness of the treasurer, were received and Messrs. Allison, Watson and Crump were appointed an auditing committee. This committee reported having found the treasurer's books correct. They referred back the secretary's report for further consideration, until such time as complete returns should be received from the various associations.

A communication was read from the wholesale dealers extending greetings and tendering an invitation to the convention to partake of their hospitality at the Chateau Frontenac.

On motion by Mr. Meredith, seconded by Mr. Lesperance, the invitation was accepted.

A telegram was also received from the Master Plumbers' Association of the United States, extending greetings.

A communication was read from the local association at Vancouver, B. C., requesting Mr. Wright, the president, to act as the representative of that association.

Lieut. Col. Massey briefly addressed the convention expressing his pleasure at witnessing the friendly relations between the plumbers and supply firms.

A communication was read from the wholesale dealers with reference to resolutions passed recently by the executive committee. The letter was as follows:

JOSEPH WRIGHT, ESQ., President Master Plumbers' Association.

DEAR SIR,—Regarding the within resolution, the members of the executive committee of the Dominion Heating and Plumbing Supply Association, at present in Quebec, having met together and discussed the same, beg to suggest to the Plumbers' Association that the proper channel to refer this resolution to would be the secretary of the Dominion Heating and Plumbing Supply Association for their official consideration at their next meeting.

J. M. TAYLOR.
F. MASSEY.
W. H. WIGGS.

On motion of Mr. Smith, seconded by Mr. Mansell, it was resolved that a telegram be sent to the chairman of committees from whom reports had not been received, instructing them to continue in their position until discharged by the association.

On motion of Mr. Mansell, seconded by Mr. Pennington, Messrs. Matte, Pennington, Denman, Allison and Day were appointed a standing Committee on Resolutions.

On motion of Mr. Carroll, seconded by Mr. Smith, Messrs. Watson and Burns were appointed substitutes for Mr. Harris and Mr. Montpetit.

The meeting adjourned until eight o'clock.

EVENING SESSION.

The convention reassembled at 8:30 p.m., Vice-President Smith in the chair.

The Committee on Resolutions reported as follows:

REPORT OF COMMITTEE ON RESOLUTIONS.

(1) From Mr. Barton, Halifax. The committee appointed to report on the resolutions, do first recommend that the executive use their influence to get the New Brunswick members doing business in Nova Scotia transferred to the Halifax local association; that they also use their influence with the master plumbers of western Nova Scotia to persuade them to join the Halifax association.

(2) Regarding vice-president's report, your committee desires to express its approval of Mr. Smith's suggestion regarding combines; we think them detrimental to the welfare of our association.

(3) Regarding Mr. Carroll's report, committee recommend that Mr. Carroll's suggestion with respect to secrecy of the business carried on by the local associations be concurred in.

(4) We are sorry to hear that the local association of Quebec has not worked satisfactorily for the last year. Recommend that the members of this association do try to get them to unite according to the Quebec committee's report.

(5) We take much pleasure in the good work done by the executive officers and hope that every member of this association will continue to assist them in every way possible, as only by united action can we succeed.

(6) We recommend that the report of the sanitary committee be received and adopted, and also that a copy of the same be given to the press for publication.

O. MATTE. GEO. C. DENMAN.
M. DAY. JOS. PENNINGTON.
K. J. ALLISON.

It was decided that the report of the Legislative Committee should be read clause by clause.

On motion of Mr. Pennington, seconded by Mr. Forest, the secretary was instructed to secure names of firms not connected with the association, with the object of inducing them to join.

On motion of Mr. Mansell, seconded by Mr. Forest, it was decided that letters be sent to the various associations relating to contract work.

In connection with clause 3 of the report last presented, the necessity of greater secrecy in connection with the business of the association was emphasized.

Mr. Burns moved a resolution, which he afterwards withdrew, requiring that an extra binding oath be taken by the members of the association.

Instead of this course it was decided to instruct the secretary to send out a strong letter to members recommending absolute secrecy.

Messrs. Wright, Carroll and Matte were appointed a committee to visit the local plumbers of the city and tender to them an invitation to attend a special meeting for their benefit, with the object of improving local conditions.

The convention then adjourned.

After adjournment the members spent a very pleasant evening at the Chateau Frontenac, as the guests of the supply firms.

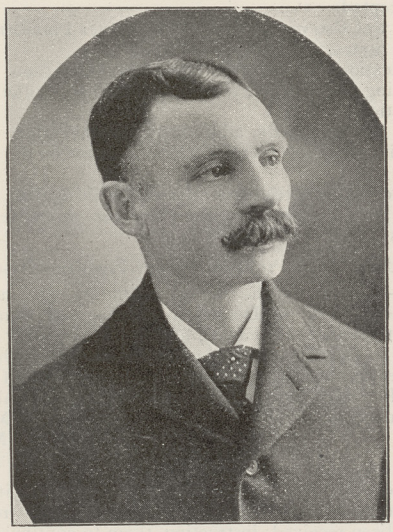
SECOND DAY.

The morning session opened at 8:30, Vice-President Smith occupying the chair.

After some discussion, it was resolved, on motion of Mr. Harris, seconded by Mr. Watson, that Messrs. Carroll, Harris and Higman be appointed a committee to look into the matter of trade relations with the manufacturers of soil pipe, and report. In this connection, it was announced that a meeting of soil pipe manufacturers would take place on July 12th, and it was suggested that a committee should confer with them on that occasion.

On motion of Mr. Carroll, seconded by Mr. Sadler, a vote of thanks was tendered to Mr. Briggs, the Treasurer, who, through illness, was unable to attend the convention.

The Chairman suggested the appointment of a committee to consider



MR. WM. SMITH,
President National Association of Master Plumbers.

the relations of the Association to the wholesale hosues. He also made reference to the matter of a discount sheet, and urged the necessity of local associations remitting their per capita tax within a specified time.

The practice of members of the Association taking copies of specifications to wholesale supply firms was condemned.

On motion of Mr. Pennington, seconded by Mr. Higman, Messrs. Pennington, Higman and Harris were appointed a committee to consult with the jobbers and manufacturers with regard to matters in relation to which improvement is desirable.

After consideration, this committee presented the following report :

QUEBEC, June 30, 1898.

This committee ask the wholesale dealers and manufacturers not to meddle in any way or shape with the plumbers' business, viz.: Not to give prices on plans and specifications supplied them, either by contractors or plumbers ; also, not to give prices to proprietors, or give them any information in connection with plumbers' business, or inform any plumbing firm that such and such a job is going on.

JAMES PENNINGTON,
JOHN HIGMAN,
J. W. HARRIS.

REPORT OF APPRENTICE COMMITTEE.

Your committee appointed to consider the subject of "The Apprentice," beg to report that, apprenticeship as it relates to the term apprentice in its strict interpretation—a person bound to serve for a number of years, and receiving in return for such services, instructions in his master's business, does not exist in this country in relation to the plumbing trade.

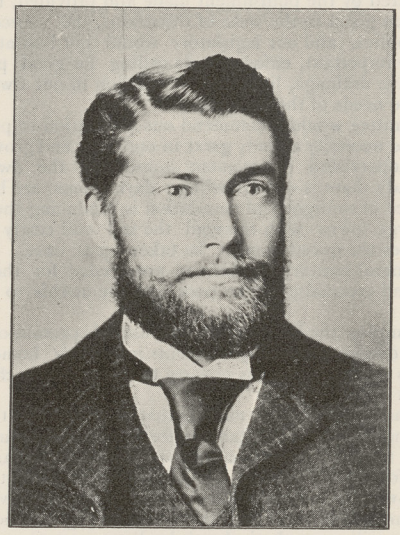
Apprenticeship had its origin in the system of associated trades, which prevailed in almost all parts of Europe during the middle ages, and without close association of the trade, it cannot be effective, for reasons expressed in the report of the last apprenticeship committee for the year 1897.

In the precarious state of the plumbing trade, when viewed throughout the entire country, it is a very serious matter for a young man to contemplate binding himself to serve for a number of years, with an almost certain prospect of finding himself, like Othello, without an occupation at the expiration of his apprenticeship.

There are but few cities in this country where an apprentice could be sure of obtaining correct instruction, and in none of the towns. Probably fifteen places in Canada would be the outside number where proper conditions exist for the education of an apprentice. A correct handling and use of the tools will no longer suffice. A plumber of to-day must be technically, mentally and practically up-to-date.

An apprenticeship of seven years, as of old, will only fit him to commence a life-long study of new appliances and the application of the latest regulations.

Under present regulations, owing to the imperfect working of Boards of Health, in respect to our trade, and the enormous waste of energy necessary to the bringing about of improvement, it is useless to expect the average town of 5,000 people to present the latest information along



MR. J. W. HARRIS,
Vice-President National Association of Master Plumbers.

the line of applied mechanics in relation to sanitary plumbing, to say nothing of the heating of buildings, by wind, vapor and water, as well as to solve the problems of the tinners' trade.

It is to the cities then we must turn to find correct conditions and instructions during apprenticeship for the plumbers of the future.

The trade is each year changing in respect to the duty of a plumber. Now a journeyman has little to do but erect appliances, previously designed, made and practically ready for operation at the factory, and in this respect the trade of plumbing is becoming more and more an exact science, and one man without a helper can easily accomplish many times the work formerly done. For this reason fewer helpers or apprentices are used than formerly, and, without wishing to venture as prophets, we believe that before many years have elapsed, the journeymen plumbers will be divided into two classes, repairers and erectors, and

MR. W. H. MEREDITH,
Treasurer National Association of Master Plumbers.

that the new additions to the trade will come from the technical colleges and trade schools.

W. H. HEARD, Chairman.

On motion of Mr. Pennington, seconded by Mr. Mansell, the report of the Committee on Resolutions was received and the committee discharged.

Mr. Carroll presented the report of the committee appointed to consider the soil pipe question. The report was received and adopted, and it was ordered that a copy of the same be sent to the manufacturers.

Some discussion took place as to the advisability of appointing permanently a paid Secretary.

On motion of Mr. Mansell, seconded by Mr. Pennington, it was resolved that a committee be appointed to consider the matter.

It was resolved, on motion of Mr. Carroll, seconded by Mr. Harris, that a certificate of membership be issued to members in good standing,

and that such certificates should contain a clause stating that it is the property of the association, and can only be retained by members in good standing.

On motion of Mr. Meredith, seconded by Mr. Day, a committee consisting of Messrs. Allison, Meredith, Watson, Sadler and Crump was appointed to nominate officers for the ensuing year.

The convention then adjourned for lunch.

AFTERNOON SESSION.

The convention reassembled at 3:30 p.m., Mr. Wright, the president, presiding.

The nominating committee reported as follows:

To the President, Officers and Members of the National Association of of Master Plumbers:

Your committee on nominations would recommend the following names as officers for the ensuing term:

President, Wm. Smith, London.
Vice-President, J. W. Harris, Montreal.
Treasurer, W. H. Meredith, Toronto.
Secretary (pro tem), W. Mansell, Toronto.
Elected members of executive committee: Ontario, A. Fiddes, Toronto; Quebec, J. Lamarche, Montreal; New Brunswick, Thomas Campbell, St. John; Nova Scotia, M. Day, Halifax.
Provincial Vice-Presidents: Ontario, John Higman, Ottawa; Quebec, E. Lesperance, Montreal; New Brunswick, J. Doody, St. John; Nova Scotia, G. A. Perrier, Halifax; Manitoba, E. Stevenson, Winnipeg; British Columbia, M. J. Barr, Vancouver.
All of which is respectfully submitted.

K. J. ALLISON, Chairman.
W. H. MEREDITH. JAS. A. SADLER.
JAS. G. CRUMP. T. W. WATSON.

On motion of Mr. Meredith, seconded by Mr. Sadler, the report was adopted and the president confirmed the election of the various officers.

Mr. Smith, the president-elect, was thereupon escorted to the chair by Mr. Lamarche, amidst applause. He thanked the members for his election and promised to do everything in his power to advance the welfare of the association.

The vice-presidents spoke briefly in like manner.

On motion of Mr. Watson, seconded by Mr. Lesperance, a cordial vote of thanks was tendered to the retiring officers.

The committee appointed to consider the appointment of a permanent secretary reported in favor of the appointment.

On motion of Mr. Hogarth, seconded by Mr. Meredith, it was resolved that the report be received and acted upon.

The question of the advisability of the association undertaking the publication of a monthly bulletin was discussed at some length. The members appeared to be divided in opinion as to the advisability of engaging in such a venture.

On motion of Mr. Lesperance, seconded by Mr. Montpetit, it was resolved that the secretary be a man who could write both the French and English language.

On motion of Mr. Higman, seconded by Mr. Denman, it was resolved that the next convention be held at Ottawa.

Mr. Lamarche reported on behalf of the committee appointed to interview the Quebec plumbers, that gratifying encouragement had been received and there was reason to hope that the local association would be placed on a better footing than heretofore.

On motion, it was resolved that an investigation be held into the affairs of the St. John, N. B., association.

A discussion ensued as to the advisability of admitting representatives of supply firms to the sessions of the convention. The members were divided in opinion on the subject and no action was taken.

Mr. Russell, of London, was appointed a member of the executive board.

Mr. Mansell tendered his resignation as secretary, in view of the decision arrived at to appoint a permanent secretary. The acceptance or otherwise of the resignation was left in the hands of the executive committee.

Owing to the illness of the treasurer the report of the Secretary and treasurer could not be completed and given out for publication. The treasurer's report showed a balance on hand of nearly $220.

On motion of Mr. Carroll, the auditor's report was received and it was ordered that outstanding accounts be paid at an early date.

In connection with the report of the jobbers submitted by Mr. Lamarche, it was resolved, on motion of Mr. Harris, seconded by Mr. Meredith, that the association do all in their power to cement the interests of the two parties.

On motion of Mr. Denman, seconded by Mr. Lesperance, it was ordered that the reports of the convention be printed in French and English and delivered to members early in September.

It was decided, on motion of Mr. Watson, seconded by Mr. Carroll, that all expenses of delegates be submitted by Aug. 1st, and that accounts coming in after that date would not be recognized.

On motion of Mr. Wright, seconded by Mr. Meredith, the question of imposing a per capita tax to cover the expense of printing the annual report was left in the hands of the executive committee.

Votes of thanks were tendered to the plumbers of the city of Quebec for their generous hospitality, and to the Victoria hotel for the manner in which they had looked after the comfort of delegates to the convention.

The convention then adjourned to meet in Ottawa next year.

COLLECTION OF ARCHITECTURAL BOOKS.

THROUGH the efforts of Professor Capper, some valuable additions to the equipment of the Chair of Architecture of McGill University, Montreal, have recently been made. Among the more recent additions the chief are those in illustration of Renaissance and modern architecture. From these may be especially noted Sauvegeot's "Palais et Chateaux de France," in four volumes, very finely illustrated, also Penor's "Palais de Fontainebleau," in two volumes, and the same author's "Chateau de Heidelberg"; also two volumes of Belcher and Macartney's great work, not yet finished, of English Renaissance architecture. This book is a continuation of Gotches' English Ren. architecture, and is published by Batsford, London. It is profusely illustrated with many beautiful plates.

Of the modern German and French authorities, the following books may be noted: Schnaare's Geschichte der Bildenden Kunste, in 7 volumes, Semper's Der Setil, Boetticher's Tecktonik der Hellenee, and Viollet le Duc's great dictionary of Mobilier Francais.

A small collection of standard, though less recent works, has also been acquired, including Murphy's Arabian Antiquities of Spain, Wood's Palmyra and Balbec, Cottingham's Monograph on King Henry VII.'s Chapel at Westminster, and Texier and Pulian's Byzantine Architecture.

The casts that have recently been added comprise a small but choice collection, illustrating English Gothic details. These casts, it is understood, were obtained by favor of the owners from a private collection in London, and are, therefore, the more interesting, as being to some extent unique.

Two distinguished French visitors to Montreal last winter, one of whom was M. Rene Doumic, who lectured at Laval University, expressed themselves as greatly pleased with the fine collection of casts already displayed to such advantage in the Engineering Building of McGill University.

ARTIFICIAL BLACK MARBLE.—A black marble of similar character to that exported from Belgium—the latter product being simply prepared slate—may, says the Boston Journal of Commerce, be produced in the following manner: The slate suitable for such purpose is first well and smoothly polish with a sandstone, so that no visible impression is made on it with a chisel—this being the rough—after which it is polished finely with artificial pumice stone, and finally finished with extremely light natural pumice stone, the surface now presenting a velvet-like, soft appearance. After being allowed to dry, and the surface being thoroughly heated, the finely polished surface is impregnated with a mixture, heated, of oil and fine lampblack. This is allowed to remain twelve hours; and, according to whether the slate used is more or less grey, the process is repeated until the grey appearance is lost. Polishing thoroughly with emery on a linen rag follows, and the finishing polish is with tin ashes, to which is added some lampblack. A finish being thus made, wax dissolved in turpentine, with some lampblack, is spread on the polished plate, warmed again, which after a while is rubbed off vigorously with a clean linen rag. Treated thus, the slate has a deep black appearance like black marble, the polish being just as durable as the latter.

Architects.

FRANK DARLING. J. A. PEARSON.
DARLING & PEARSON
Architects,
Members of the Ontario Association of Architects.
Toronto Railway Chambers, King and Church Streets, - TORONTO

STRICKLAND & SYMONS,
ARCHITECTS
35 Adelaide St. E., - TORONTO.

Henry Langley. *Chas. E. Langley.*
LANGLEY & LANGLEY,
ARCHITECTS
Members of the Ontario Association of Architects.
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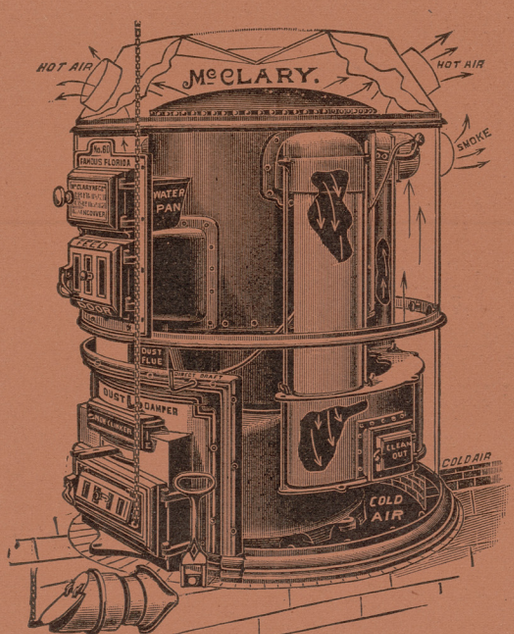

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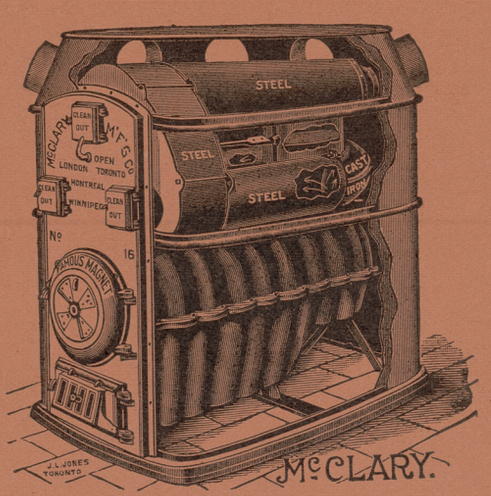

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