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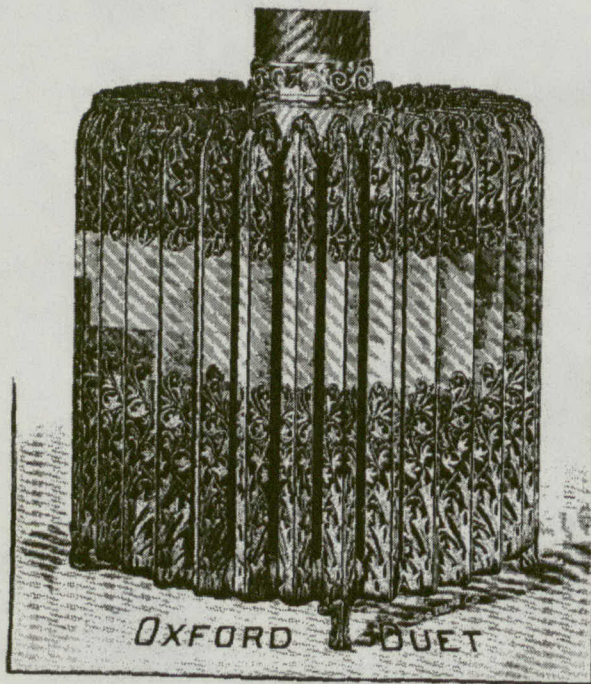


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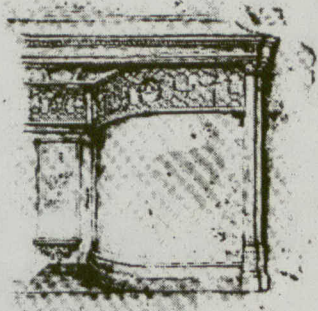
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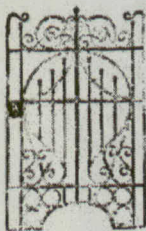


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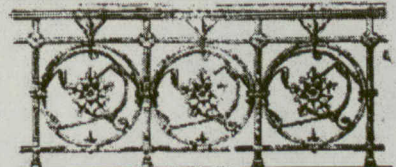
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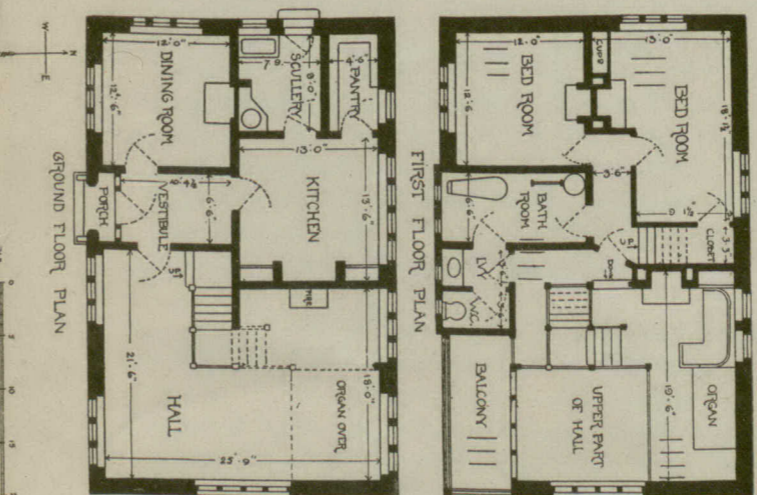
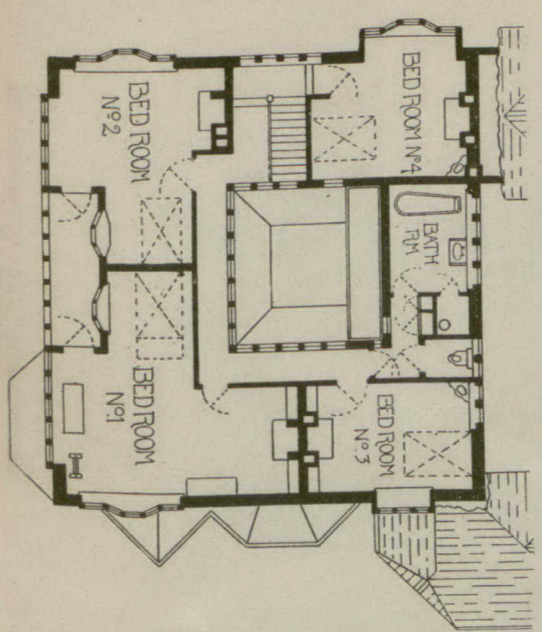
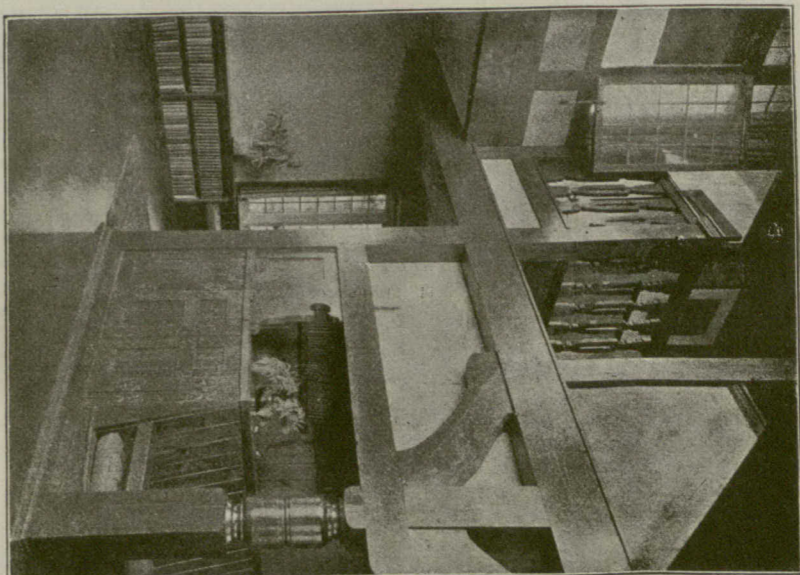
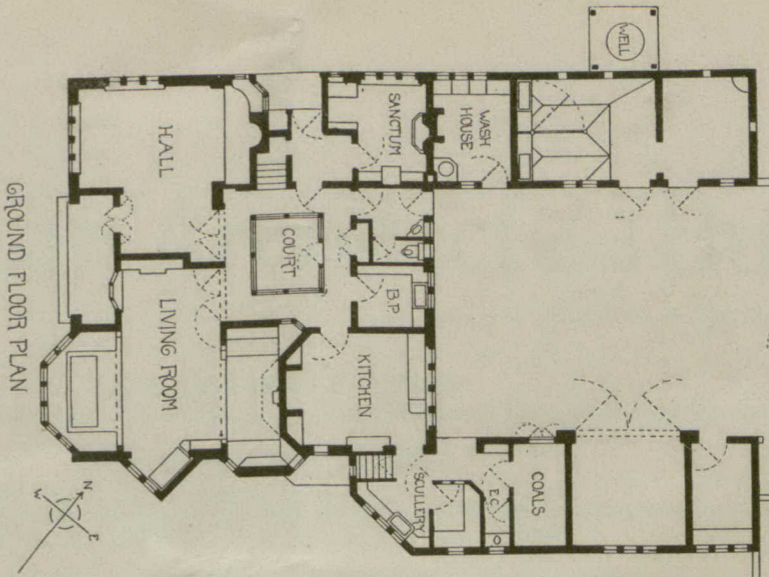
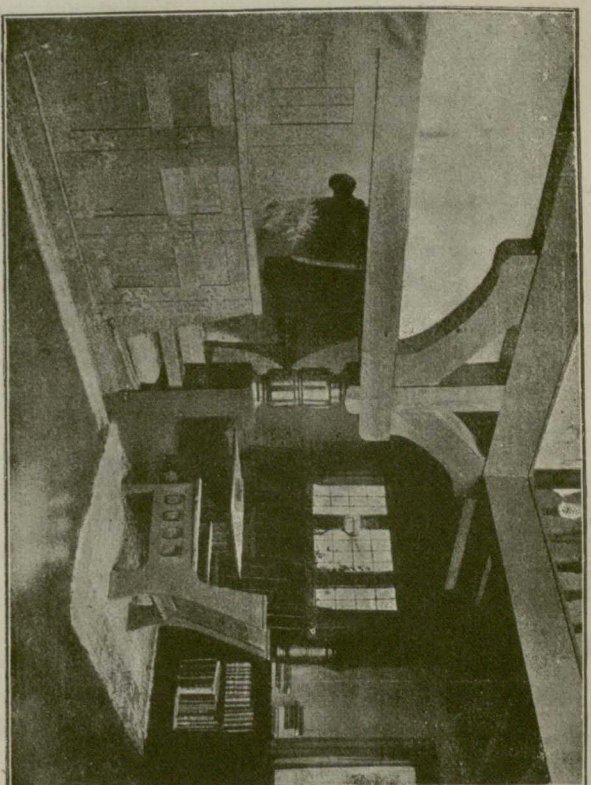
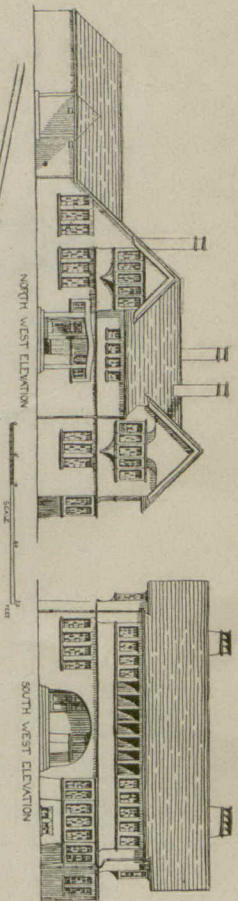
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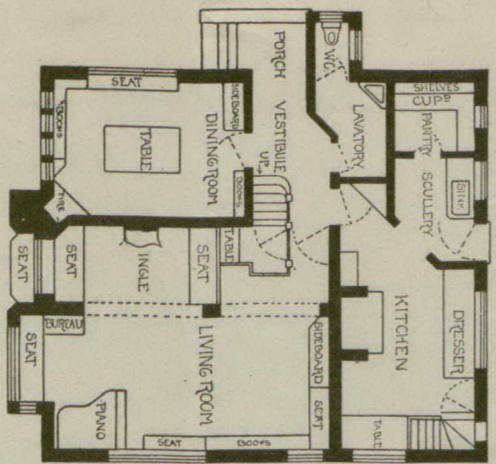
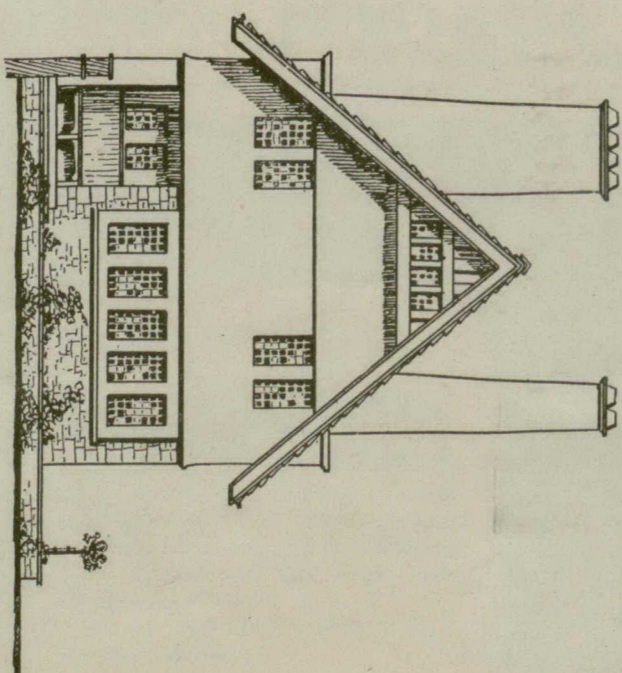
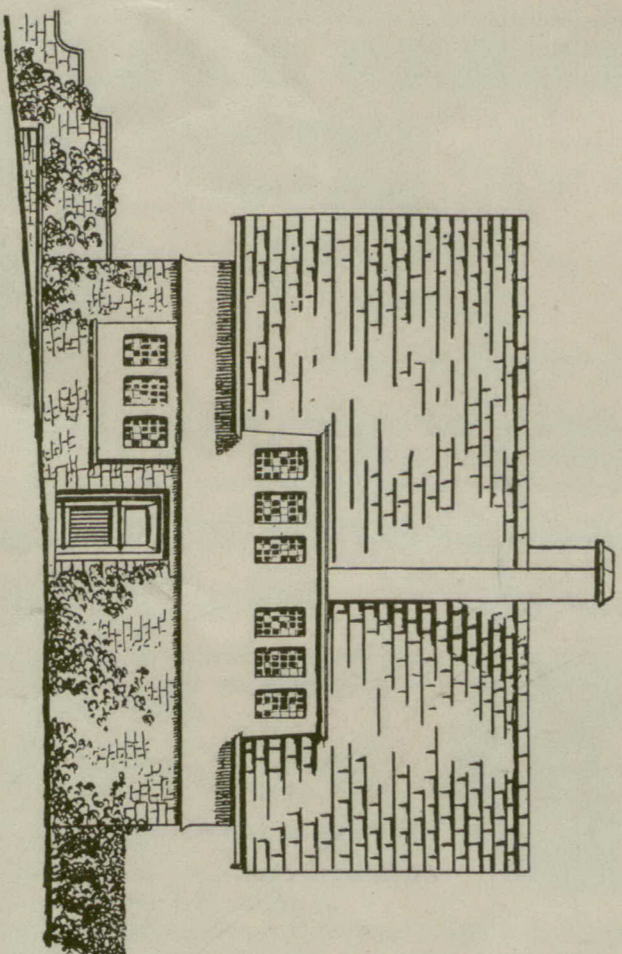
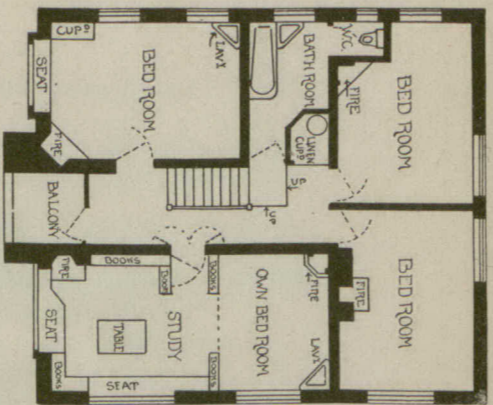


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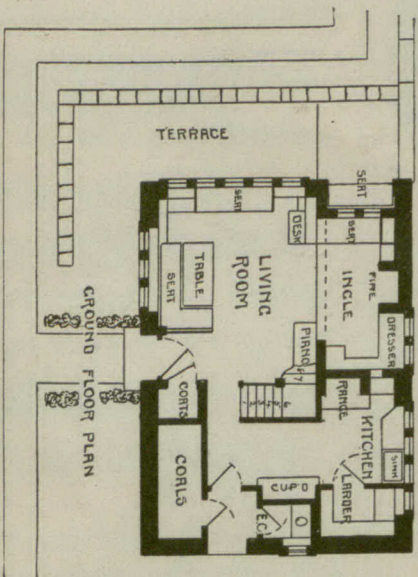
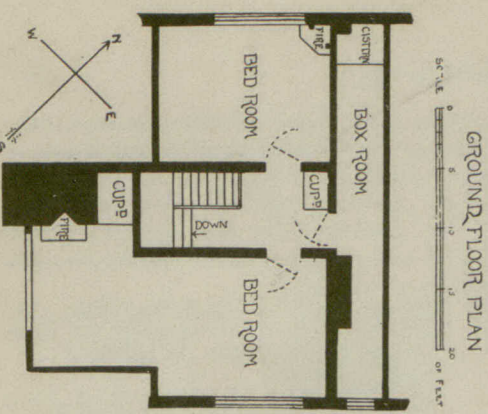


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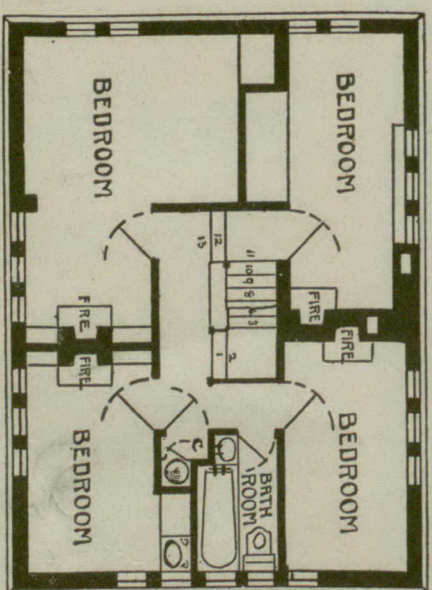


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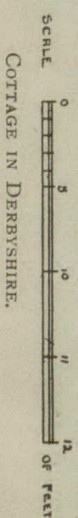
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# The Canadian Architect and Builder

VOL. XIV.—No. 160.

APRIL, 1901.

## ILLUSTRATIONS ON SHEETS.

Designs of Small Houses and Cottages—Illustrating Paper in this Number by Barry Parker and Raymond Unwin.

## ILLUSTRATIONS IN TEXT.

Design for Cottage at Toronto Island—By Chas. Lennox.  
United States Government Building, Agricultural Building, and Plan of Grounds, Pan American Exhibition.  
Illustrations accompanying Paper on Landscape Architecture by Frederick G. Todd.

## ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

Photogravure Plate—Residence at Ottawa—A. M. Calderon, Architect.  
“ Facade of Cathedral at Ferrara, Italy.  
Stained Glass by W. Bloomfield & Son, Vancouver, B.C.  
Sculpture for the Pan-American Exhibition Buildings.

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## SPECIAL CONTRIBUTORS.

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“ FREDERICK G. TODD, Landscape Architect, Montreal.  
“ R. A. L. GRAY, Electrical Engineer, Toronto.  
“ W. H. ELLIOTT, of Messrs. Elliott & Son Co., Toronto.  
“ J. C. B. HORWOOD, Architect, Toronto.  
“ A. F. DUNLOP, R.C.A., Architect, Montreal.

### Decoration of the Grand Dome at the Glasgow Exhibition.

WITHIN the brief space of six months two young Glasgow artists, Mr. John Dall and Mr. David S. Neave, neither of whom had any previous experience in mural painting, have successfully planned and executed a scheme of decoration for the grand dome of Glasgow Exhibition. The space to be covered measures 226 feet in circumference and 65 feet in height. Within this space have been placed thirty-two figures. Each figure has been cut out of its canvass and hoisted into its place, where it is fixed to the wall. On the cup or curved portion of the dome two large-winged angels with palms and laurels face one another, each with an attendant figure at either hand, the composition being connected by six groups of flying amorini. A gilt frieze runs round the circle, and below this are fitted at the window spaces eight seated figures in four groups, symbolic of industry, commerce, science and art. The whole is set in a very decorative landscape background.

### The School of Practical Science.

It is gratifying to state that the Ontario government have promptly responded to the request of the students and interested bodies for increased accommodation and better equipment at the School of Practical Science, Toronto. The government's determination to erect an entirely new building for the purpose is a wise one. The estimated cost is \$200,000, but a larger sum will be expended if the requirements should demand it. The designing of a building for such a purpose will afford scope for

architectural ability of a high order. Probably the most satisfactory method of procuring a carefully designed and planned building expressive of its purpose and adapted to the requirements, would be to institute a competition for designs under conditions to be approved by the Ontario Association of Architects. The government should give the winner of the competition opportunity to inspect the most important buildings of similar character in the United States, the desirable features of which should be incorporated in his plans. The determination to spend so large a sum upon the erection of a building, the equipment for which will call for a further considerable expenditure may be taken to mean that the government propose to establish one thoroughly efficient scientific school in Ontario, instead of dividing the money at its disposal between two or more institutions. We strongly sympathize with this idea. Let us have one provincial university and one scientific school which will compare favorably with those of other countries, rather than a number of such institutions which because of insufficient revenue must necessarily be more or less inefficient.

### The Licensing of Architects.

THE American Architect correctly points out as one of the objectionable features of the Illinois law compelling all architects to be licensed, that it restricts the practice of architecture to architects resident within the state. The Quebec law on the contrary admits to practice within

the province all architects who are certified to be members in good standing of an architectural institute or society, as well as persons who have passed the qualifying examinations prescribed by the Province of Quebec Association of Architects under authority of the Quebec Architects' Act.

**The Building Outlook.**

THE indications point to a season of considerable activity in building. A majority of the architects are now busily engaged on plans of new structures and alterations to existing buildings. Quite a number of contracts have already been let in Ontario, but in the eastern provinces the weather is not sufficiently favorable for the commencement of operations. The bulk of the contracts are believed to be as yet unsigned. Many architects and building owners prefer to wait until the market for materials and the scale of wages for the season can be accurately gauged. Conferences of employers and employees in several of the trades have been held, resulting in agreements to advance slightly the scale of wages. It is not believed however that these advances will in any degree hinder the carrying forward of building enterprises. Prices of materials remain steady. The high price of lumber undoubtedly checked building progress last year. Some projects were held over in the belief that lower prices would rule this season. Such is not likely to be the case however. The activity of demand, coupled with the growing scarcity of good lumber has prevented any decline, and prices are likely to rule higher rather than lower in the future. In Toronto the growth of population calls for a large increase in house accommodation, and considerable activity is already manifest in that direction. The erection of the new Toronto hotel, the site for which is now being cleared, will afford an outlet for large quantities of materials, provide employment for a small army of artizans, and be the means of greatly improving the appearance and trade of a locality which for some years past has suffered a decline.

**THE PREFERENTIAL TARIFF AND TRANSPORTATION.**

The preference of 33 $\frac{1}{3}$  per cent. which is granted by the Canadian tariff to British manufactured goods entering Canada, appears not likely to benefit British manufacturers to any considerable extent. The reason is that United States manufacturers, in their determination to maintain their hold on the Canadian market, are cutting the prices of their goods to Canadian buyers to the extent necessary to enable them to undersell the British manufacturer, notwithstanding the advantage which the latter enjoys under our tariff. In order to do this, United States manufacturers are selling their goods in Canada at prices much below those charged to their customers in the home market. The only person, therefore, who is being benefited by the preferential tariff is the Canadian consumer.

Discrimination in railway freight rates also enables United States manufacturers to undersell Canadian manufacturers in their own market. As an illustration, we may take the case of corrugated iron. Every sheet of this material used by Canadian manufacturers must be brought into this country from the United States. Most of the material comes from Pittsburg. We find that the Pittsburg mills are selling the finished product to the customers of the Canadian

manufacturers to whom they supply the sheets. On account of lower freight charges, the Pittsburg mills are able to ship the manufactured material to British Columbia, pay 25 per cent. duty, and undersell the Canadian manufacturer in that market. They can lay the finished product down at \$1.00 per 100 lbs. plus the duty, while it costs the Canadian manufacturer \$1.48. The Canadian Pacific Railway Company claim that they cannot meet the rates granted by the American roads, although their freight carrying facilities are not fully taxed. Surely it would be better for them to carry Canadian goods at a small profit and thereby help out the Canadian manufacturer, than allow his trade to go to the United States manufacturer and the goods to be entirely carried by American roads.

It will be seen that the tariff question has become one of the greatest importance in Canada. Some means of regulating rates and conditions are needed. Whether the proposal of the government to appoint a railway commission would effect the object in the most satisfactory manner is a difficult question to determine, and one which would largely depend on the powers and privileges granted to the railways by their charters. If such a commission is appointed, it should be entirely beyond political influence, and should be so constituted that the character of its administration would be continuous, giving opportunity for the members to become thoroughly familiar with the questions with which they would be called upon to deal.

The proposition has been brought before the Canadian Manufacturers' Association that the preference should only apply to British goods brought into Canada through Canadian ports. This proposition has in view the laudable object of building up Canadian seaports, but there are other phases of the question which are equally important and which must be taken into consideration. If Canadian manufacturers are to successfully compete with those of the United States for foreign trade, they must enjoy equal shipping facilities. It is evident that we can only bring to Canadian ports as many ships as we can supply with cargoes, and that the frequency of their arrival and departure must also depend upon the volume of shipments. With a population less than one-twelfth that of the United States, and with seaports much less advantageously situated, we cannot hope to be able to give our shippers for export as good facilities as they now enjoy by the use of American ports. Under the bonding privileges which now exist, they are placed on equal footing with the shippers of the United States, while if they were compelled to use Canadian ports, they would be subject to delays which would make it impossible for them to compete.

A DESCRIPTION of the granite sarcophagus in which the Prince Consort's remains were interred at Frogmore is published in the Aberdeen Journal. The sarcophagus, with its lid, weighed nine tons, and was drawn through Windsor with eight horses. It was formed out of a single block of Aberdeen granite, and was constructed to contain two coffins. Three of the eight workmen employed in the construction of the sarcophagus are still living.

"Effective advertising is the kind that is always fresh and interesting. If there are several things to talk about, talk about one at a time, and talk about it so that it will make an impression. Don't say the same old things over and over in the same old way.



## THE ART OF DESIGNING SMALL HOUSES AND COTTAGES.\*

BY BARRY PARKER AND RAYMOND UNWIN.

IN no house can every advantage be obtained; each must be somewhat of a compromise; in each there must be a sacrificing of what we deem the less important to secure what we esteem of greater value. It follows that the variety of our attitude must produce individuality in the results.

Suppose we have received a commission for a dwelling house. The first thing is to visit the site and devote some time to thinking out the problem on the spot. The site is the most important factor to be considered, for it usually suggests both the internal arrangement and the external treatment. If the site is a large one the position of the house upon it must first be determined.

A primary consideration must be to place the house as to afford its occupants the greatest possible enjoyment of such beauty of adjacent country or grandeur of distant view as the site can command. While doing this, however, we must so place and design the house that it shall not stand out as a disturbing excrescence, but shall look at home in its place, in harmony with its surroundings.

This consideration of the house as a detail in a larger picture will bring us to a determination of its general form, its treatment and its colouring. Some positions demand a lofty building to crown or complete a spur of rising ground, for example, while others seem to suggest that it be kept as low as possible, as when it nestles under some protecting hill-side. And in the country at any rate the low house is usually more successful. Some natural terrace may suggest a long house with all its rooms facing one way, or a ridge may indicate a double-faced house commanding the outlook over each slope, or perhaps a steep hillside will require a house following its lines and clinging to it storey by storey, while a gentle slope will demand a general grouping of the roofs to give a sense of stability by contradicting it.

In the choice of materials and colouring, harmony rather than strong contrast should be sought. There is only one sure way of obtaining this at all generally, which is of course to keep to local materials and local ways of using them. In some places a low-toned colour-scheme, such as stone walls and grey stone or slate roof, seems most fitting, in others the warmth and brightness of bricks and tiles; some invite the homeliness of whitewash, while others suggest the deep colouring of green or purple slate. Whatever it is, some definite colour-scheme should be adopted and colours of paint and any enrichments made to contribute to it.

Greatly as must the site influence the external treatment of the house, its internal arrangement will be even more definitely dictated by it. The position of each room in relation to the points of the compass and the outlook should be determined on the spot. It is now pretty generally realised that no sacrifice is too great which is necessary to enable us to bring plenty of sunshine into all the main living-rooms. The general rule would seem to be, to so contrive as to get the sunshine into a room at the time when it is likely to be most occupied. Let a study or breakfast-room be east or south-east, a general living-room or drawing-room south and south-west. A good western window in the room we most occupy in the latter part of the day gives us

many an extra hour of daylight; while the opportunity it affords us of habitually seeing the bright colour of sunset is a privilege which is worth some effort to obtain. A kitchen is best north-east or east, for the first coming down into the fireless house may well have its cheerlessness reduced by what sunshine is to be had at an early hour; later in the day, when the kitchen is hot with cooking, the heat of the sun should not be added. A bathroom and bedrooms too are pleasant with an eastern aspect, though some cannot sleep in a room into which early sunshine can penetrate.

Next only in importance to such considerations of aspect, and certainly important enough to modify them somewhat, is the question of prospect. For a pleasant outlook is a boon second only to a sunny aspect.

Before leaving the site one should be able to carry away not only detailed notes of drainage, water-supply levels, fine trees, views and aspects, but also a general idea as to the arrangement of the rooms of the new house, an ideal plan to be aimed at, and a sort of mental sketch in block of the general form the new creation should take externally.

It would be only tedious to you if I were to go through all the details of a house, trying to deal with them in a general way. I will therefore take one or two definite examples and explain how and why we worked them out as we did, trusting that the interest which attaches to any active problem solved may come to my aid and redeem the details from tediousness.

We have chosen for the first example a country-house designed for a house in North Saffordshire, partly because the site was not one to very obviously suggest or very imperatively demand a special treatment. The plot of land consists of a small field, long and rather narrow; it is much the shape of a suburban building plot, though situated right in the country (see illustration pages).

The client required the house to have a good comfortable living-room for the general family life; another good room for entering guests and callers; a small den for his own use, with desk, safe, sample cupboards and gun-rack; four bedrooms, one to be a bed-sitting room for an only son; a kitchen with the usual offices; outside there were to be wash-house, stables, coach-house, &c. The house was to be arranged to give as much open-air as possible.

As the site is exposed to the prevailing winds, and the best prospect is in the direction whence they blow, some form of court on to which the rooms might open suggests itself as a means of obtaining the needful shelter. The stable yard not being very suitable for the purpose, the house is grouped round a very small central court, round which a corridor is planned fitted with sliding windows, so that it can be converted at will into a sort of small open-air cloister by sliding the sashes down below the sill. This is roofed over at as low a level as possible to avoid anything of the feeling of a well, which a court as small as this needs must be might soon produce. The main roof also is made to slope away from the court in all directions, so that a good deal of sunlight may find its way in. On to this corridor the main rooms open with wide double doors, and the court being protected against wind on all sides it is possible in any weather, except when extremely cold, to have the living-rooms open to the fresh air to a quite unusual extent. The kitchen, butler's pantry, front and side entrances, and stairs all communicate

\* A paper read before the Society of Architects February 7th, 1901. For illustrations, see illustration sheets of this number.

with the corridor, but so as not to destroy the privacy of the living rooms by obliging anyone to pass the doors when going from one to the other. Pleasing vistas are obtained from the rooms across the court, and from the corridor into the rooms, such as it is not often possible to contrive in so small a house. Provision is made in one corner for a ventilating stove to prevent excessive cold draughts in winter.

The living-room, as the most generally occupied, and therefore most important room, is placed at the south corner, having the double outlook to south-east and south-west, and getting all available sunlight and the best of the prospect. It is not enough to give a room windows in the right direction, however: the room must be so arranged that it shall, so to speak, turn its right face, and the windows be so placed that they shall be naturally seen out of from the most usually occupied parts out of the room. For this reason an angle window commanding the best part of the view is thrown out on the south-east side. The fire is put on the north-east wall, and, so that a thorough sense of cosiness may always be obtainable, it is placed in a deep recess or ingle.

Now an ingle affords a very good instance of how easy it is to misuse the old examples which we study, and that in two directions. For while some neglect altogether the suggestions which they offer, others copy the old forms without troubling to understand them. To make use of old features legitimately, of course one must first understand the reasons which called them into being: the difficulties which they were designed to meet; and when similar reasons or difficulties present themselves to us we may then avail ourselves of the solution which they indicate, not copying slavishly the details, but taking the principle and working it out to suit our own particular circumstances. The ingle, of course, had two main uses: the first was to protect a wide open fire from the cross drafts arising from badly fitting or open doors, shutters and windows; the second was to afford seats near the fire, sheltered from the draughts, where the aged and feeble could rest or any one could keep warm in cold or rough weather. Incidentally, no doubt, our forefathers appreciated the value of contrast, the charm of the ruddy fire-light space glowing red in the ill-lighted building, and the cosiness of the sheltered low recess in the wide and lofty hall. To obtain this charm, as is often done, by forming an ingle so small that one cannot sit in it comfortably, is merely to remove the fire further from the room; while on the other hand, to arrange a large ingle, as is also sometimes done, with a modern tiled register stove set in a chimney breast is to lose the feeling of "sitting on the hearth" and the charm that springs from the fire being able to cast its glow all over the recess, and to be seen from every part where one can sit. To adapt the ingle rooms of moderate size then and justify the space it occupies, it must be large enough to be comfortably sat in regularly: a place where one can live, not merely go to be roasted. The fire must be so designed as to have something of the feeling of the old fire on the hearth, and must not be cut off from the recess or in any way allowed to grow into a fireplace within a fireplace. It is generally well to make the whole recess into the hearth, and we often arrange for the fire to burn in a suitably-shaped fire-brick hollow, which answers all purposes excellently. Fenders are best avoided, and anything like a loose coal-box is a

disadvantage. A coal-box can generally be contrived in the thickness of the wall. The ingle must of course be protected from cross-draughts, otherwise the fire cannot be sufficiently exposed. When properly arranged and fitted with comfortable low seats, the ingle always proves to be a favorite part of the room: the place where people naturally go to sit and rest.

But I am digressing from the plan, and must return to the living-room which we are designing. There the ingle is of somewhat special construction, having several small windows to afford peeps out towards the court and the view, and to give light conveniently placed for anyone reading; and also having cupboards for the display of the clients's collection of oriental pottery which is being utilised somewhat by way of decoration, where the changing lights falling on its bright colourings will give some additional variety to its beauty. The ingle is made deep enough for the seats to serve for sofas.

As meals will be taken in this living-room, a small dais for the purpose is provided in full view of the fire; and, by the client's wish, the recess for this is made a window recess in the form of a large sunny bay, having fixed seats on three sides of the table. This bay gives us another window facing directly to the best view as well as one to the west, which brings the evening light into the room, while the recess is a great advantage, as it prevents the room being blocked up with the meal table.

Near the door a slight recess is formed for a sideboard; and this end of the room is lighted by a window close by, which opens on to the balcony. A recessed balcony is, in our climate, much more useful than any projecting verandah. It is possible, owing to the extra shelter, to sit in such a balcony two or three times as often as in the verandah with open ends.

In this room all the important furniture forms part of the scheme: it is thought out and designed with the building. In the treatment of the room advantage is taken of the beams and lintels required for the recesses, and where these are lacking a deep picture-rail carrying line with them is adopted, under which the side-board, cabinet and windows are arranged to finish, leaving an unbroken frieze above and giving a sense of order and unity to the whole. This frieze is decorated with a painted suggestion of landscape, but in simpler treatment if whitewashed, or tinted with the ceiling, would be light and satisfactory. The lower portion of the walls, under the decorated frieze, is finished in plaster tinted to the required shade by mixing colouring matter with the skimming coat.

Where economy is any consideration rooms may be kept as low as possible, giving additional space subwards, which is as valuable as space upwards, for an air reservoir, and for all other purposes so much more valuable. The house being described is 9 ft. from floor to floor.

The hall or entering-room being intended for less constant as well as more formal use takes a somewhat simpler form. Placed at the west corner with windows south-west it gets all the sunshine during the afternoon and evening, when it is most occupied. It is placed so as to be immediately accessible from the entrance, and opens on to the balcony with folding doors and window. The fire is placed in an ingle contrived under the stairs and half landing, an arch being used in this case to carry the chimney stack and form the recess. The flue from the fire is brought over on to the arch by means of a copper hood. A little bay partly in the porch lights

this angle. The porch is also arranged under the stair landing, with a seat for a messenger under the stairs.

Adjacent to the entrance is the small sanctum. Here, again, something is taken off the square room, which, while improving it rather than otherwise by giving a recess, for desk and pigeon holes, enables us to have a small vestibule with cupboard for visitors' hats and cloaks.

Handy to the entrance and to this room is the main coat-cupboard and the lavatory, from which a side door leads to the stable yard, while the butler's pantry completes this north-east side of the little court. Beyond this and behind the living-room, having its fireplace at the back of the living-room fireplace, is placed the kitchen. It occupies the east corner of the house and has its main window to the north-east, the right aspect for a kitchen. There is a small window to the south-east, to light the range and make it a comfortable place for sewing or reading. One corner between fire and window should always be kept free from doors in a kitchen, so that there may be a place to sit in, and it makes a more comfortable kitchen still where it is possible to collect the doors on one side only. Here an arch-way, closed by a heavy curtain when work is done, leads to the scullery, cellar, larder and back door.

The larder has its window in the back porch to get a north aspect, while thorough ventilation is secured by an opening on the south-east up under the eaves where sun cannot reach it. The cellar was added after the preliminary plans were made, the scullery being re-arranged to receive it. This latter is made to obstruct as little as possible the squint window in the living-room angle, and at the same time gets a south window, which, as there is no fireplace, is a good aspect for it.

The staircase rises from the corridor, and as it is accessible from all parts without passing the doors of the reception rooms, a back staircase is not needed. Where economy is a consideration the back staircase is one of the first things which may be dispensed with, for it adds little real comfort in proportion to its cost.

The bedroom plan follows pretty closely the ground plan, the bedrooms also leading off a corridor round the inner court. The balcony is repeated on the first floor, and, by reason of the parapet and overhanging eaves, it is even more sheltered than that on the ground floor, and makes it possible in two bedrooms to sleep practically in the open air in almost all weathers. It has special value, too, as an addition to the west room, which is designed for the boys' bedroom and study. Here the bed fits in a deep recess out of the way; a washstand is contrived in the sill of the window of the same recess, which is slightly bayed to give the needful room, and a curtain may be drawn across, cutting off all the special bedroom appliances, so leaving a good comfortable study.

The central court enables the corridor to have opening windows to three aspects, so that some can be opened whatever the direction of the wind; it also makes it possible to cut on the bathroom, housemaid's closet, and w.c. by means of a lobby having two little windows on to the court.

Of the treatment of the rooms little need be said. The recesses by the chimney breast are fitted with cupboards and book shelves, which are designed to include simple framings or mantels for the fireplaces; the cornices are arranged to match the cornice over doors and windows and to carry line with a picture-rail running round the

room. Wallpapers or other decorations stop at this rail, all above being taken in with the ceiling. This arrangement enables the ceiling to be broken up with the slopes of the low roofs without giving the ugly odds and ends of papered wall, which really are the only displeasing feature about a ceiling broken up in that way.

During the whole of the planning the elevations are of course kept in view, and the block design carried away in the mind from the site constantly exerts modifying influence. The difficulty usually is to maintain sufficient simplicity; so many features are suggested by little conveniences of planning that one has more often to cut them out, not too seek for them merely for the sake of effect.

This plan which we have just considered representing, perhaps, rather a large house to be classed as "small," does not quite illustrate one point to which we attach very great importance in the designing of small houses. The two plans on illustration page show this—in which a special effort was made to obtain one room (the hall) giving some sense of space in a house not large enough to contain several large rooms. In every small house it should, we think, be a first consideration to secure one room large enough to afford some opportunity for interest being worked into the room itself, and to allow some comfort and dignity in the life of its occupants.

In the house shown the hall was made into the chief living-room and carried up two storeys to permit the introduction of an organ gallery. The gallery leading to the balcony, the landing, and the staircase are all thrown into this hall, the stairs being so arranged as to afford a screen to the fire, forming a sort of deep angle with low ceiling under the landing. The low ceiling continues under the organ gallery and the balcony, the central part of the hall being open to the full height. The sense of cosiness in this angle is greatly enhanced by contrast with the lofty open space outside, while the variety in lighting—whether when the morning sun streams in at the great east window, or when the angle glows red in the gathering dusk—adds a perpetual charm. In the gallery is a second fire with a lounge seat by the organ under a kind of canopy formed by the half-landing of the second-floor stair.

To obtain this spacious hall the remainder of the house has been reduced as much as possible. Only one other small room, for den or mealroom, is provided, with kitchens, offices and four bedrooms, two of which are on the second floor. It is open to question whether it would not have been a wiser use of the space to have thrown the vestibule also into the hall as was at first intended. Much dignity would have been added to the entrance thereby, while the way from the kitchens to the bedrooms would have been even less through the living parts of the hall than now.

Lest you should be inclined to think that only for people living a very exceptional life would it be advantageous to throw so much space into one room, I will next refer to a design made for a London literary man, who, though not able to afford a large house, still by reason of his position, required occasionally to be able to entertain a good deal of society. Here the first consideration has been to obtain a hall which would be at once a comfortable living-room and a dignified entertaining room (see illustration pages). The meal-room has been kept as small as would just allow a little dinner party to be given in it. The fire is placed in one corner,

the sideboard in another; had it been possible to put the door also in a corner it would have been still more convenient, for in a small dining-room it is in the corners that there is a little space to spare.

The narrow Hampstead building plot, having a southern aspect and the best prospect to the south-east dictated the general arrangement of the house and the placing of the best room at the south-east corner. This room is spanned by two arches to carry the wall of the study over; within one of them is placed the fire recess with seats and fitment, thus using up all the space under the stairs to add to the size and character of the room, while the stairs themselves, which are shut off from the vestibule by a door, are also open to the room, the quarter-landing forming a small gallery overlooking it.

The staircase is such an essentially interesting and decorative feature in a house that it always seems a pity to shut it off in a mere passage, and the space under and around it may be made to add so much to a room

ional force. For not only is the total space at our command usually less, but the number of functions which the living room has to provide for is greater, many of the functions of a kitchen being added to it. To combine the comforts of a living-room with the convenience for work of a kitchen will tax our skill in planning, and as the space we can give becomes less our care in the disposal of it must become greater.

Let us again proceed by way of example, taking a rather large cottage designed for a client who wished to live a quiet, simple life, yet on the scale that would allow of his enjoying the more necessary comforts and refinements (see illustration pages). The site is near a small Derbyshire town, and consists of a mound used by the outcrop of some shale grit. The site seemed to demand a simple oblong house with plain open roof kept as low as possible, forming a sort of ridge on the step-sided mound.

The western end of the building naturally becomes the living-room, having plenty of window in the desired



THE PAN-AMERICAN EXPOSITION.—UNITED STATES GOVERNMENT BUILDING.

both in size and individuality. In old houses the charm of such features is well recognised, for the favourite view, alike for the artist and the photographer, is that which contains some peep of stair from the hall, some gallery, balcony, angle or deep window recess. When the most is made of such advantages as can be claimed for the bare square room, they seem but a poor compensation for the loss of character and charm.

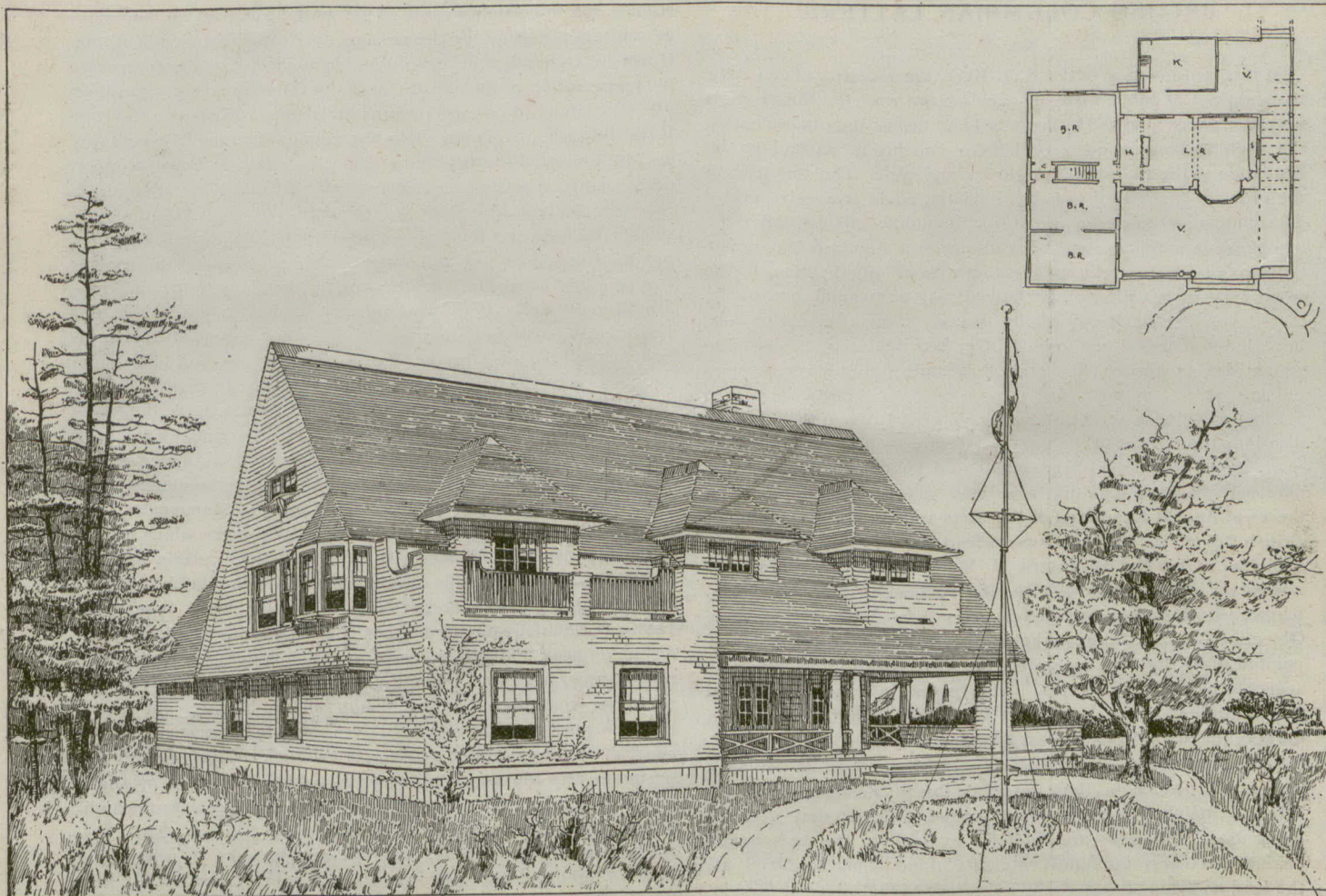
Over the hall in this house are placed the client's studio and bedroom, the two being so combined that both may have the benefit of the whole air-space, book-cases and curtains screening off the bedroom portion. Double doors and double windows are fitted to this room, for perfect quiet both by day and by night is essential, and further to secure this, ventilation is obtained by means of two fire-places with an air shaft built in one of the stacks.

But I must pass on now to cottages, the second part of our subject. I propose to regard as a cottage any house in which separate accommodation is not provided for servants.

To cottages then all that has been said about the advantage of securing a good living-room, even at great sacrifice of other conveniences, applies with addi-

direction. There is a window to the north to command the best of the view—not a large one certainly, but one so placed that it is natural to look through it from the outer door, placed there that it may be possible to enjoy the charm which a door opening direct from a room on to a sunny garden always gives. Such a door must, however, be so placed that while the peep out is obtained the comfort of the room is not destroyed. Here we have gathered the two doors and the stair foot together in a narrow part of the room out of the way, leaving all the rest of the space comfortably to occupy. The fire is placed on the north wall, in a deep recess.

To this one good room is added a kitchen for the more dirty work, fitted with a small range, a good cupboard for coats and hats by the entrance, a coal-place and larder. Upstairs are four bed-rooms; one being rather narrow has a bed-recess taken off the larger room to help it, and as it is over the low ceiling of the angle it gets the advantage of extra height under the sloping roof, and thus the low ceiling, which adds so much to the feeling of cosiness in an angle, is made to help the bedroom over. Where some such arrangement as this is not possible, we sometimes utilise the space between the low ceiling and the floor above as a



· SUMMER · COTTAGE · TORONTO · ISLAND ·

*Designed by Charles Lennox.*

storage cupboard, and we often take advantage of it for ventilating purposes, by bringing fresh air into the room, slightly warmed by passing behind the fire, and delivering it over the opening to the recess, where it is distributed with the least possible draught. Where an outlet into a flue is desirable to supplement the exhaust due to the fire, we find this a very good place to arrange it. In a room with close-fitting iron casements, sufficiently well built not to leak excessively through many parts of the room. A window on the south side admits plenty of sun, and in addition on this side there are floors, skirting and door. The most frequent cause of a smoky chimney is the want of sufficient air-supply, and some form of inlet is an absolute necessity. In bedrooms we have successfully arranged this through a hollow fender kerb in some places.

All the bedrooms in this cottage are so arranged as to have a fairly comfortable corner between the fire and a window, where one can sit to read or write. An east aspect is obtained for the bedroom, and a linen cupboard warmed by the cylinder is provided.

Of the elevations I need only say that local random range stone is used for the ground storey, while for the upper portion the need for obtaining four bedrooms over a house so narrow required the use of 9 in. brick walls, which are rough-cast in cement. To avoid the expense of dressed stone, and also to connect the two storeys a little, all the windows have brick jamb and mullions, and the rough-cast is carried down over them. The roof is covered with local stone slate.

Time will not permit me to refer in detail to any smaller cottage plans. But enough has, I hope been said to make it quite clear that, whatever the size of the house, we think it should grow, both as a utilitarian plan

and as an artistic creation, out of the real needs of the occupants; and that the art of designing small houses and cottages consists, not in following any accepted code of conventions, however useful these may be in their place, but in working out such a convenient and comely setting for the special life that shall be lived as shall enable that life to expand itself to the fullest extent, not merely unhampered by the building in which it is clothed, but actually stimulated by a congenial surrounding.

#### CORROSION OF SOFT STEEL AND WROUGHT IRON.

Mr. F. H. Williams, of Pennsylvania, has recently published the results of some corrosion experiments made with pieces of soft steel containing respectively 0.078, 0.145, and 0.263 per cent. of copper. The steel without copper was found to lose 1.85 per cent. of its weight under the conditions of the experiment, while the pieces containing copper lost only 0.89, 0.75, and 0.74 per cent. in weight. Some experiments with wrought iron showed that the addition of 0.393 per cent. of copper to the iron materially reduced its rate of corrosion. Further information with regard to the effect of the presence of small quantities of copper upon other properties of the iron and steel would be of interest.

Architects, builders and influential citizens in New York City have organized the "Work Together" Club. The object is to promote harmonious relations between employers and employees by bringing about reforms directly affecting the building trades.

The City Building Inspector of Ottawa will conduct an investigation into the cause of the recent collapse of a brick building in course of construction for use as a livery stable. Fortunately only one of the dozen workmen employed on the building when the accident occurred was seriously injured.

## BRITISH COLUMBIAN LETTERS.

No. V.

At a recent meeting of the R. I. B. A. the necessity of elevating the standard of public taste in architecture was the theme of a very able paper followed by some brilliant discussions and remarks, the whole leading to no very definite conclusion as to how the education of the Philistines might be improved. The solution of the problem is not hard to find; Philistia could scarcely exist if all architectural work was good, for the public only estimates the comparative merit of work by taking as a standard that which they have been brought up to believe to be good; thus, if the great mass of architecture is bad, or say only indifferent, public taste being formed almost wholly by association is necessarily also but "indifferent bad": therefore, Oh, Architects! by raising your standard of excellence you will surely elevate that of the contemned public.

The applied arts and crafts suffer as greatly from the want of discrimination evinced by the majority of architects as from the neglect and ignorance of the public, and there is no one art so hideously misapplied as that of stained glass. In our report of the First Annual Exhibition of the Arts and Crafts Association of British Columbia reference was made to the excellence of the glass exhibited in this line by Messrs. H. Bloomfield & Sons. In such a report it is quite impossible to deal with each subject at length, neither is it desirable to do so in other than a general manner. Objection has been taken to the writer's definition of stamped and painted glass, but on reconsidering the passage the definition seems to be perfectly correct. It is plainly inferred that a leaded glass window to be in correct taste must be in the nature of a mosaic, the actual construction of which should enter largely into the design, in direct contrast to a painted window of ordinary acceptance, which is thus described by W. Somers Clarke:—"In the painted window we are invited to forget that glass is being used. Shadows are obtained by loading the surface with enamelled colors; the fullest rotundity of modelling is aimed at; the lead and iron so essentially necessary to the safety of the window are concealed with extraordinary skill and ingenuity; the spectator perceives a hole in the wall with a very indifferent picture in it, overdone in the high lights, smoky and unpleasant in its shadows, in no sense decorative. We need concern ourselves no more with painted windows, they are thoroughly false and unworthy of consideration." W. Lewis Day appears to have very similar convictions, but his opinions are expressed in a work of considerable magnitude, whereas W. Somers Clarke was obliged to give expression to his views within the limitations of a paper on stained glass in general read in the space of a few minutes before the Arts and Crafts Exhibition Society. In such cases subtle differences have frequently to be disregarded. There are extreme purists who claim that all stained glass that is not absolutely a mosaic of stained glass and lead is painted glass and condemnable as such, and the high nature of the work produced by members of this school entitles their opinions to respect, even though we cannot admit that their arguments are absolutely sound. It is clear that their work is exercising a very beneficial influence over a large section of designers in Great Britain. This extremely severe school probably owes its existence to the prevalence for so long a period of the "painted windows" trenchantly denounced by W. Somers Clarke and is really a protest against the extravagances so frequently indulged in. A paper transparency stuck on to a window is but slightly more objectionable than many of the kalidescopic horrors one meets with at every turn.

Vancouver possesses in Mr. James Bloomfield an artist in stained glass in the best sense of the term. Thoroughly acquainted with the history and grammar of his art, imbued with a deep love and reverence for the work of the great early European masters, he has none the less avoided the great danger attendant upon a long and ardent study of ancient methods, for the fascination of this study not unfrequently leads to the conviction that nothing which is not old can be good, thus converting the student into a more or less scholarly reproducer of antiquities. No one believes more completely than does Mr. Bloomfield in modern advantages and opportunities, neither can anyone hold more decidedly than does he that modern work will some day surely equal the old and will also possess noble characteristics distinctive of its own period.

Fourteen years ago while acting as a junior draughtsman in an architect's office in England he turned his attention to wood engraving and discovered his own capacity for decorative design. His removal to this country interrupted the sequence of his

studies, but opportunity came to him in the guise of an illuminated address presented by the citizens of New Westminster to the Governor General, the Earl of Aberdeen. His Excellency proved his appreciation of the artistic merits of the address by requesting Mr. Bloomfield to prepare designs for a series of medals for the Boys' Brigade of Canada. His Excellency then made it possible for Mr. Bloomfield to proceed to Chicago where he became junior designer to a firm ranking second only in America to Tiffanys. Here our student attended the Chicago Art Institute, drawing principally from the life, but losing no opportunity of gleaned any knowledge of any and everything connected with decorative design; thence to New Orleans as chief draughtsman to a firm of glass workers, but making time to study at the art schools. Finding his progress here unsatisfactory he proceeded to Europe and pursued his investigations into decorative art all over Flanders; so on to London where he worked at decorative painting principally, but seizing every opportunity of studying at the Polytechnic and South Kensington, drawing, too, continually from the life. During this period of unremitting labor he succeeded in seeing a very great proportion of the famous stained glass in the south of England. Sending some sketches of glass to Manchester, Mr. Bloomfield was immediately offered a position there which he had to decline owing to the necessity of completing certain work he had in hand; however this overture was renewed later and accepted and, if possible, he got down to harder work than ever. He was principally engaged upon church windows, but worked also upon head and tail pieces for type foundries, on decorative painting and heraldry. Finally having prepared designs for the memorial windows to the late Bishop Sillitoe he came out to execute the work and has remained ever since in Vancouver. The coast does not yet afford a designer of such resources many opportunities for the full exercise of his powers, but even in slight and quite inexpensive commissions one finds a character and individuality stamped upon the work that is refreshing. The illustrations, on separate sheet, are from photographs in which the play of light and the color values are of course more or less lost, but the broad vigorous treatment is preserved.

During the past season building operations have been fairly steady, both in Victoria and Vancouver. We believe it has proved a record year for the former. In Vancouver several blocks have been completed, principally on Hastings street, in which few vacant spots are to be found between Granville and Cambie streets. Granville street has also made a solid advance between the Depot and the Hotel. The town is now growing so large, and the site covers such an enormous extent of country, some of it "quite in the country" as a matter of fact, that it is not easy to keep track of all the building. It is principally in the West End that residential work has proceeded during the past season, the southern slope towards English Bay showing to a marked extent the tendency of the people to go farther and farther from the business centre. Probably the most important building of the year is the new Roman Catholic Church, "Our Lady of the Rosary," which possesses a fine peal of eight bells. The vaulting is lath and plaster, the shafts of the columns are scagliola and the geometrical tracery is wooden throughout. In spite of this and the fact that much of the detail is galvanized iron, this church is a great advance upon anything else yet built in the city;—we mean, of course, in ecclesiastical work. It is delightful to once more hear the distant bells, even though the ringing is not yet very scientific. In residential work nothing very notable has been accomplished, the larger work being rather pretentious than interesting. Most of the houses are a very local version of Colonial, which was at best but a wooden imitation of the weakest style that prevailed in English architecture, a period in which it is generally acknowledged that art in general reached the extreme low water mark of English history.

The Arts and Crafts Association of British Columbia held its first annual general meeting on the 4th March; the attendance was somewhat meagre, but the report of the work carried out during the past twelve months was distinctly creditable. His Honor the Lt.-Governor was elected Second Patron and Mr. Harry Abbott, Third Patron; W. J. Ferris, President; Mr. R. B. Ellis and Mr. R. M. Frupp, F.R.I.B.A., vice-presidents; Mr. Q. M. Eveliegh, secretary, with a very good committee, in which pictorial art is perhaps a little too strongly represented. It is to be regretted that the craft as a whole do not appear to recognize the value of the work attempted by the Association.

There are rumors of a Carnegie Free Library, of possible art school and even technical schools; Mr. David Blair, of the newly formed normal school, is inculcating elements of art training into the public school teachers. It really does look as though 1901 is to be the year of inauguration of art education in British Columbia. May it prove to be so.



THE PAN-AMERICAN EXPOSITION.—AGRICULTURAL BUILDING.

## BY THE WAY.

THE great stone lion which for thirty years surmounted Robert Walker's "Golden Lion" store on King street east, Toronto, has gone into obscurity, temporarily at least, in consequence of the tearing down of the building to make way for the large hotel. The lion was constructed of solid stone, in five parts, bolted together with iron rods. It measured ten feet in length and weighed three tons. The modelling was well done, and, viewed from the street, gave a satisfactory appearance. If gifted with speech, the old lion would be able to tell of many interesting sights and changes witnessed in the thirty years during which he occupied his exalted position. He saw the flickering gas lamps replaced by electric arc and incandescent lamps fed by hundreds of wires traversing the streets; the slow-going horse car give way to the clean and commodious electric car travelling at a speed of ten to fifteen miles an hour; the introduction of the telephone, bringing thousands of persons into easy communication for business and other purposes; the substitution of asphalt and granite sets for wood block pavements; the transformation of Toronto Island from a barren waste of sand and swamp into a beautiful pleasure resort. He also saw the erection of the new municipal and legislative buildings, a new union railway station, a dozen or more handsome office buildings, and many stately and attractive residences. Unfortunately he was called upon to witness the downfall of the great establishment which he was designed to represent, and the decline of trade in his locality, which however is likely in a considerable degree to be restored by the erection of the new palace hotel. I should like to think that a place of honor may again be found for the old lion whose dignified proportions, in common with thousands of other citizens of Toronto, I have frequently admired.

x x x

FROM an interesting paper on Church Bells, presented by H. Rose before the London Architectural Association it is learned that the parts of a bell are as follows: the "cannons," by which it is fastened to the stock; the "crown," or top of the bell; the "waist," and the "lip," which forms the lower margin. The "sound bow," or thickest part, is between the waist and lip. It is here that the clapper strikes; if 1 in. too high the full tone is not given, and if 1 in. too low the bell may be cracked. The clapper hangs from the "bow staple" and has a

prolongation below the striking surface, termed the "flight." It may be noted, says the writer, that, by Common Law, a place of worship of any denomination may make use of bells, but it has been held that, if used in such a way as to become a nuisance, they may be proceeded against, as was done in 1851, when an action was brought against a Roman Catholic community at Croydon. In Derby they used to ring the church bell when fish arrived by coach. St. Alkamund's five bells were supposed to say, "Fresh fish come to town." St. Michael's three bells, being somewhat sceptical, "They stinken"; and All Saints' ten bells, as suggesting a remedy, added, "Then put a little bit more salt on them."

x x x

THE London Building News reproduces from the January number of this journal the pen and ink sketch from balcony of the Toronto Bible Training School, and remarks:—"The plan of this trans-Atlantic school is a very good one, and as seen in the accompanying perspective sketch, its exterior, with the high pitched roofing slopes and domed gables in half timber, might almost be taken for an old block of country side buildings in Normandy." The News is kind enough to say that "The Architects' Edition of the CANADIAN ARCHITECT AND BUILDER is admirably printed, being produced with style and finish."

A copy of the catalogue of the Fourteenth Annual Exhibition of the Chicago Architectural Club, has reached us. It contains the competitive designs for the first travelling scholarship of the club, sketches of foreign work, a number of designs by American architects, and an address by Frank Lloyd Wright, to the Chicago Arts and Crafts Society on "The Art and Craft of the Machine."

## PUBLICATIONS.

From the Engineering News Publishing Co. of New York has been received a copy of a new book of graphical tables for computing the size of iron and wood beams and columns. The author, Benjamin E. Winslow, in his preface states that his aim has been to include all ordinary cases that are likely to occur in building construction.

Willie Rich—Say, Sammie, my father's home was built on a architect's plan.

Sammie Poor—Aw, dat's nawthin; my dad's home was built on de instalment plan."

An extract is stronger than the original substance. A concentrated campaign in a few good papers is more effective than small space in a great many.—Current Advertising.

## DIFFERENCES IN ESTIMATING AND CAUSES OF THE SAME.

BY M. F. SHAY.

Among the many perplexing questions presented to a master painter there is none that requires so much thought as the question or problem of estimating correctly. It must be distinctly understood the master painter is not entirely selfish, and the desire to do justice to the party seeking an estimate on work is many times paramount to the interests of the painter.

In the first place although not selfish, he naturally feels when a complex or difficult job comes his way to be figured on, he would like to do the work. Then there is a certain kind of work in the job that he has always regarded as a kind of specialty of his on account of doing some of that work prior to going in business for himself. He feels that if the owner is to have justice done to his work he is the man that must do it. Again, the feeling is on him that in order to do this work and for the owner to get that justice that he must pay for, it is necessary for him to make a low figure on the work, for he has been informed that Mr. A. is going to make an estimate on the work, and he is afraid of the laughter of Mr. A. and other competitors if he figures too low. On the other hand, if he figures high he receives the ridicule of the owner and his friends. So between two fires, as it were, he is in a quandary, and at times, when all is over, it would have been some more money in his pocket if he received the ridicule.

In talking over this matter of estimating on work with men who are in the business, it is refreshing, to say the least, to hear their different opinions given in regard to the estimate of master painters who are in active business. The consensus of opinion is, however, that there is but a small percentage of men doing business to-day that know how to make an estimate on our work. This is not through a lack of knowledge of the business, however, for it has been proved many times that the most practical, or, in other words, that the very best workmen are not the most successful in the painting and decorating business.

That there is something in this which has not received much attention at our many meetings and conventions is my purpose to demonstrate to you. I would state right here that no better subject for discussion or argument could be brought before a meeting than differences in estimates and the causes leading to the same.

I have a very vivid recollection of a good piece of advice given me by a dear friend upon entering the painting business. It ran in this way: "When you figure on a piece of work be careful and do not base your estimate on a day's work you can perform yourself. You will do a wiser act by basing your estimate on the amount accomplished by your employees." I have never forgotten the advice so given, and many times, when estimating and acting on my friend's advice, I have congratulated myself when informed that my figure was too high, or that Mr. B. could figure closer than I could, and that he had been awarded the job.

In looking over the ground, if I might be allowed to use the expression, the man or firm who always aims to get the lowest figures do not at all times prove to be the most successful, either in reputation or financial standing, and the opinion of those who claim to know is that the man who aims to strike a medium is generally the

most successful, and he is certainly respected by his competitors.

Many of you will say, and with reason, too, that if we were to strike a medium all the time we would not get any business; we would lay around our places of business and trade would go by. There, I think, is where you are mistaken, for if all men were to try and arrive at that point there would be little variation in estimates for doing a certain specified work. In making an estimate I would advise all of you to figure on work just as it is specified, and pay no attention to verbal instruction that is often gratuitously given when figuring plans by an interested bidder; for you can rest assured that when specifications are written the owner or his agent will try pretty hard to have them carried out, regardless of the opinions of others whose interest caused them to give advice to the contrary when you made your figures.

This is a great cause of difference in estimating, and it is based on this very fact: The architect, if questioned in regard to specifications, will inform you that he will have them carried out to the letter; the contractor or builder will say: "You suit Mr. A., the owner, or his agent, and I will be perfectly satisfied."

I have known master painters who have acted on verbal instruction to get beautifully stuck in trying to carry out a contract not wholly in accord with specifications, but entirely so with verbal instructions they have received, and strictly so, for the money they have been paid, for the material furnished and the labor performed.

Is it a matter of surprise that many men get tired and weary of the strain in trying to do an honest and fair business when confronted with ways and means like this? I suppose it is another illustration of the "survival of the fittest," but this is not all applicable in this particular trade, as the very men who become disheartened and discouraged are better qualified and better equipped practically to carry on the business than are many who are to-day doing a successful business. The latter are men, you must understand, who are willing and prompt to decline verbal instruction when estimating on work; they propose figuring on doing the work in accordance with specifications as they are written. I believe nearly all men are perfectly honest in figuring on work, but they differ on what we will call the point of view in which they look at it.

I have seen men looking around the outside of a house; in fact, pace the distance around and guess the height and put in an estimate on that basis. This is to me rather a poor foundation for basing an estimate. Another will call and guess that three of us can paint this side down in a day, three for the opposite, two for the rear, and, say, four for the front—twelve days for one coat, twenty-four days for two coats; and there are twenty pairs of blinds—will allow four days for them. Now, to get at the amount of stock required he guesses again that it will take about 35 pounds of lead and colors to make the necessary tints. Then the question arises, How much oil will he use? He happens, luckily, to think he is using lead that requires seven gallons of oil to the hundred. Then he wants some japan. By the time he has all this detail figured out another painter has been along, measured the house, put in his bid, and possibly has made a start on the work when the detail painter comes along to put in his estimate.

On another job a master painter will make an estimate by comparison. He will say to himself or party he is



figuring for: "This house of yours is just about the size of Mr. B.'s over on D street. I painted his house with two coats last year for so much money. Now, I'll tell you what I'll do. Business is not very rushing and I want to keep the boys at work, and as your house is smaller than his, I will take fifteen dollars off that price if you will let me do yours." At the same time the party the painter is talking with knows his house is very much larger than the house on D street. He is also aware of the fact that there is much more work on it. Sometimes it happens that the painter's offer is declined with thanks, for the owner feels that the painter cannot do justice to the work under existing circumstances and his exhibit of his knowledge of dimensions. Many times, though, the offer is not declined, and the painter has the experience without the profit. These are but examples of the manner in which estimates are made. My advice is to steer clear of them. There is another, however, that you must guard against—that is the man who tells you, confidentially, of course, that Mr. G. has made an estimate on painting his house, and having a real high opinion of you and your work, he would like to have you figure on it, but fears you figure high. Further along he will say that he will not tell you Mr. G.'s figure, but if you will give him a pencil he will mark it for you, and if you can figure lower, why, you can do the work. He marks the figure—one out of his head, usually. Sometimes the honest painter bites and is caught, all because the confidential manner was more than he could stand, and also because he figured on what he did not see. The one great lesson to be learned by all master painters in thus showing how some people do the turn is this: They must place a little trust in a competitor and more in themselves. Because a party says Mr. B. said he would paint my house for two hundred dollars, it does not necessarily follow that he included a summer house, a stable, and perhaps a mile of fence; and if a competitor of Mrs. B.'s is so anxious to paint the house, etc., etc., that he is willing to do all this work for ten dollars less than Mr. B. estimated on the house, I, for one have no sympathy with him when he gets caught. The great trouble with the average master painter is that great desire he possesses of doing all the painting and decorating in the city or town in which he is located, and some even have done a little emigrating in order to satisfy an ambition they have in this particular line. While some few have succeeded, many have not. Although at times we may be informed that the extra work would cover the shortage, my advice would be, when estimating, never take into consideration any extra work for covering a low figure on a job, for if you do you will find in balancing your account you have made a mistake, or, to use a homely phrase, "You have sent a boy on a man's errand." I believe there's but one correct way in which to do our business, and that is, that every contract or job pay a fair percentage of profit. We cannot do a department store kind of business by marking goods below cost. Do not figure your work below cost so you can secure the extra work and make up your losses on that, for the chances are that in the modern style of doing business if you want the extra work you will have to figure just as close on that as on the original contract. To sum up: I would advise every master painter never to make an estimate by guessing or pacing; use a tape, yardstick or rule, and measure every piece of work on which

you have to give a price. On completion of your work, if you have measured correctly, you will be agreeably surprised at the result.

Don't put too much confidence in the people who say Mr. F. figured this, and he said he would do it for so much—30 or 40 per cent. less than your figure; but they will tell you they would prefer to have you do the work, and if you so desire you can do the same at his price.

Don't place too much trust in the man who says: "Why, why! Mr. G., the painter—and a good one, too—says he will do all this work with three or four coats, and at less figure than you can at two," for the reason that these people do not understand these things, and in many cases are trying to do the painter; whereas, if you allow Mr. G., the good one, too, to do the three or four coats, you can rest assured that the owner will be done by him. Under those conditions you will feel all the better for not having had anything to do with the the job. Don't be over-anxious about doing certain work, for if you are you can rest assured you will come out on the wrong side of the balance sheet.

#### QUANTITY OF METAL IN THE PARIS EXHIBITION BUILDINGS.

From special information furnished by the management of the exposition, a writer in the Engineering Magazine gives the following as the classified weights of metal construction work used in the buildings of the Paris Exhibition of 1900, and in the Alexander III. bridge.

Structure	Weight in Metric Tons
Large Palace of Fine Arts.....	15,803
Small Palace of Fine Arts.....	616
Palace of Horticulture.....	770
Monumental Entrance.....	188
Lower Palace.....	711
Palace on Faber Side.....	1,596
Palace on Constantin Side.....	1,433
Palace of National Manufacturers.....	2,398
Rearrangement of the Palace of Machinery.....	2,102
Palace of Electricity.....	4,449
Palace of Chemical Industry.....	2,399
Palace of Mechanics.....	2,963
Palace of Civil Engineering.....	4,560
Palace of Textile Fabrics.....	4,687
Palace of Education.....	1,815
Palace of Mines.....	2,514
Alexander III. Bridge—	
Steel Castings.....	2,359
Structural Rolled Steel.....	2,823
Cast Iron.....	270
Temporary Erecting Works.....	400
Total.....	54,568

From Indian Engineering it is learned that the limitations of space and the demands for house accommodation by a rapidly increasing population are combining to Americanise that part of Bombay usually known as the Fort. Huge and lofty tenement houses now cover the large area lying between the Apollo Bunder and the Grant's Buildings, which was reclaimed by Government at a high cost. This used to be the most cheerful and healthy part of the town, says our contemporary, but it is rapidly becoming as gloomy and congested as the new town at Mody Bay. Among the sky scrapers on the Apollo Reclamation Mr. Tata's caravanservi, which is to be the best equipped hotel in Asia, will tower like a triton among minnows. Since the plague Bombay is daily growing in ugliness.

An agreement has been reached between the master and journeymen plumbers of Toronto, by which wages are to be increased 10 per cent. and the hours of labor reduced from nine to eight, from May 1st.

The strike of journeymen painters of Kingston has ended, the employers granting an increase of 15 cents per day of nine hours, and reserving to themselves the right to employ bona fide journeymen.



Branch Office of the CANADIAN ARCHITECT AND BUILDER,  
Imperial Building.

MONTREAL, April 12th, 1901.

NEW LIBRARY STACK AT MCGILL.

A description of some features of the construction of the new stack of McGill University Library now nearing completion, should be of interest. It has five floors opening out of the old stack, but separated from it by a fireproof wall and doors, and from the top floor, which is given up to seminary rooms by a fireproof cement ceiling. The three lower tiers of shelves are supported by cement piers running into the ground, and the two upper tiers and top floor rest upon a special supporting floor on steel girders.

The shelves are arranged in ten rows on each side of the gang way which runs through the stack. They are supported by chilled iron supports from the bottom to the top of the building with notches all the way up so as to accommodate books of any size. The gangways will be floored for six inches in the middle with grating so as to afford ventilation with glass on each side to exclude dust, and light stairways will lead from one tier to the other.

The new stack provides accommodation for 200,000 volumes with reading rooms and the librarian's office in an alcove at one end.

A PROTEST AGAINST SKY-SCRAPERS.

Dr. Pelletier, Secretary of the Provincial Board of Health, has addressed a communication to the city council, in which he calls attention to the insanitary conditions which would follow the erection of tall buildings in the narrow streets of Montreal. He urges the necessity for regulating the height of buildings as is done in Paris and other cities.

PERSONAL.

The death is announced of Mr. Wm. Byrd who for many years carried on a large contracting business on Lagauchetiere street, this city.

NOTES.

The committee entrusted with the erection of a suitable memorial to the Canadians killed in action in South Africa, are said to have under consideration at present a memorial arch on Dominion Square, bearing tablets on which would be inscribed the names of the fallen soldiers, the officers commanding the Canadian contingents and a medallion head of Lord Strathcona.

One of the largest and most expensive pieces of marble ever brought into Montreal is a block of Italian panonazzo, weighing twelve tons and costing \$1,000, which is to occupy a place in the interior of the new C. P. R. Telegraph building.

The Institute of Clayworkers of Great Britain has been invited to discuss with a joint committee of the Royal Institute of British Architects and the Institute of Civil Engineers the standardizing of brick.

The building trades union of Toronto have asked that, for protection of the workingmen, builders be required to lay floors in high buildings as the walls go up.

At the recent meeting of the Ontario Library Association a committee was appointed to report upon the architecture of library buildings.

LEGAL.

MCINNES v. LARKIN.—Judgment by Court of Appeal at Toronto on motion by plaintiffs to set aside judgment of non-suit of Robertson, J., in action for damages for injuries sustained by plaintiff, who, while employed, with his waggon and horses, by defendants, was directed by their foreman to take a load of stone from the stoneyard to the upper new swing bridge at Iroquois. The plaintiff objected to taking five heavy stones on his wagon, but alleges that the foreman insisted on his doing so. One stone fell out of the waggon on the plaintiff and broke his right leg. He complains that the road used by the defendants in their work on the Iroquois canal, between the stoneyard and the swing bridge, was a defective way within the meaning of the Workmen's Compensation for Injuries Act. The trial judge held that the statute did not apply, because the waggon and team were owned by plaintiff, and it was his duty to so load the stone that it would not fall off the waggon, and that the order to load was not so peremptory as to require him to risk life or limb in its execution. It was contended, *inter alia*, for plaintiff, that his evidence showed that the road belonged to defendants, and was out of repair; that the foreman had been negligent, and that plaintiff, though objecting, had been obliged to conform to his orders; that the ownership of the waggon and team was immaterial to affect the statute, because it was the road, not the waggon, that was defective. Held, that there was evidence proper for the jury, that defendants were responsible, through persons in their service, for the placing on the waggon, of the stones, and for the manner of their placing, and that plaintiff had no control over such placing nor the size of the load; that there was also evidence of negligence of such persons in their conduct, and that plaintiff was bound to and did conform to their orders, and was injured in consequence, and there being such evidence to be submitted to the jury, there must be a new trial. Order accordingly. Costs of motion to be paid by defendants forthwith after taxation. Costs of former trial to be to plaintiff in any event.

The decision of Mr. Justice Curran of the Superior Court of Quebec in the case of Dussault v. Montreal Cotton Company, declares that a workman who, knowing that he is running some risk, either on account of the nature of the work he is engaged in, the manner of doing it, or the machinery or implements employed, should at once complain of the danger to some one in charge over him. If he fails to do so, and is subsequently injured, he will probably be awarded either a very small amount of damages or none at all. The fact that he is afraid of losing his position if he makes any complaint will not excuse him for not doing so. D, a stonemason, was employed with a number of other men in cutting stone. The foreman placed the stones in position for the men to work at them. He knew that the stones were of such a kind that chips were more likely to fly than is the case with ordinary stone, but nevertheless he placed them too close to each other. D and his fellow-workmen knew that there was danger when the stones were so near each other, but, though they spoke of the matter amongst themselves, they made no complaint to the foreman. At the trial they swore that they were afraid to do so, lest they should be discharged. In the course of the work a chip of stone or a piece of steel from the implement of a fellow-workman struck D's eyelid and penetrated into the left eye, destroyed its sight. He sued his employers for \$10,000 damages. It was proved that the accident occurred because the stones were placed too closely together; but the judge held that there was grave contributory negligence on the part of D, since he had not complained of a danger which he knew existed, and that therefore, although he was severely injured, he had to blame himself to a large extent. D was awarded \$250 damages.

THE ASBESTOS AND ASBESTIC COMPANY VS. THE WILLIAM SCLATER COMPANY.—Plaintiffs appealed from a judgment which dismissed a demand for a perpetual injunction and quashed the interlocutory injunction issued. The company appellants alleged that they acquired from the Danville Asbestos and Slate Company, and are owners of asbestos mines, situate in the township of Shipton; that on the 5th July, 1899, the company transferred and assigned to the appellants a trade mark obtained by the former and registered on the 3rd February, 1896, which trade mark has the words "Asbestic Wall Plaster," surmounting a trowell, on which was inscribed the letter A; that the respondents have been, and are, in violation of law, using the words of the trade mark, and are selling what purports to be an asbestic wall plaster stamped and labelled as such; that respondents thereby induce the public to believe that they are buying a product of appellants; that appellants have extensively advertise

their product and have established a large and lucrative business in selling asbestic wall plaster and have acquired a right of property in said words. The appellants prayed for an injunction to restrain the respondents and their agents from further selling any goods or materials under the name of asbestos wall plaster, and that the respondents be condemned to pay \$1,000 damages. The plea of the defendants was to the effect that the appellants could not by the alleged trade mark obtain the use of the words "asbestic wall plaster," and the Government of Canada could not give them the sole right to use said words; that respondents had sold "asbestic wall plaster" long previous to the 3rd February, 1896, and since, and have the right to make use of the words "asbestic wall plaster," the word "asbestic" being merely an indication and description of the article sold by respondents. The plea was maintained and the action dismissed, the court being of opinion that the words "asbestic wall plaster" were descriptive of the materials of which the compound consisted. In appeal the judgment was held to be well founded, and it was confirmed.

A decision of importance to contractors was given by Judge Morgan at Toronto recently, in the case of Walker & Craig vs. Ellis and Allridge. The plaintiffs are builders, Mr. Ellis an undertaker, and Mr. Allridge a foreman builder. On February 15, 1899, the defendants covenanted to pay \$600 if one R. Smith failed to build four houses on the east side of Markham street, Toronto, in accordance with certain plans and specifications before November 10, 1899. Smith did not complete the buildings within the time, and the plaintiffs sued for the amount of the covenant. It appeared, however, that the plaintiffs had taken the contract away from Smith and given it back to him in an altered form, without giving the defendants sufficient notice. The Court held that although the defendants were liable under the original contract, its alteration had relieved them of such liability.

HAAR V. O'LEARY.—Appeal by plaintiff in the Divisional Court at Toronto from judgment of Meredith J., in favor of defendants in action, tried without a jury at Ottawa, brought under the Workmen's Compensation Act. The defendants were constructing a sewer, and their employees were in the habit of descending and ascending at each end of the sewer by means of ladders. The plaintiff, an employee, was directed by the foreman to do certain work at a part of the sewer where he had never before been, and after completing the work attempted to ascend to the surface by means of a ladder which he saw and supposed was a means of ascent. Owing, it is alleged, to several of the rungs at the top having been removed, the plaintiff fell to the bottom of the sewer and sustained the injuries complained of. The evidence shows that the rungs had been removed by the foreman to prevent employees using the ladder; really to prevent "loafing," but so that the lower part might be used to reach and prime a pump hanging on the wall some distance from the bottom of the sewer, and thus the ladder was designedly made hazardous and dangerous. The defendant having completed his work and seeing the ladder by the light of his torch, naturally and properly attempted to ascend by it, and it was a defective way, etc., within the meaning of the statute, more especially because defendants failed to supply light in the sewer. The foreman was negligent in not warning the plaintiff. Baker v. Smith (1891), A. C. at p. 334; Denny v. Montreal Telegraph Co., 42 U.C.R., 577; Caldwell v. Mills, 24 O. R., 462; Headford v. McClary Co., 24 S.C.R. per Strong C.J.C., at p. 292, and Heaven vs. Pender 11, Q.B. D. 509 were referred to. The court held that the ladder by which plaintiff attempted to ascend was not a "way" provided by the defendants so far as the plaintiff was concerned, within the meaning of the Workmen's Compensation for Injuries Act, and there was no invitation to plaintiff to use the ladder, but the plaintiff was making a foolish and reckless attempt to get out when he fell and was injured. Appeal dismissed with costs.

LES SOEURS DE LA CONGREGATION NOTRE DAME AND DAME MARIE ANN CLARA SYMES ET AL.—Argument in this action was recently heard and decision thereon given by Mr. Justice Curran in the Superior Court at Montreal, as follows: Plaintiffs and defendants are adjoining proprietors of lots of land facing on Notre Dame Street. The premises of defendant are built on the line at the rear. Some years ago they opened one window after another facing on the property of plaintiffs. These windows have not been constructed, in any way, according to the rules laid down in the Civil Code, so as to prevent a view upon their neighbors property. Plaintiffs their action to force defendants to close these eight windows. Defendants appeared in the suit, but in-

stead of pleading they have filed admissions, virtually covering the allegations of plaintiffs' declaration. They state, however, in justification of their illegal acts, that the health officer of the city has forced them to make the openings, so as to afford light and ventilation to their tenants. This pretension cannot be maintained. The Civil Code, article 534, indicates how windows are to be constructed in a wall immediately adjoining a neighbors property. To get a direct view upon a neighbor article 536, enacts:—"One neighbor cannot have direct views or prospect windows, nor galleries, balconies, or other like projections, overlooking the fenced, or unfenced land of the other; they must be at a distance of six feet from such land." If defendants need, absolutely, to get light, and ventilation, they cannot obtain such at the expense of the legal rights of plaintiffs. They must build according to law, or change their present constructions, so as to come within its provisions. Judgment will be entered for plaintiff ordering the closing of the windows within 15 days from the rendering of the present judgment, and costs of suit against defendants.

#### PERSONAL.

Mr. Geo. W. Gouinlock has been appointed a member of the Council of the Ontario Association of Architects in place of Mr. Eden Smith, resigned.

Mr. W. H. Carrick, vice-president and manager of the Gurney Foundry Company, of Toronto, is on his way to Europe where he will spend two or three months in the Company's interest.

Mr. J. S. McCannell, managing director of the Milton Pressed Brick Co., accompanied by Mrs. McCannell, attended the recent convention of the National Brick Manufacturers' Association at Old Point Comfort.

Previous to taking his departure to his home in the far west, Sergeant A. Sproatt, a member of the Strathcona Horse who has recently recovered from illness in South Africa, was in company with some of his military comrades, entertained at dinner at the residence of his brother, Mr. Henry Sproatt, architect, Jameson avenue, Toronto.

Mr. Joseph W. Wright, of Messrs. Bennett & Wright, plumbers, Toronto, and family accompanied by Mr. J. M. Taylor, manager of the Dominion Radiator Co., and Mrs. Taylor, will sail for Europe on the 26th inst. They will spend three months or more in visiting places of interest on the continent, returning home by way of Great Britain. Bon voyage.

Mr. H. B. Gordon, of the firm of Gordon & Helliwell, architects, Toronto, has been commissioned by the Board of Foreign Missions of the United States to design and supervise the construction of central headquarters for the missions in Corea, including houses for the missionaries, a church and hospital. Mr. Gordon expects to sail from Vancouver for Corea on May 6th and to spend a year on the island.

#### COLORED CEMENTS.

La Ceramique says: The qualities required in the colors used to color cements are: The property of thoroughly mixing; that of not demomposing under the action of lime, and that of resistance to the action of light. These colors should mix completely with the different compositions of which cements are made up, the cohesion of which they diminish. The means of testing them are to mix them with a certain quantity to a given quantity of slaked lime. Care must be taken not to use low-priced materials containing salts of lime and barytes, which give to the objects which contain them, especially when damp, a veiny aspect, which has a very bad effect. The colors for cements should resist the action of chemical alkaline agents. When washed by soda they should not be impaired after a day of this treatment. Those which mix well are unassailable by chemical alkaline agents and resist the action of light fairly well. The best means to assure one's self of these qualities is to color a plane surface and to cover certain parts with some opaque bodies and to expose the painted surface to the sun's rays for some time. The most common red is jeweler's red, or brown red, composed essentially of peroxide of iron in the proportion of eighty-five per cent. at least. Red ochre (calcined) is less recommendable. The ochres, composed essentially of peroxide of iron and alumine of lime, constitute the yellows. These diminish very slightly the cohesion of cements. The ochres have also the advantage of being the less expensive yellows. Sienna earth (not burnt) may also rank in this category. Ultramarine is the blue most employed, but it is well to correct the reddish reflection it has, especially in artificial light, by adding to it fifty per cent. of sea green. These three primary colors serve to compose the secondary shades—orange color, violet, green, etc.; nevertheless the lime-resisting colors not always permitting certain mixtures, one has recourse to chrome greens, ultramarine (already mentioned), and amber. For the gray-blue tints very good results are obtained with graphite.



INTERCOMMUNICATION.

[Communications sent to this department must be addressed to the editor with the name and address of the sender attached not necessarily for publication. The editor does not hold himself responsible for the expressions or opinions of correspondents, but will, nevertheless, endeavor to secure correct replies to queries sent in. We do not guarantee answers to all queries, neither do we undertake to answer questions in the issue following their appearance.]

In answer to J. McD's question in the ARCHITECT AND BUILDER for March, Mr. John Hanrahan, of Toronto, submits the following:

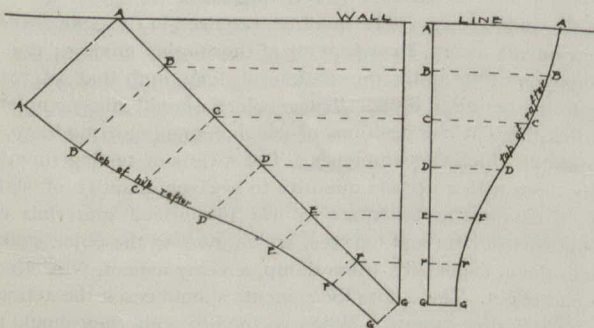


FIG. 1.—CURVE FOR HIP RAFTER.

Let XY be width of verandah, and ZY be the plan or base line of hip. AG will represent ogee rafter. Draw any number of lines parallel with wall line; the more there are the more exact will be the curve of the hip rafter. Draw lines at right angles with line YZ, where intersected by parallel lines.

- Make AA equal to AA
- “ BB “ “ BB
- “ CC “ “ CC

&c., which will give the points for curve of hip rafter.

F. E. K. asks: Can a plastered wall in a building be blackened so that it can be used as a blackboard? If so, how can I prepare a paint to be used to paint it?

ANS:—A good mixture for a wall blackboard can be made by using one pint of shellac varnish to which is added six drahm lampblack, one drahm ultramarine blue, three ounces ground pumice stone, and two ounces of finely ground rottenstone. If too thick to spread on easily

with a brush thin down with alcohol until the right consistency is obtained. Two or three coats will be needed to make it work well. This is perhaps the best mixture in use for this purpose, but, without the wall has been well prepared beforehand, it makes but a sorry excuse for a blackboard, as the plaster will fill with cracks and the black coating will eventually chip off.

W. T. replying to Peter McL. sends the sketch shown at Fig 2, and writes: “I submit my plan of laying down a sill on stone foundation for a balloon frame. It is simple and cheap, being only a 2 x 6 inch

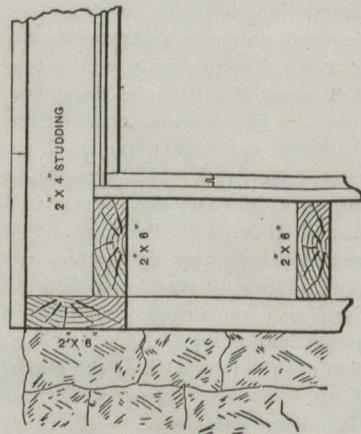


FIG. 2.—SILL FOR BALLOON FRAME.

joist laid on its flat. The joists rest on this and the studs are cut flat-footed and toe-nailed into it. When the studs come down alongside the ends of the joists they may be nailed to the joists and toe-nailed to the sill as well. This will make a strong job of the whole work.”

W. F. D. writes:—“A drain, to be laid from the back to the front of a house, is 72 ft. long and a fall of 1

ft. 6 in. only can be obtained. Please say if laid to that fall if the drain will act sufficiently."

Allowing for a drop of 3 in. into the disconnecting trap the available fall will be 15 in., or 1 ft. in 57 ft. 8 in. Under these conditions a 6 in. drain will discharge about 300 gals. per minute when flowing full bore, or 150 gals. per minute when only half filled. A four in. drain will discharge about 110 gals. per minute flowing full, or 55 gals. half filled. The circulations are based on the supposition that the drains are properly laid, are clean inside, and clean water or rainwater is flowing through them. If improperly laid, or if the water contains mud and gravel in addition to grease and faecal matter, the discharge will be less than given above.

Bricklayer asks: Will you inform me as to the method of putting in a "dump grate" in a hearth so that the ashes from the fire-place may be dropped to the cellar, also give me a sketch of the manner of building the proper shape of throat for flue from fire-place, and the manner in which the hearth is carried on brickwork and concrete?

ANS:—If bricklayer will examine the vertical section of brickwork shown at Fig. 3 he can see the whole construction at a glance. The dump grate is set level with the top of the hearth with room enough underneath to allow the two rings of the dump to play easily. The ash chute is made wide below so as to allow as much room as possible for ashes to fall in. There is

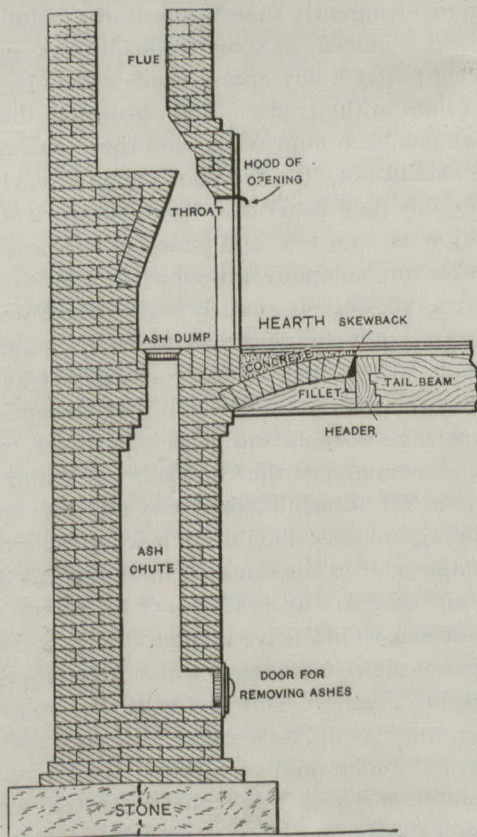


FIG. 3.—SHOWING FIREPLACE WITH ASH DUMP, &c.

a door below as shown which opens when ashes are to be removed. This door should be made pretty tight as the least draft upwards would fill the room full of ash dust. The manner of constructing the throat of flue is manifest and should be easily understood. The entrance to the flue should also be narrowed up at the haunches, the bricks corbeled over on the sides of the fire-place as well as on the back so that the opening of the throat at the flue should be quite narrow. The throat and flue should be well parged and made smooth throughout.

Builder writes: We wish to erect a flag pole 75 or 80 feet high in our high school grounds and would be greatly obliged for information as to the best kind and size of timber to use and the best method of splicing the upper mast to enable us to lower the top.

ANS:—You probably can do no better than to use Norway pine or white pine for your staff. Square up the pole five or six feet at the top and fasten on it two mast irons or cross-heads as far apart as the length of the square part. These mast irons are a sort of double hoop of iron or figure of eight shape, one section fitting the squared mast, the other section projecting therefrom, giving a round aperture for the top mast to slide through. A sheaf or grooved pulley wheel is mortised in the foot of the top mast with horizontal pin or journal. A couple of screw eyes are fastened to the top of the lower mast. A rope passing around and under the sheaf is used to hoist the top mast; one end is secured to one screw eye, the other goes through a pulley or small block fastened to the other screw eye. When in place the top mast is secured by a cross pin or fid, going through a hole in it bored just above the lower iron. The fid when in place projects about an inch on each side.

D. L. H. sends the following in reply to query made by Peter McL: I submit a sketch of a box sill and think it will suit. I have made one of this method for

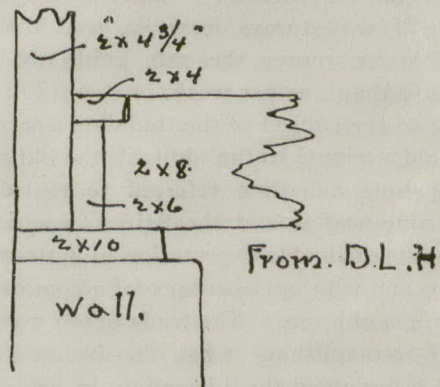


FIG. 4.—SKETCH OF BOX SILL FOR BALLOON FRAME.

a long time and find it easy to lay down, and it does not cost much and is quite sufficient. The sketch Fig. 2 will explain its advantages to the practical builder."

A young carpenter asks for "a good and reliable method for laying out a flight of straight stairs and stairway, and especially how he can determine the proper place to put the back trimmer in order to give the proper head room; also a quick way of finding the "run," and any other information about stairs and stairways that would be useful to an ambitious young fellow."

Nobody can regard the process of erection of many a modern edifice, says the British Clayworker, without clearly seeing that the bricklayer does not understand (or, at least, does not practise) his business. The plumb-line is only occasionally used; the mortar is "slapped" on anyhow; a "stretcher" is very frequently employed where a "header" should be; and the "half-brick" put in with a superabundance of mortar answers its purpose as well as it may. We are not speaking only of buildings of the common class, but of edifices of some pretension. And we have come to the conclusion that the proper functions, so far as they apply to construction of headers, stretchers, and half-bricks are less known to-day than 50 years ago. This is not fair to the bricks, for they are called upon to withstand strains that were never intended in the theoretical construction of the building, and they suffer accordingly.

## PRESENT CONDITION OF THE BUILDING INDUSTRY.

Mr. Thomas Blashill, the late superintending architect to the London County Council, recently read a paper before the Surveyors' Institution on "The Present Condition of the Building Industry."

He insisted on the radical difference between the crafts that make up the building industry and the class of solitary trades and manufacturers. The architect, the mason and the carpenter were not isolated artists like the sculptor or coppersmith, and should any worker not understand his fellows or not look beyond his own department to the scheme as a whole, or should he act stupidly or maliciously, the whole must suffer.

The modern builder on a large scale should have a fancy for machinery and be ready to seize on improvements. So far as practicable, improved conditions of labor in the shop were being applied on the building, but it was not certain how far in London this was due to native smartness, or the example of Scotland and the North, or the pertinacity of American inventors.

In discussing the English builder of to-morrow it was impossible to ignore the work of the American builder of to-day, who was a constructional engineer. With us a first-class city building might rise at the rate of one storey in three weeks; a New York building of which a model was shown in the Paris Exhibition shot up through its ordinary and plainest storeys at the rate of two storeys a week, and in the artistic upper and lower storeys the rate could not have been much slower than one per week.

Coming to the subject of the building operative, Mr. Blashill paid a tribute to the skill of the old artificer in wood and stone, and then referred to the depressing effects of time-wages, and the fixity of position of such men without reasonable expectation of betterment while craftsmen, and with no assurance of a comfortable provision against old age. The trade union was a natural engine for accomplishing what the isolated craftsman could not bring about for himself. In regard to the prevention of sweating, questions between payment by time and payment by results played a leading part. Not that in the eyes of the workmen there was anything specially sacred in either; there were now far more men, trade unionists, paid by the piece than by time, and payment by piece was as stubbornly fought for in some cases as payment by time in others. What really was the fair day's work of which the fair day's wage was the equivalent? "Labor" was often confused with "time," with mischievous results. Not workmen only, but the rest of us, got into a habit of talking about our "time" as if it were something valuable by which money ought to be made. But mere time was worthless to anyone except the owner, if even to him. What the employer really bought was so much improvement to the material he put before the workman as might reasonably be expected to be done in the time by which the payment was calculated. This was simply measurement by the town clock instead of by the 5 foot rod, and if a day's work were a fixed quantity the clock would measure it as accurately and much more conveniently than any scale of feet and inches. Yet, on this side the Atlantic, no workman, no employer, no public authority had seriously attempted to apply in our own industry any kind of measurement, even the rudest, to the "day's work" itself. Surely the Chicago plumber's method of declaring how

much he would do in seven hours and then claiming the right to do it in five with seven hours' pay was in principle honest and fair. The desire to have an easy time was common among time workers of every class, but a more serious matter than mere idleness was the deliberate loitering of which employers had long complained. There was also the important question of work lost to trades by changes in modes of construction, apart from the policy of employers or employed. Thus, the demand for fire resisting construction has already affected the carpenter very seriously. Mason's work, which for a time recovered its place after a long struggle with imitative cement, had now to compete with cut brickwork and terra-cotta; it was said that a this change was due to a mason's strike. In the case of the plasterer, such disputes were dangerously interesting. There were a dozen substitutes for plaster—none perhaps quite satisfactory, but a single architect was now using one of them by the acre—and he had let slip the artistic and interesting branch of his work. On brickwork, which seemed least liable to be supplanted, concrete was encroaching fast—concrete that just failed to become a dangerous substitute twenty years ago, when brickwork was hardly more than half its recent price.

Apprenticeship of the old pattern, in which the youth was bound for seven years, during two or three of which he learnt very little and was of little use, was vanishing with other mediæval customs. The workmen deemed it necessary for their own protection to limit much more stringently than formerly the admittance of apprentices; indeed, in some trades it was practically impossible to get a boy apprenticed unless he was the son of a man in the trade. The position of the building operative has been improving, and there was no reason why he should not, like the poorly paid French artisan or the doubly paid American, leave his work at night in a condition as to dress and general appearance good enough for any company into which he might care to go. We were as yet only at an early stage in technical education; at present it was necessary to see that public money was spent only on such as had actually entered their trade, but this was not a rule without exceptions, and the knowledge of tools and processes must very soon become as common as the knowledge of arithmetic. In conclusion, Mr. Blashill asked why all those engaged in the building industry should not learn the different crafts that composed it in the same school and at the same bench, at least so far as they had to travel together. The workmen would leave comparatively early in the journey and the rest at stages which preference or necessity might dictate. But so far as they might journey together they would be learning the very same things. They would understand each other for the rest of their lives, and if one who might have started with lower ambitions should find his way into the higher grades of the industry, it was not the class to which the speaker belonged that would begrudge him the success he had earned.

## RECENT PATENTS.

James H. Crosbie, of Niagara Falls, Ont., has been granted a Canadian patent for a composition for crystallizing the exposed surface of bricks.

A patent has been granted to the Metallic Roofing Co., of Toronto, for a roofing tool.

Effective advertising is the kind that is always fresh and interesting. If there are several things to talk about, talk about one at a time, and talk about it so that it will make an impression. Don't say the same old things over and over in the same old way.

HISTORY OF THE ONTARIO ASSOCIATION  
OF ARCHITECTS.\*

In the summer of 1887 some of the architects of Toronto agreed to meet together once a month to dine and talk over matters of professional interest. At the fourth dinner this Club, which by then consisted of twenty-four members, assumed a Constitution and a name, calling itself the Architectural Guild of Toronto.

The Guild soon became so active that when in the following summer the Minister of Education for Ontario, the Hon. G. W. Ross, wished to establish a Chair of Architecture at the School of Practical Science in Toronto, he invited the advice and co-operation of the Guild. A Committee of the Guild met the Minister at his office on October 29th. In the conversation which then took place was suggested the advisability of the architects of the Province of Ontario becoming incorporated as a Society or Association with power to examine and license persons wishing to practice Architecture in the Province.

At the monthly dinner of the Guild held on November 8th, 1888, the idea was put into action by the appointment of a Committee to draw up a scheme for the formation of an Association which would be the first step to the attainment of such incorporation.

The Committee consisting of the following members of the Guild,—Messrs. E. Burke, S. G. Curry, Frank Darling, D. B. Dick, A. R. Dension, H. B. Gordon, Henry Langley, W. A. Langton, E. J. Lennox, Wm. G. Storm, Walter R. Strickland, and S. H. Townsend, reported finally on the 14th March, 1889.

On the 21st March, 1889, in response to an invitation from the Guild, sixty-two architects practising in the Province of Ontario met at the Queen's Hotel, Toronto, and agreed to the formation of an Association according to the plan proposed, passing at the same meeting a Constitution and By-laws and electing officers as recorded in the minutes of that meeting.

At the instance of this Association a bill was brought before the Ontario Legislature, in the session of 1890, by which bill it was proposed that the use of the title "Architect" should be restricted to members of the Association and that, after a certain date sufficiently distant to allow a reasonable time for all architects then practicing to enroll themselves as members, admission to the Association should be governed by examination. The intention was to allow all persons who were making use of the title Architect at the time the Act became law to continue their practice undisturbed, but to require all future aspirants to the title to so qualify themselves, under the necessity of passing examinations in order to acquire this distinction, that the standard of professional attainment in the Province would in the course of not many years be raised; and a finer quality of work, higher aims and a better style of practice prevail as the natural accompaniment of higher professional training.

It was a good scheme for a new country. In an older country the ancient buildings form standards of comparison beside which faults in modern design can be seen to be faults, so that every old building is a silent tutor of the public taste. But we have no such buildings. The public are led by the profession and the state of affairs gives rise to but little pressure to impel young architects to acquire such training in design as is necessary for the advancement of architecture in this country.

To legislators the measure appealed only as a pro-

vision for the safety of the public and they thought this would be sufficiently provided for by giving a distinguishing title, different from the usual title, to architects who had passed the qualifying examinations of the Association; thus setting members of the Association apart as a special class of qualified architects. The bill was accordingly amended in committee so as to make the distinguishing title of members of the Association not "Architect," as desired, but "Registered Architect," and in this form it was assented to on April 7th, 1890. The effect of this change was to kill the movement as conceived—as a universal movement towards the advancement of architecture—and to leave the Association with a struggle before it to attain even the partial effectiveness of a voluntary and partial Association. It proved to be impossible to elevate an arbitrary title over the accepted title; or in other words to degrade the title Architect by law without there being any other reason for its degradation.

If the charter members of the Association had been forced to pass a stiff examination, so that the legal title had from the start a real significance, the result might have been different; but as all practicing architects were of necessity admitted to the Association in order that no vested interests might be injured, the select character proposed for the Association had no real existence, nor could it have any real existence until the ten or fifteen years should pass which were necessary to bring about the retirement of the older charter members and an influx into the Association of young men who had won their membership by fitting themselves to pass the entrance examination of the Association. But this period was a longer time than the Association could be held together to no immediate purpose. The Act was for all practical purposes, in its first years, merely a law licensing practicing architects to call themselves Registered Architects. As such it had no influence with the public, and thus the only inducement that the general body of the profession had to support the title and the Association was gone; indeed the most ardent workers for the advancement of Architecture had an objection to the title and did not use it, though they continued to support the Association in its aims and in the work which it still tried to carry on in the way of regulating competitions, testing material, procuring good building and fire by-laws and other public and professional matters, as well as meetings of members for mutual improvement, and annual examinations for students.

After the first year students came forward in very small numbers for examination; so that there seemed to be no hope of establishing even the select body of qualified men that the Act, as passed, was fitted to provide for. But, even if it could be established, a small select body would be of little use as a provision for the public safety. A select body is unnecessary for the sort of public safety which was aimed at by legislators—that is to say to secure the appointment of a competent architect for the construction of great works. Great works are never put into the hands of any but architects of known experience, and the public will select an architect for such works from the elite of the profession, whether they are marked off by an Association or not. On the other hand, for the sort of public safety that can be provided for by act of Parliament, a select body is insufficient, for it is in the diffusion of architectural training that Parliament can best help public safety, by making ordinary building throughout the Province both safe and sanitary; and it can thus help also another matter of practical im-

\* Reprinted from Vol. I. of the Proceedings of the Association.

portance to the public, (which is not sufficiently regarded in considering this question,) the return of proper value for money invested in building.

For this reason the Association still hoped to get the more comprehensive measure from the Legislature and made three efforts to obtain it; nor was the opposition they met with such as to give them reason to suppose that there is any real objection to it or that, if it could have been brought to a third reading it would not have received the support of a majority of both sides of the House.

A bill to amend the Act, by making "Architect" instead of "Registered Architect" the exclusive title of members of the Association, was first introduced in 1893, but too late in the session, and was therefore withdrawn.

In 1896 it was again introduced and referred to a committee by whom it was reported to the House, but only on condition that it be then withdrawn. This attempt served as an introduction so that, in the following year, the Bill received support both outside and inside the Legislature; indeed its supporters in the Legislature, who were drawn from both sides of the House, agreed in assuring the Association that there was a palpable majority in favor of acceptance. But the same committee was appointed to deal with the Bill, and this time they dismissed it finally.

The arguments by which the Bill was opposed were in all cases the argument of interests which feared injury. There seemed to members of the Association, who represented the Association in the matter, no cause for the anxiety thus manifested by opponents, but they felt that their arguments in reply failed to carry conviction because they were regarded as *ex parte*. It seemed impossible for any one to grasp the idea that architects in urging a Bill to improve architecture could be thinking of anything but their own immediate advantage.

The objection raised by Mr. Norman Shaw and others in England—that no amount of examination can produce in a student a faculty of design—was not raised here; but it is impossible to conclude the subject without noticing this protest, raised in the remarkable volume edited by Mr. Norman Shaw, "Architecture a Profession or an Art;" remarkable as being so ably written and yet founded on so palpable a fallacy. It is not contended that examination, or to speak more exactly the education which is called forth by the necessity of examination, can implant in any one the faculty of design; but where there is nevertheless the purpose to design, what little faculty there is may be much developed by study under guidance, and scholarship may serve at least to prevent aberration of taste. It is precisely for this order of designers, and for those who would not otherwise know that there is such a thing as scholarship in design, that a compulsory Education Act would have been useful in this Province.

It is in levelling up all parts of the profession that it would do its chief work; saving us at least from ignorance that does not know that there is knowledge, and helping toward the ideal condition that not only great works but the ordinary types of building should be carried out in a sensible and agreeable manner. As for budding genius—it wants training like any other order of mind to enable it to work to the best advantage; and if there is a doctrinaire position in the whole controversy it is that of those persons who think that knowledge is the death of intuition.

With the failure of its last effort for comprehensive

registration the Association became a voluntary Association in purpose, as before it had been in fact, and is now trying to uphold the standard of education in students and of practice in its members by classes and examinations for students and by monthly meetings of members for reading and discussing papers. By an arrangement with the School of Practical Science, students of the Association are able to attend classes of the School for instruction in theoretical subjects; and a studio for instruction in design under the supervision of a committee of the Association is held in the Rooms of the Association at 94 King Street West, Toronto.

These rooms, the latest departure, will without doubt contribute greatly to the usefulness of the Association, giving it such facilities and comfort in work as make work more easily carried on in a continuous way.

The proceedings of the Association will henceforth be printed in a form suitable for preservation and reference; instead of, as hitherto, only as a report in the CANADIAN ARCHITECT AND BUILDER. It has been thought fit, by the Editing Committee to preface the first volume by an account of the origin of the Association and the purpose it at first set before itself of obtaining universal registration of Architects in the Province as the best means of furthering the advancement of architecture which it is now endeavoring to promote by the methods of the voluntary Association.

W. A. LANGTON.

#### ONTARIO ASSOCIATION OF ARCHITECTS.

The first volume of proceedings of the Ontario Association of Architects printed in pamphlet form has just been published. It comprises seventy-five pages. In addition to the proceedings of the annual convention, it contains a list of the presidents and other officers and committees of the Association; the names and addresses of the members in good standing, a list of the books in the Association library, a brief history of the Association by Mr. W. A. Langton, and views of the Association rooms. The proceedings were published for the association by the publishers of the CANADIAN ARCHITECT AND BUILDER, under the direction of the Editing Committee: Messrs. M. B. Aylsworth, (chairman), F. S. Baker, F.R.I.B.A., W. A. Langton, C. H. C. Wright, R. J. Edwards.

The Association suggested to the City Council of Toronto recently that a plan of the best possible arrangement of wharves, squares, promenades, glass plots, and trees on the water front be prepared, and that the class and location of buildings to be erected thereon be regulated by by-law. By these means the work of improving the city water front would be greatly simplified, and whatever works may be undertaken, year by year, would form part of a well-considered general scheme.

Mr. Frank Darting, architect, of Toronto, has been commissioned to prepare the design for the soldier's monument to be erected in Victoria Square, Portland street, to the members of Imperial regiments who died while on service in Canada.

Negotiations are in progress for the transfer to the Dominion Government of the Plains of Abraham at Quebec, for the sum of \$80,000. It is to be hoped that the result of these negotiations will be the preservation for all time of this historic battle ground.

The unveiling of a monument to Laura Secord will take place on June 22nd, and will be the occasion of a military display. The monument takes the form of a life size bust of Laura Secord, modelled by Miss Mildred Peel and cast in bronze. It will be mounted on a granite pedestal bearing a suitable inscription.



—THE—  
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A Monthly Journal of Modern Constructive Methods,

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**ADVERTISEMENTS.**

Prices for advertisements sent promptly on application. Orders for advertisements should reach the office of publication not later than the 12th, and changes of advertisements not later than the 5th day of the month.

**EDITOR'S ANNOUNCEMENTS.**

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

Subscribers who may change their address should give prompt notice of same. In doing so, give both old and new address. Notify the publishers of any irregularity in delivery.

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Subscribers who may change their addresses on the 1st of May are requested to advise us of the fact, and send us promptly their new addresses, thus insuring correct delivery of their papers.

PROPOSED NEW BUILDING REGULATIONS.

The Fire and Light Committee of the Toronto City Council have approved of the following recommendations of the Federated Council of Building Trades: That when buildings under construction reach one storey in height the joists shall be covered or floored temporarily with one-inch boards, as each storey is built. In case of steel structures, where girders are 12 feet centres, two-inch plank shall be used with sufficient support in the centre. Where joists are over 16 inches and up to 48-inch centres 1/2-inch plank shall be used, and where six-foot centres, 2-inch plank. In builders' scaffolds the distance between standards shall be eight feet instead of eight or ten, as formerly allowable. Where trestles are used the height is to be five feet and the material substantial. When scaffolding is formed by putting trestles one upon another, not more than two trestles shall be used, each five feet high. Above the height of ten feet standard-ledger or ropes shall be used. A guard-rail shall be built around the scaffold to prevent bricks falling, and another guard three feet above the scaffold to keep men from falling off.

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## STUDENTS' DEPARTMENT.

## METHODS OF THE ECOLE DES BEAUX ARTS.

The statement was made in the Montreal Correspondence in our March number that Mr. J. O. Marchand, of Montreal, was the only Canadian student of architecture at the Ecole des Beaux Arts in Paris. This is incorrect. In December last Mr. A. H. Chapman, formerly a student in the office of Messrs. Burke & Horwood, Toronto, went to Paris and entered upon a course of study in architecture at the school. Through the courtesy of Messrs. Burke & Horwood we are permitted to reproduce from one of Mr. Chapman's recent letters the following description of the methods of instruction employed at this celebrated institution :

"I am thoroughly in love with the system, and I do not think a better one could be followed, for the first part of it anyway. In getting into the school the architectural subject counts for most, then the drawing, mathematics, modelling, and lastly history. It is necessary, however, to get a pass mark in all the subjects.

The architectural consists in a design on a given subject made under the surveillance of the Ecole officials, and in the limited time of twelve hours. The drawings generally consist of plan, elevation, and section done in pencil and rendered with a wash, for which it is necessary to work out the shadows. The drawing of this design is usually clear, distinct, and, although there is not time to do very careful work in the detail, it is cleverly indicated, and all that is drawn is correct, and all that is wanted on such a small scale (usually about  $\frac{1}{4}$  in. to foot.) This practice of doing the sketches quickly teaches us to be decisive, and to

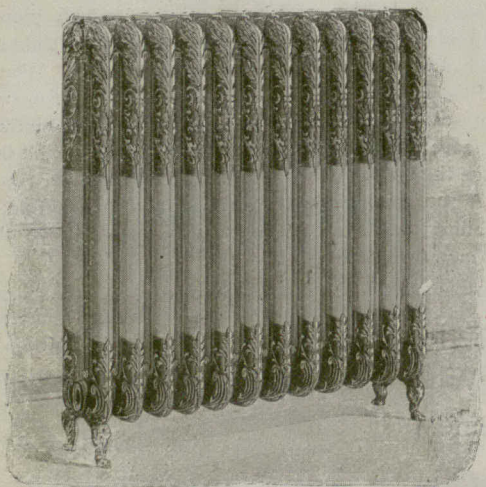
look to the essence of the design. The designs also are rather strictly classical, which is very good, as the study consequently resolves itself into composing, not creating, as a beginner cannot very well create until his senses are trained to the proportion of forms and to the meaning of detail.

For the drawing examination a charcoal drawing from a cast is required, for which eight hours is allowed. This is usually well executed, correct in proportion, line and values in shading. In this also we learn to pick out the essence and get that right. Both these subjects train the senses, and discipline the mind, without in the least cramping the imagination, except perhaps the danger of a student seeing so many strong men believing in a certain style, being afraid to be original, but even that danger is practically done away with, as the work the seniors do in many cases is as original and free as possible. When the students enter the school in the second-class work they still keep on classical lines, but in the first-class concours they are unlimited. Occasionally at the school they have what we call an "esquisse esquisse" which consists of a design worked out at the school in limited time, generally twelve hours, and I do not know if I told you that in all concours the "partie", which means the idea of the design, has to be worked out at school in a limited time and left there; so that when the judgment is given, the judges have a sketch showing the student's power of conceiving an idea, and a drawing showing his ability in carrying it out.

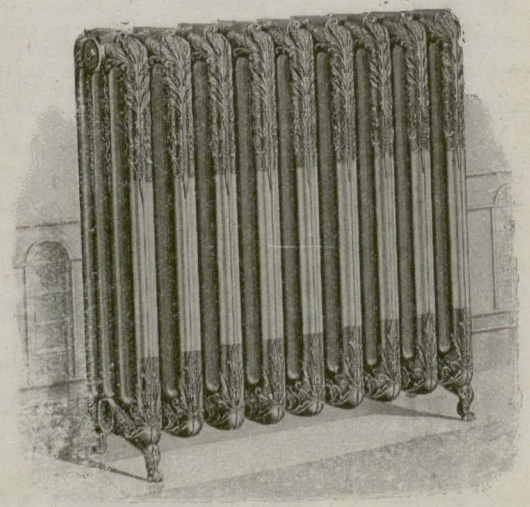
The examination in mathematics consists in the usual higher mathematics, and that of modelling and history are unimportant and very easy.

The Toronto Architectural Eighteen Club have fitted up their rooms in connection with the Central Ontario School of Art for the use of students. Classes are meeting regularly and work in design is being proceeded with on the lines prescribed by the Educational Committee.

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CAUSES OF VARNISHING FAILURES.

Newly manufactured varnish often produces a grainy or spotted appearance. The only remedy is to refrain from using such varnish. It must also be noted that the skin which forms on varnish when it is stored in imperfectly closed vessels may also produce the above-mentioned effect, as may pumice dust on the work, or dust collected from the varnish by the air.

Sweating, which principally happens with good fat varnishes, can be prevented by allowing the smoothed surface to dry for a few hours, so that it may sweat before the varnish is applied, and then give it another touch up with pumice. The varnish is apt to creep if there are oily patches on the surface or if it has been touched with wet hands; but the same effect may be produced by want of skill on the part of the varnisher, as when folds of varnish appear at the edges.

A varnish may often appear like pressed leather, or as if enamelled, if it has been applied in too cold an atmosphere, i.e., below about 70° Fahr. A stripy appearance may also be caused by improper mixing with turpentine, or by too much working with the brush.

Pin holes and pits are produced chiefly by working in too damp an atmosphere, so that the remedy is easily seen. The sinking in of varnish is generally due to faulty preparation of the surface. The color must have a smooth surface to enable the varnish to combine strongly with it. Another cause is found when wood which is not thoroughly dry is varnished. It is a good plan to pour out the varnish an hour before it has to be

used, so that gases in it may escape and not make the coats dull.

Varnish flakes off when applied to unsuitable ground, or when the latter is varnished damp. The same thing may happen if the pigment had been applied too thick, or if it is not quite dry when the varnish is laid over it. Too much dilution with oil of turpentine may also cause varnish to crack off.

The appearance of cloudiness or smokiness in a coat of varnish is the result of atmospheric influences during drying. The room must be freely ventilated to make the drying as rapid as possible. A sojourn in damp rooms is apt to give varnish a blue or green color.

Spots left where mud has adhered and been washed off, naturally seen much on carriages, gradually disappear with repeated washing. Varnish blisters either from heat, or on account of the presence of oil under the varnish. The effect of leather and elbow grease in heightening the lustre of a varnish is too well known to require more than a passing allusion.

After hearing the evidence in the action for alleged attempted blackmail brought by Mr. Joseph Wright against Mr. Joseph Sherlock, of Toronto, Judge McDougall decided that from the legal standpoint no threats had been made, and accordingly withdrew the case from the jury. The action arose out of some remarks made by Mr. Sherlock relating to the character of the plumbing work done by the plaintiff in the new municipal buildings, Toronto, for which work the defendant was an unsuccessful tenderer.

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The Royal Institute of British Architects, desiring to give facilities for those in the Colonies, to qualify by Examination for Associateship in the R. I. B. A., have decided to hold an Examination from June 21st to 27th, 1901, in Montreal. Applications, Fees, and Probationary work must reach London not later than May 5th, 1901. Intending candidates, who must be over 25 years of age, can obtain application forms and copies of the previous examinations on application to

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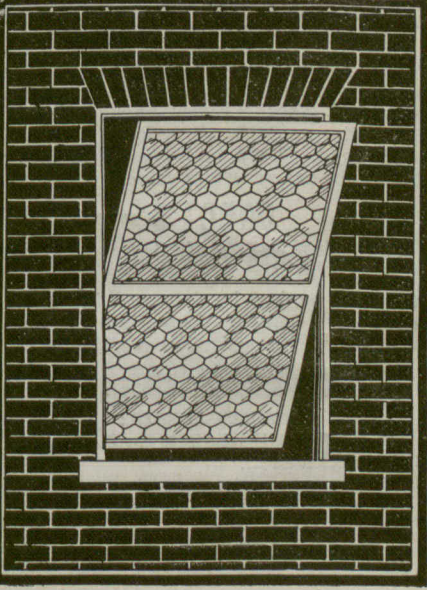
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THE USE OF THE GASOLINE TORCH AND FIRE INSURANCE.

So many serious fires have been caused by the careless handling of the gasoline torch within the past few years, says the Painters' Magazine that the underwriters have become alarmed, and have added a new clause to the policies of fire insurance, forbidding the use of this torch for burning off paint, even though it may be a universal trade custom. Even under the old form of policies it is a question whether the insurance companies can be made to pay for any loss caused by one of these torches, unless special permission to use them is endorsed on the policy. It is therefore wise for any painter who is called upon to do a job of burning off to state the matter very clearly to his customer, and to throw the responsibility entirely upon the property owner, giving him an opportunity to consult his insurance agent before the use of the torch is begun. Unless this action is taken, the painter may find himself in the very unpleasant predicament of being responsible for damages either to the insurance company or to the property owners, for even the plea of trade custom

could not be made to hold in any court against a claim for damages resulting from fire caused by a paint burner in the hands of a careless employee. It is better even to lose a job than to be mulcted in damages to such an amount as might sweep away the savings of a lifetime. While the old-fashioned charcoal burner is not so effective as the modern gasoline torch, it is not nearly so dangerous, and when the matter is explained to the property owner, he would doubtless prefer to pay the extra cost of burning off by means of the charcoal burner rather than run the risk of the more rapid but far more dangerous method. As we understand it, the insurance companies object only to the use of gasoline, or naphtha, since the tongue of flame of the gasoline burner is so apt to find an entrance into minute cracks and to set fire to the tarred paper that is used between the inner and outer skin of the modern frame building, and thereby cause a fire that will have most disastrous consequences. It would be well, however, for the property owner to have the opinion of the insurance agent who has written the policies in each particular case, before a painter undertakes to execute any contract for burning off paint.

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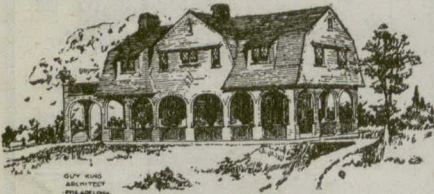
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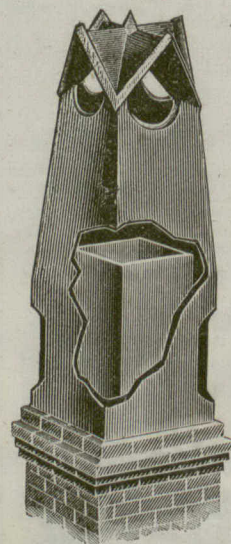
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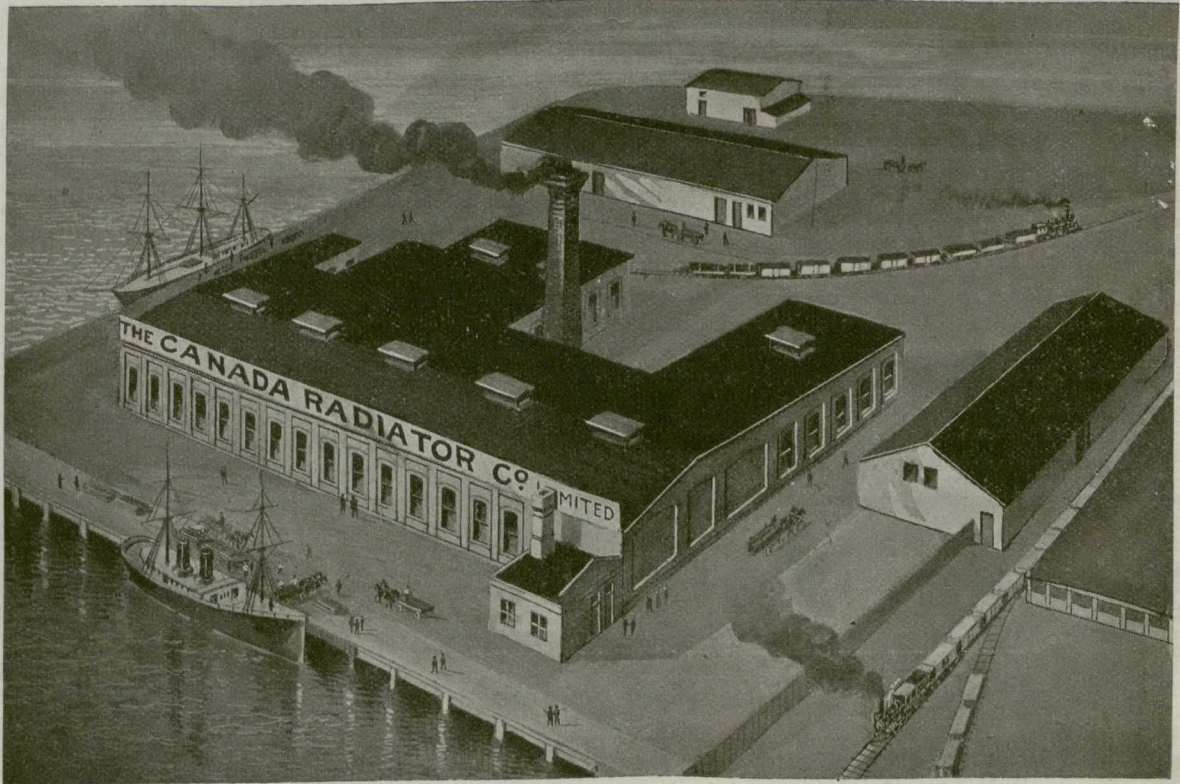


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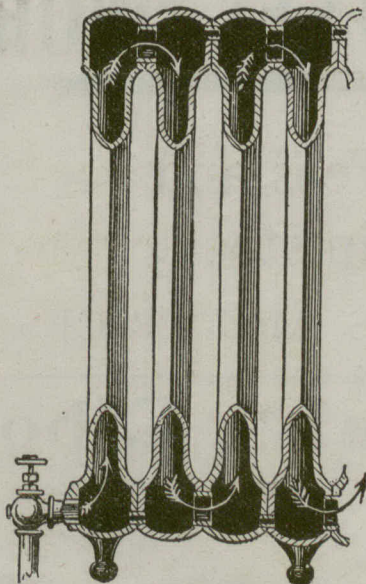
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TWENTY-SECOND ANNUAL EXHIBITION OF THE  
ROYAL CANADIAN ACADEMY OF ARTS.

This exhibition, which is now being held in the Gallery of the Ontario Society of Artists, King St. West, Toronto, is one of the best representative exhibitions held by Canadian painters that we have had the pleasure of seeing. It embraces the work of nearly all the members, and from this collection we believe will be chosen the works to represent Canadian art at the Pan-American Exhibition. Many of the pictures are old friends, especially those by local painters. The eastern artists, however, add to the interest and enjoyment of the Exhibition. We have two excellent portraits by R. Harris, the president of the Academy, and also one particularly charming thing, "The Banjo Boy." The "Landscape" by Mr. Brymner is forcible and masterly. We have two pictures from the brush of Horatio Walker, now residing in New York, one of which is a perfect little gem and a rare treat. Another large picture, "The Bathers" by Blair Bruce, residing in Paris, France, is breezy, clever and decorative. Miss Florence Carlyle contributes an interior called "Golden Rod," from the standpoint of light and color an admirable little bit. Homer Watson is ably represented, rich in color, gem-like in quality, but evidently influenced by the old Constable school. A little canvass by St. Charles entitled "Red Man" is a daring and exceedingly clever little piece of technique.

John Hammond, of Montreal, contributes one of his misty dawns, always poetic and sweet, and Maurice Cullen one of his sunny pastorals. In water colors we have two excellent things by Wm. Brymner, of Montreal, and one by a deceased member, Charles Moss, whose removal is most deeply mourned, as he was really one of the most promising young academicians.

Space does not permit of dealing with this matter but summarily. We therefore take the liberty of drawing attention to merely a few of the contributors from the eastern provinces who are not

so frequently seen in Toronto. Our local members have been commented on in the past, and are old and highly esteemed friends.

We are glad to announce that Mr. Dyonnet has been elected a member of the Royal Canadian Academy.

NEW CONTRACTING FIRM.

Mr. T. W. Horn, President of the Luxfer Prism Company, has recently formed a partnership with Mr. William A. Illsley, contractor, of Chicago. Mr. Illsley has had an extensive experience in the construction of large buildings in Chicago. The new firm have been awarded the contract for the large hotel to be erected on King street east, Toronto. The contract price is understood to be about \$800,000.

NOTES.

A Rochester despatch states that all the stone quarries in western New York producing the famous Medina block paving stones are to be formed into a trust, with a capital of \$1,500,000.

A charter has been granted to the Dominion Portland Cement Co., of Warton, Ont., capital \$250,000, to manufacture Portland cement, bricks, tiles, etc. The provisional directors include David Porter, D. M. Jermyn, both of Warton, and John Rowland, Walkerton, Ont.

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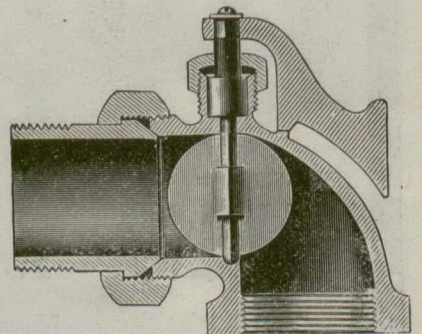
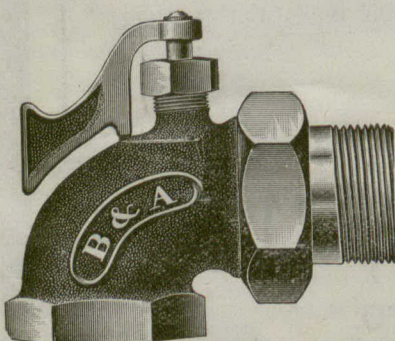
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After several weeks' consideration by committees representing the Toronto Master Plumbers' Association and the Toronto Journeymen Plumbers' Association, the following schedule of wages has been agreed upon:—

Clause 1—That the hours of labor shall be from 8 a. m. to 5 p. m., with one hour for dinner; Saturday from 8 a. m. to 12 noon.

Clause 2 That the minimum rate of wages shall be 27½c. per hour; the men now receiving 27½c. to get 30c.; those getting 30c. to get 32½c. per hour, which shall be the maximum rate.

Clause 3 All overtime to be paid at the following rate: Saturday afternoon, time and a half; from 5 p. m. to 8 a. m., time

and a half; statute holidays and Sundays, double time.

Clause 4—Wages to be paid before 5:15 p. m. on Fridays or 12:15 noon on Saturdays on pay week, with a recommendation that every second Friday be pay day.

Clause 5—Time spent to and from out-of-town work during working hours only to be paid at usual rate of wages, and if travelling all night a sleeper berth to be provided by employer.

Clause 6—All expenses for board and fares on out-of-town work to be paid by employer.

Clause 7—In case of any grievance arising, said grievance shall be referred to a committee of five from each association; committees to meet within three days' notice thereof, and to have full power to settle disputes.

Clause 8 That no plumber, steam or gas fitter shall perform any labor pertaining to his trade or put in any material

supplied by or for any other person than his employer, who shall be a bona-fide master plumber, and a member of the Master Plumbers', Steam and Gas Fitters' Association; but no enforcement of this clause to take place before being sanctioned by a joint committee of the grievance committee of both associations. Three months will be given from date of signing this agreement before it shall be enforced.

Clause 9—The members of the Master Plumbers', Steam and Gas Fitters' Asso-

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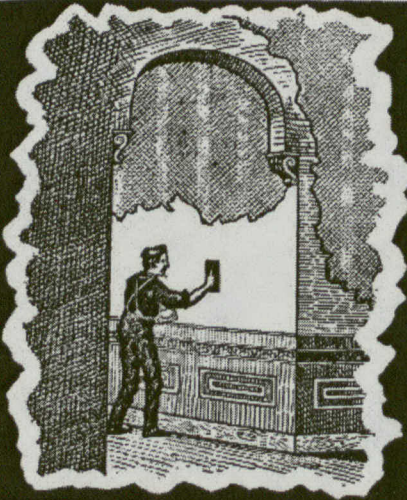
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ciation shall employ none but members of the Journeymen Plumbers', Steam and Gas Fitters' Union.

Clause 10—That no boy at either trade be allowed a kit of tools until he has served three years at the trade.

Clause 11—That the time for enforcement of this agreement takes effect from April 1, 1901, and to stay in force until January 1, 1904. In case either party to this agreement wishes to change, add to or amend the above, they shall be given at least three months' notice in writing prior to the termination of this agreement.

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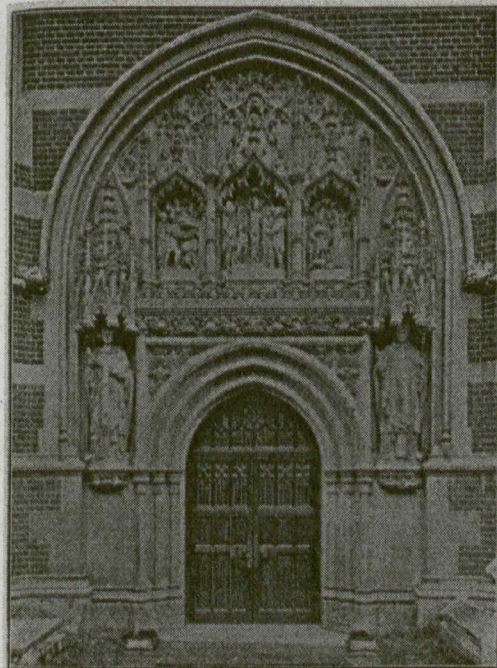
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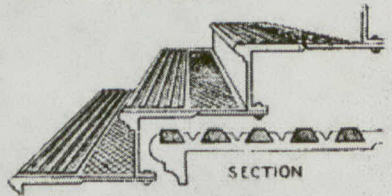
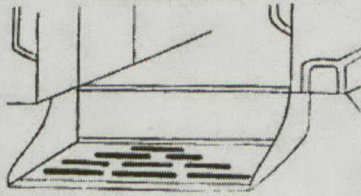
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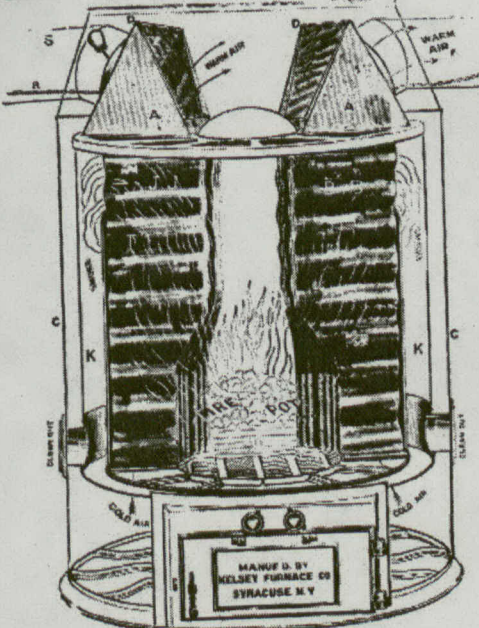
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