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TO ADVERTISERS.

For the benefit of Advertisers, a copy of this journal is mailed each week to persons mentioned in the CONTRACT RECORD reports as intending to build, with a request to consult our advertisement pages and write advertisers for material, machinery, etc.

Automatic Fire Protectors.

IF it were not for the costly consequences, one might be inclined to laugh at the heat of the sun, reflected through a glass skylight on to automatic fire protectors, causing the protectors to blow out, and the consequent flooding of the building. But this recently happened, and caused "damage by water" to the extent of thousands of dollars. In future these automatic systems should be themselves protected by a liberal supply of ice piled up round them in hot weather!

American Bricks for South Africa.

A SHIPMENT of 200,000 bricks was recently made to South Africa by the Union Brick Works, of Tacoma, W. T. The purchasers were the Lingham Timber and Trading Co., of Delogoa Bay. The price obtained is said to exceed by three or four times the cost of production, hence a handsome profit will be realized. As this is believed to be the beginning of an extensive and profitable foreign trade, the attention of Canadian brick manufacturers, especially those of British Columbia, is directed to the subject. Shipments of Canadian dry pressed bricks have been made to South Africa, but we have not heard that any ordinary stock brick have as yet found their way to that country.

The Proposed Central Park in Toronto.

THE suggestion of a central park for the city of Toronto appears to be received very favorably. The next thing, of course, is the provision of funds—provided the owners of property decided for the purpose can be induced to part with their lots for reasonable sums. It is certainly a very good idea for the improvement of the city, and will add greatly to the appearance and dignity of the new Court House to have an ornamental piece of ground near it. The clearing away of so many of the old houses, sheds, shops, yards and lanes will be a matter of congratulation if it can be brought about, and the improvement thus effected should enhance the value of adjacent property. There can be no doubt that Toronto is a beautiful city. The residential parts compare favorably with the much-praised cities of other countries, although much that is an eyesore, much that is bad from a sanitary point of view, and much that is dangerous and inviting to the fire fiend still remain, and the sooner these can be cleared away the better. A central park would pretty near complete Toronto, which is so favored by its natural surroundings. The woods and ravines of Rosedale are no mean adjuncts to the city parks, and approach has been made easy to a part at

least of the chain of ravines by the new Ravine Drive, which connects with the great stretch of the at present incomplete Riverdale Park, which will be nearly a mile long by a quarter of a mile wide, and which is probably not well known to the majority of Torontonians, who, though they have heard of it, have probably not visited it. This park has been already several years in progress, and will be several more before complete, but it is a novel and most inexpensive method that is being taken to attain the object. The labor costs the city nothing, as it is entirely carried out by the prisoners of the jail; but as this enforced labor is objectionable to the tramps, there are but an average of twenty-five or so at work every day, whereas when the work was first started there used to be double that number available; they now steer clear of Toronto.

The Toronto Hotel Project.

FROM a reliable source we learn that a Chicago architect and capitalist have been in Toronto during the last week in connection with the project for the erection in that city of a first-class modern hotel. These gentlemen have made careful enquiries into the cost of building materials, and other matters affecting the carrying out of the enterprise. We have not learned what steps are being taken to finance the scheme, but hope to see the undertaking take tangible form in the near future. The Old Upper Canada College Grounds on King street west, seem to be regarded as the most favorable location for the proposed structure. Toronto has reached the point where improved hotel accommodation has become a necessity. There seems, therefore, no reason why the undertaking should not prove successful. So far as the cost of erecting the building is concerned, there is never likely to come a more favorable time than the present, when prices of building materials and labor are at a minimum.

Alien Labor Law.

UNNEIGHBORLY conduct, whether practiced by an individual or a nation is likely to prove unprofitable by reacting upon those whose selfishness prompts them to it. For several years Canadians have been prohibited by the alien labor law enacted by the government of the United States, from finding employment in that country unless they and their families become residents of the Republic. This law brought great hardship to workmen in the border towns of Canada, who for years had been accustomed to cross the line daily. This law is looked upon as being unworthy of a great nation, and it was expected that after the Presidential election was over, it would be repealed, inasmuch as it was known to have been enacted with an eye to securing the votes of the trades organizations. It having become apparent, however, that the obnoxious measure is to be allowed to remain in force, pressure was brought to bear on the Dominion Parliament at its last session to place a similar law upon the Statute books of Canada. Accordingly we have now a Canadian Alien Labor Law, under which foreigners are to be prohibited from obtaining employment in this country. The effect of this law is likely to be immediately felt in the United States in connection with the construction of the Crow's Nest Pass Railway, the Victoria Bridge, and other large undertakings, contracts for some of which have gone to American firms. The probability is that for some years to come undertakings of this character will

be more numerous in Canada than in the United States, so that the balance of advantage will be on the side of Canadian workmen. From an abstract point of view we have no sympathy with enactments of this character but when we find ourselves alongside so unfriendly a neighbor, nothing remains but to protect our interests. In this connection, it is learned that under the new Canadian tariff certain kinds of structural materials, such as bridge material, is admitted under a lower rate of duty than formerly, with the result that American companies have been enabled to secure a number of important contracts in Canada. This is a matter which the Dominion Government should carefully examine into. The Canadian manufacturer and contractor is certainly as much entitled to consideration at the hands of the Government as the Canadian workman.

The Tender System.

THE system of inviting tenders for works of importance is one that no reasonable contractor will find fault with. When carried to extremes, however, it becomes a nuisance. The hard times of which we have in recent years heard so much, have led the large, as well as the small, contractors to look closely after contracts whether little or big. This evident anxiety to secure business has induced persons to invite competitive bids even for contracts of trivial amount. A case was recently brought to our notice which will serve to illustrate the absurd extent to which the system of inviting tenders has been carried and the nuisance it has become. A person living in a town in Western Ontario wanted to purchase a furnace which should cost about \$110. He addressed a postal card to a dozen manufacturers asking not only for quotations, but for a personal visit. The expense of such a visit would be about \$15. Presuming that all the manufacturers complied with the request as some are known to have done, they would expend in travelling expenses the sum of \$165, or \$55 more than the entire cost of the furnace. And to what purpose! In order that the purchaser might save a ten dollar bill.

Municipal Control of Building Construction.

IN continuation of our remarks last month in connection with recent fires, a very serious fault in municipal management and control of buildings is for the fiftieth time brought prominently before us. We have a department in which plans of buildings are supposed to be examined and permits for carrying out said buildings are supposed to be granted after plans have been approved and shown to be in accordance with existing building by-laws. That this department is faulty in extreme is shown by the simple fact that it is possible to find serious fault with the construction of buildings after they have been erected. That doubts should exist in competent minds as to the stability of such buildings when completed proves that the plans have either been passed by incompetent minds or examined with so little judgment that it would have been as well if they had not been examined at all. There may be differences of opinion about limiting floor area, about central light wells, elevator shafts and so forth—opinions which must to a certain extent be regulated by the necessities of the purposes for which the building is intended—but there can be no difference of opinion as to sufficient protection for steel and iron stanchions and girders, which may be supports to important walls and piers. Certainly the city should be

liable for permitting such iron supports of main walls to stand absolutely unprotected, an easy prey to fire, and even if no fire occur, constituting a continual menace to public safety through the action of the weather—the effects of heat and cold—and of rust, which it is now well known eats away the metal under paint.

Another matter which is absolutely overlooked by our authorities in the office for the examination of plans is, sufficiency of exit in the event of fire for the large crowds which frequent the departmental stores. Even where the site has streets or other open spaces adjacent to the outside walls, advantage is not taken of the fact that it would be a simple matter to pierce these walls with doorways and to have outside iron fire stairways from all the upper flats. It has been shown by actual tests exactly how long it takes to empty certain buildings of the crowds frequenting them. It is known exactly what proportion of door space will allow of the escape of a crowd in the event of fire. Surely it is time to insist on the provision of better exits. Had the fire at John Eaton's taken place in the day-time, it is safe to say that in the short time from the outbreak of fire to the collapse of the main walls but few could have escaped, and there would have been a disaster almost too horrible to contemplate.

BY THE WAY.

ALL the enterprise is not confined to this side of the Atlantic. A Bohemian manufacturer is reported to be making roofing tiles by the dry press process. They are said to present an excellent appearance, but are open to the serious objection that they absorb too much water. It is not unlikely that means will be found to overcome this fault.

x x x

THE CONTRACT RECORD formed a feature of an amusing incident which recently occurred on an east bound train. It was during the late heated term that a couple of representatives of Toronto supply houses found themselves on board the same train and bound for the same destination—Ottawa. With the view of enhancing their comfort they divested themselves of their coats, which, by the way, were much alike in color. After a time the owner of one of the coats was about to resume his garment, when his companion stopped him by saying, "Hold on there—you've got my coat." "No, I haven't," was the reply. "Oh, but you have," rejoined the other, "and in proof of my statement there's the CONTRACT RECORD sticking out of the inside pocket." "That's no proof," said the man with the coat, "for I too have a copy of the CONTRACT RECORD in my inside pocket." And so it proved to be.

x x x

I HAPPENED to be in a gentleman's business office in Toronto the other day, when the representative of an American firm called to solicit an order for goods. "No," said the gentleman, "I don't want any Yankee goods. I've made up my mind not to buy a dollar's worth of American stuff if I can possibly get what will answer the purpose in Canada or elsewhere." On asking the reason of this unexpected rebuff, the American was told that it was due to the treatment which was being accorded to Canada by the government of the United States under the Dingley Bill. I fully approve of this gentleman's policy. Individually the Americans are good fellows, but as a nation they are given to the perpetration of acts of despicable meanness, especially

towards this country. Notwithstanding the tariff wall which has existed between Canada and the United States for nearly twenty years past, the Americans have found a market in the Dominion for many millions of dollars' worth of goods annually. If the men who are sent over here to sell these goods were for a time to be given the cold shoulder after the fashion described above, protests would soon find their way to Washington from the manufacturers whom these men represent, and as a result no doubt a more neighborly policy would be adopted toward this country. Let those who have been in the habit of buying from representatives of American houses, try this method of securing international fair play.

ILLUSTRATIONS.

RESIDENCE FOR MR. JAMES THOMSON, BAY AND ROBINSON STREETS, HAMILTON, ONT.—JAMES BALFOUR, ARCHITECT.

GROUP OF DELEGATES TO THE SECOND ANNUAL CONVENTION OF THE NATIONAL PLUMBERS' ASSOCIATION OF CANADA.

THE LAKESIDE HOME FOR LITTLE CHILDREN, TORONTO ISLAND.—CURRY, BAKER & CO., ARCHITECTS.

The Lakeside Home for Little Children is the convalescent branch of the Hospital for Sick Children, Toronto. It is situated at the Point Park, Toronto Island, and was erected and furnished at a cost of \$40,000 by Mr. J. Ross Robertson, of the Toronto Evening Telegram. The plans were drawn by Mr. S. G. Curry, of the firm of Curry, Baker & Co. It was presented to the trustees of the hospital on the condition that the sick children of Freemasons in the jurisdiction of the Grand Lodge of Canada should receive surgical and medical treatment free in both institutions.

The Lakeside Home is about 165 feet long, three stories high, and has accommodation for 125 children, 50 nurses and other help. It is the largest and best equipped sanitarium for children in the world. The building is provided with every modern equipment—bathrooms, lavatories, gymnasium, reception rooms, parlors, committee rooms, etc. It is lighted throughout with acetylene gas, and is the first building in Toronto to be lighted by that process. Wide verandahs surround the institution, and magnificent views of the lake are obtainable from every point.

FULFORD MAUSOLEUM, LONDON, ONT.—MOORE & HENRY, ARCHITECTS.

Mr. Robert Fulford has just completed, at Woodland Cemetery, London, Ont., a very handsome mausoleum, to the memory of his wife, the late Annie Pixley Fulford.

The building is in the centre of a large plot of ground on a slight eminence, is built of Stanstead, Que., granite throughout, and has interior walls, ceilings, catacombs, etc., of sandstone. The catacombs are situated in the basement, and are covered over by a granite floor ornamented with encaustic tiling.

The entrance is flanked by two colossal lions. The entrance gates are of solid bronze, handsomely wrought, with carved frames, and surmounted by a bronze medallion containing a group representing Charity, in bas-relief. The main arch is supported upon four columns of polished Swedish granite with carved capitals.

The front is supported at either side by massive pannelled pilasters, carrying life size granite statues representing Music and Drama, while in the centre, surmounting all, is a large figure representing Victory.

The interior is lighted by three memorial windows from Innsbruck, Austria, is wainscotted in marble, and has a handsome coffered ceiling. Niches in the rear, enclosed by bronze grilles, afford room for two incinerary urns.

Messrs. Moore & Henry, architects, of London, Ont., designed the mausoleum and superintended its construction. The McIntosh Granite & Marble Co., of Toronto, were the contractors, and Messrs. Allward and Sturgeon, of Toronto, made a success of the sculpture. The Tyrolese Art Glass Co. executed the memorial windows, while the ornamental bronze work is from the Toronto Ornamental Iron Works.

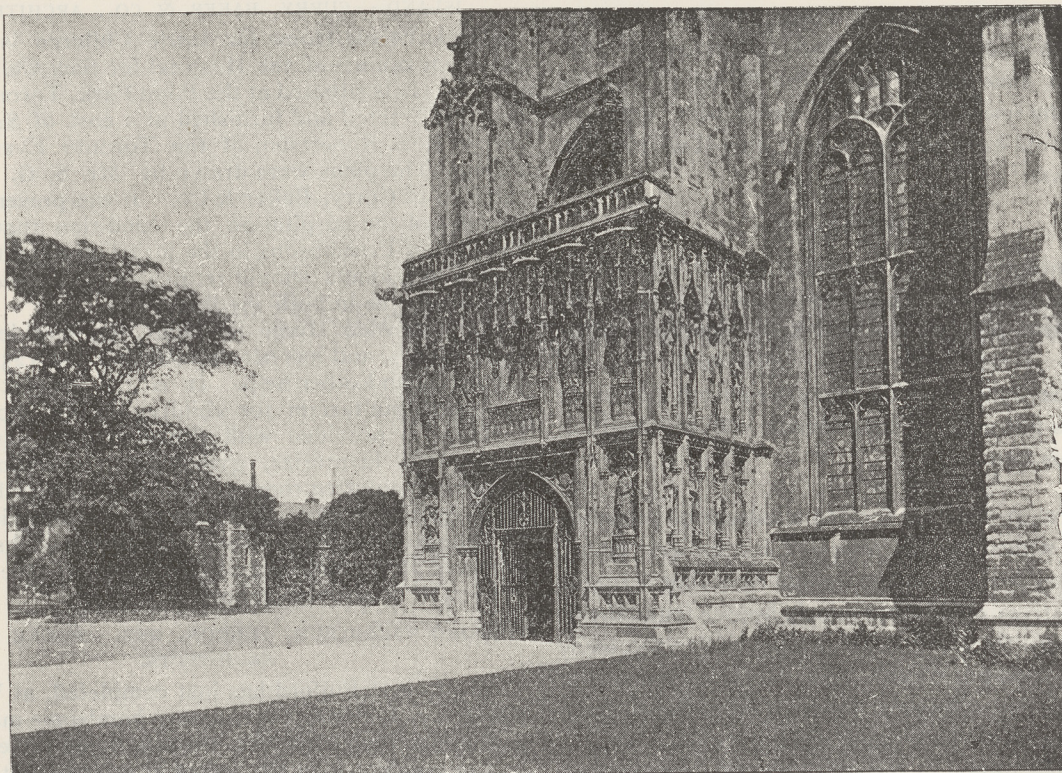
THE LITTLE CHURCH OF ST. MARTIN.*

BY FRED. T. HODGSON.



We have abundant evidence that during the Roman occupation of England, many primitive Christians practised their faith in that country, and there is good reason to suppose that in many parts of the country, particularly where the Roman soldiers were stationed, the followers of the cross were numerous enough to require a place to worship in. The policy of Rome, within the sphere of her influence, was one of extreme tolerance in matters of religion. This policy of tolerance enabled her to mass together in her legions all manner of creeds and nationalities, and her rule was felt less oppressive when she did not interfere with the worship of the people she

to have been a place for Christian worship, and tradition has for hundreds of years given these ruins the name of Lucius' Chapel. In the year 292 A.D., during Diocletian's reign, an old chronicler tells us that "the pious Alban was martyred and many churches were destroyed and holy men slaughtered." St. Alban was the first British martyr. He gave name to a city, and to hundreds of churches. With his death we have many monkish legends; it is said that the river Thames dried up at his approach to the place of martyrdom, and according to Gildas, although Bede's authorities are content to make the miracle occur at the stream between the city and hill of execution—a spring bursts forth from the spot—the eyes of the executioner fall out, and many other wonderful things occur. St. Athanasius, in the middle of the fourth century, speaks of British bishops being present at his trial at the Council of Sardis. Three British bishops are recorded to have been at the Council of Arles, A.D. 314. Apart from



CANTERBURY CATHEDRAL, ENGLAND—"THE SOUTH PORCH."

conquered. The little church of St. Martin stands today in evidence of this toleration, as it has been proved beyond a doubt, that the building was first erected for a place of Christian worship and that its origin dates back to the pre-Saxon period. Without entering deeply into the subject of the presence of Christians in England during the Roman occupation, I may be allowed to make a few quotations, in order to strengthen the claims I am putting forward, that Christian churches were built as places of worship whilst the invaders remained in the country. So early a date as the year 150 A.D., is assigned by authorities whom Bede follows, for King Lucius' request to Pope Eleutherus to "make him a Christian," and this is taken as a commencement of Christianity in England. The dates given do not accord;—and the existence of King Lucius at all has yet to be proved. But, on the cliffs of Dover, and within the lines of the old Roman fortifications, are the remains of a very ancient building whose outlines or plan prove it

the many references made by Roman and native writers to the Christians in England, we also have hundreds of archaeological proofs that cannot be well contradicted. There are in the British and other museums in the country many evidences of Christianity in the shape of symbols on Roman jewelry, such as crosses, the trefoil, and many other indications of early Christian beliefs. Without going into all the reasons proving this church to be of Roman origin, I may state that when the Saxon King of Kent, Ethelbert, took his French bride, the gentle Bertha, to his Saxon home, about the year 590, she found many of her co-religionists there. It is on record that before leaving her French home, she had stipulated in the marriage agreement that she be permitted to practice her own faith, and that she take with her to her new home her Bishop and Confessor. Ethelbert, who, though a pagan, was a reasonable man, granted all she desired and placed at her disposal a little church, which at one time had been used for pagan worship, but now served as a Christian church. Quoting a well known passage in the Venerable Bede's Ec-

*A paper read before the Collingwood Fortnightly Club.

†The paper was illustrated by lime-light views of the Church of St. Martin, and of the great cathedral.

clesiastical History,—“There was on the east side of the city a church dedicated to the honor of St. Martin, built whilst the Romans were still in the Island, wherein the queen, who, as has been said before, was a Christian, used to pray.” As Bede is one of the most reliable of early Christian writers, we may take it for granted that the church was ancient, when Bertha and her Bishop Luidhard offered up prayer under its roof. As it has ever since, even unto this day, been used as a church, it holds the proud position of having Christian service held within its walls for over thirteen hundred years, a distinction no other Christian church in existence can claim, for none exist in Rome, and only two in Constantinople,—St. Sophia and St. Barrabas—but which have been used for over four hundred years as mosques of Mahomet.

While it is not known that Bertha or her bishop held any communication with the See of Rome, it is not unreasonable to suppose that such was then the case, for it is quite evident she had prepared the King for the events which happened during the next few years.

Early in the spring of 597, Augustine with 40 followers, sent by Gregory the Great, Bishop of Rome, landed near Canterbury and held audience with the king, who permitted the strangers to go inland to the town, and promised to consider the new devotions they taught. Through the influence of Bertha, the king accepted the new faith and on Whitsunday, the 2nd of June, 597, Ethelbert was baptized, the ceremony taking place in the church of St. Martin, and the holy water used for the purpose being taken out of the font now in the Church of St. Martin. The antiquity of this font is verified by the character of its ornamentation, as well as by tradition and historical reference. Its age dates back some 250 years before Bertha's time, making it over 1,500 years old. This little Church of St. Martin has not only the proud distinction of being the oldest Christian building in Europe, but it is the only church in existence in which a king was baptized during the sixth century. It is also the mother of all those noble ecclesiastical buildings that dot the British Islands, including the great Cathedral of Canterbury, which will be the main topic of this paper.

Land was granted Augustine and his followers in the city of Canterbury, embracing the spot where the cathedral now stands, and where stood at that time a Pagan temple that had once been a place of Christian worship, for Bede tells us that St. Augustine (A.D. 602), “being supported by the king, recovered at Canterbury a church which had been built by the ancient Roman Christians, and consecrated it in the name of our Holy Saviour, God and Lord Jesus Christ, and there established a residence for himself and his successors,” and we are further informed that “Augustine added to and rebuilt the place and made of it the headquarters of Christianity in England,” and a portion of the original building still exists in the crypt, showing plainly Roman construction and Roman materials; there is also existing in the cathedral the chair, or throne, of marble, said to have been taken from Rome purposely for Augustine, and called “St. Augustine's Chair,” and though it may not have been placed in the cathedral during the first archbishop's time, it no doubt represents the ancient episcopal throne on which the bishop of that time sat with all his clergy around him. When the new church was completed, Augustine rededicated it and called it “Christ Church,” a name that

it still bears. Once settled, more clergy were sent from Rome, and it was not long before all the people of the kingdom of Kent were professing Christians. With regard to this it may not be out of place to make a short quotation from “Green's History of the English People.”—“Canterbury, the earliest royal city of German England, became a centre of Latin influence. The Roman tongue became again one of the tongues of Britain, the language of its worship, its correspondence, its literature. But more than the tongue of Rome returned with Augustine. Practically his landing renewed that union with the western world which the landing of Hengest had destroyed. The new England was admitted into the older commonwealth of nations. The civilization, art, letters which had fled before the sword of the English conquerors returned with the Christian faith.”

Augustine died in 604, and was succeeded by Lawrence, who does not appear as a very striking figure. It is not my intention to give a list of those who followed Augustine, further than to mention those who acquired distinction, or who added, by their skill, to the magnificent pile I will illustrate. I may say, however, that the first six archbishops were of Roman birth, but the seventh, Trithona, was an Anglo-Saxon, who was noted for his learning and piety; and from this time until the advent of the Normans the church was ruled altogether by native archbishops.

Odo was made archbishop in 938, and found the church very much in want of repairs, which he undertook and completed. The great Dunstan, the father of many English industries, followed. This Dunstan was rather a noted character—he not only ruled in the church, but he ruled in the State also. He taught his people to work in gold and silver, wood and clay, and was himself an artistic blacksmith, and many quaint and weird legends are told of him. He is said to have been on speaking terms with the Devil, but to have always beaten him when discussing theological questions. One day, in the heat of a controversy, he lost his temper, and jagged his Satantic Majesty in the ribs with a hot iron; that gentleman flew away in disgust, and has never since visited Canterbury. In 1411 the Danes made an invasion of the city, burned the cathedral, and on the 19th of April of that year, murdered Archbishop Alphage. King Canute, feeling remorse for both acts, restored the building, granted money for its maintenance, and gave his golden crown, which the monks retained until the Dissolution. Within a few months of the conquest by the Normans, a fire again ravaged the city, which then surpassed London in wealth, extent and importance, and the cathedral was again destroyed, all but the bare walls.

With the Normans came a class of men whose architectural ability and constructive skill were far superior to those of their predecessors. Lanfranc, a name ever to be remembered by British architects, was made Archbishop of Canterbury in 1070, and finding the cathedral in a ruinous state, pulled down a goodly portion of the building, and began its re-erection with arches of a bolder sweep and columns of more elegant proportion. The work was carried on under the direction of Prior Conrad, an architect as well as a prelate, and a man of more than ordinary ability. On the death of Lafranc, Anselm, a very learned theologian, and better known as St. Anselm, was made archbishop. He continued the work, the grandeur of which seems to have excited

the wonder of his contemporaries. "Nothing similar," writes William of Malmesbury, "was to be found in England, either for the brilliancy of the painted windows, the splendor of the marble pavement, or the pictured walls which attracted the eyes of the beholders." The cathedral was re-dedicated to Jesus Christ, on its completion in 1114, by Archbishop Rudulfus. Henry of England, David of Scotland, and every bishop of the realm were present, "the ceremony being the most famous that had ever been heard of on earth, since that of the temple of Solomon."

In 1162 the first Englishman since the Norman conquest was made archbishop and primate of all England. This was Thomas a Beckett, who became, after death, the most famous intercessor in the Christian church. He was made archbishop through the efforts of Henry II, who thought to make of him a tool, to be used for his own purposes when treating with Rome; the King found in him, however, anything but a pliant tool. For several years the archbishop bearded the King, until, in an outburst of anger, the latter exclaimed, "Will no one rid me of this stubborn priest." As a result of this expression the archbishop was murdered in the church on the 27th of December, 1170. In a year after the assassination the cathedral was desecrated, the bells were fastened up, the pavements torn up, the hangings and pictures removed, and dirt and rubbish suffered to accumulate. The re-consecration of the church, after so memorable an event, led the way to an influx of benefactions and honors, strongly characteristic of the superstitions of the age and of the influence of the priests. The recorded lists of treasures which flowed in upon the death of the archbishop after the church had declared him a martyr in the cause of its dominion, are admirable testimonies of its fame. On the 5th of September, 1174, the choir and other parts of the church were consumed by fire, and the greater portion of the woodwork in the roof was destroyed. In 1175 and 1180, Richards being the archbishop, the whole was rebuilt and improved under the superintendence of William of Sens, who, it seems, had been brought from France for that purpose. Mr. William of Sens borrowed largely from the Cathedral of Sens, for nearly all the work of his left us in Canterbury is simply a reproduction of work in his own town. Fortunately for the cathedral, but unfortunately for himself, he fell from a scaffold and was disabled before the work was half done, and the work fell to the lot of an Englishman—another William, and of whom the chroniclers say "was small in body, lofty in mind, astute in workmanship and honest," qualities that did not seem to obtain to any large extent among the Normans. At this point I am offered an opportunity to descant on the artistic beauties of this, one of the most noted cathedrals in Europe, for he it is remembered, that until Thomas Beckett, the murdered Anglo-Saxon priest, was made a martyr and became the foremost saint in the Roman calendar, St. Dunstan was the saint that took the cake for working all sorts of impossible things, and curing free of charge all kinds of unnameable diseases. Both St. Thomas and St. Dunstan were archbishops of Canterbury, both saints were Anglo-Saxons, and both saints had shewed their utter disregard of kingship, while the Norman archbishop, St. Anselm, was noted for his unquestionable faith, his learning, and his humble submission to the king and pope. I admire the latter saint for his learning and his desire to better the condition of his

fellows by teaching them to take things as they came, and for his devotion to his church and his love of art. I love Dunstan for his fearless independence, his indifference to the doctrine of divine kingship, and his efforts to benefit his fellow men by teaching them the industrial arts so as to enable them to wrestle with the problems of the earth, rather than to waste their existence dreaming of the unknowable. If I had my way in the matter, it should be St. Dunstan of England, hammering at the forge, rather than the mythical St. George, killing an animal that never existed, that should be the royal arms of England. As to St. Thomas, he was of the rugged bull-dog type. He loved a fight and never counted on, or feared the consequences. If he had not quarreled with Henry the 2nd, he would have had a tussle with the Pope, and like Henry, the Pope in all probability would have come out second best. Thomas' piety hung pretty loosely upon him, though the monkish writers have built a wall of sanctity around his memory, while history and facts give us such an insight into his character as to lead us to believe that all his ideas regarding religion were of the crudest sort, and led him to mistake wealth and power for religion.

Since William the Anglo-Saxon finished his work in 1180, the Cathedral has not been greatly enlarged, though some additions and many improvements in the interim have been made; the tower has been completed, and the south porch added, so that dimensions now are nearly about as in 1180.

Rome, watching the trend of events, and knowing pretty nearly what kind of a man King Henry was, made the murdered Archbishop a Saint, and appointed a day—St. Thomas' day—which is still kept, ordered Henry to make atonement for his sinfulness in suggesting the murder of so good a man as Becket. Henry made a pilgrimage to the tomb in sackcloth and allowed himself to be pounded by the priests until he fainted—the fool—and by this means became reconciled to the church. To this incident we are indebted for that masterpiece of poetic art, "The Canterbury Pilgrims," by quaint and loveable old Chaucer. I can forgive Henry for his pusillanimous submission, because of its being the means of giving us those beautiful productions by the Father of English poetry.

Under direction of the Pope, with the consent of Henry the 3rd, Cardinal Langdon caused a costly shrine to be built in honor of the saint, and the removal or translation of the remains took place on the 7th of July, 1220. This ceremony took place in the presence of Henry the 3rd, the Cardinal and a number of foreign prelates. The expense attending this ceremony was immense, the Cardinal having provided refreshments, with provender for horses, along the road from London, for all who chose to attend. Conduits were dispersed about the city of Canterbury, which ran with wine, and nothing was wanting to give full effect to the triumph of priestly power. The festival of the Translation of St. Thomas became an anniversary of the highest splendor, and to this day it is observed in many of the Roman churches on the continent. I may say also, that for two centuries after the murder nearly every church built in Europe was dedicated to our own Anglo-Saxon bull-dog, St. Thomas a Becket.

(To be Continued.)

Mr. N. H. Bradley, architect, 18 King Street East, Toronto, was recently married to Miss N. Corner.

STUDENTS' DEPARTMENT.

ADVICE TO STUDENTS OF ARCHITECTURE.

THE following remarks by the president of the R. I. B. A. are as applicable to Canadian as to British students:—No teaching will give genius or parts to learners, but I think I may say, without fear of contradiction, that untiring diligence is an absolutely necessary qualification, and this has been so evident to those who possess genius, that Buffon defined it "as the art of taking trouble," which we all know it is not; but diligence is so absolutely necessary for the development of genius, that it is excusable to confuse the necessary servant with the master.

Necessary as an indefatigable diligence is, the longest life is only too short for the attainment of even a competent knowledge in the master art we profess, which embraces so many various arts, and requires a knowledge so wide and so various, and qualities of mind that are rarely found in one person. It is a great saving of time to have a map, a compass, and a knowledge of the streams and currents, of the reefs and sandbanks, before we embark; not only to prevent shipwreck, but also to avoid deviation from our course, so that there may be no waste of labor, however strong and indefatigable we may be. Some of the wise-acres of the last century, during a dearth, employed laborers to dig holes in the ground and fill them up again, and although this kept the laborers' muscles in training and prevented the loss of habits of diligence, the crop that should have resulted and rewarded the laborers for their exertions was non-existent; nothing is more disheartening than useless labor. Many of my own early years were wasted in inking in drawings, and I could not help wishing at the time that I had been a shoemaker, for stitching shoes could not be more irksome, and would have prevented some people from getting their feet wet or worn. The creation of something useful would have mentally compensated me for the irksome labor, while no one was benefitted by my inking in drawings.

The wisest saying of the Delphic oracle was, "Know thyself," and it can be as usefully applied to themselves by those who study architecture as by others in the various exigencies of human life. It is obvious that if one knows oneself one can best choose the part of architecture most fitted to one's aptitudes, and one can map out those parts that are essential to be learnt; by this means not only is much useless labor saved, but that worst of all shipwreck is averted, the having embraced a profession that is not congenial, and for which one finds one's capacities are not fitted, and this, too, when it seems too late to throw up the profession. I recollect hearing a pupil of Laing's—The Laing who built the Custom House—who found architecture so uncongenial that he embraced the law, and became a Vice-Chancellor; as Alfieri the barrister became a celebrated architect. It is within the knowledge of most men that many of those who have become distinguished have changed their profession; but these men have mostly had a natural aptitude for the subject they eventually embraced and excelled in.

To those unfortunates who have embraced architecture but have no aptitude for it—nor, as far as they know, for anything else—I can only recommend the behaviour of Scotchmen under the circumstances. I think I may say that Scotchmen are the only people of the United Kingdom who have a good education, and by this I mean a moral education; each man who finds himself in this position says to himself "this is my only chance in life; I have no natural aptitude for it, but I must try by application and striving in season and out of season to make up for my lack of aptitude;" and you rarely find that they fail in whatever walk of life they have embraced, for they mostly gain a good position.

Youth is naturally enthusiastic and ambitious, and would fain know everything connected with its occupation. Most students have probably read Bacon's programme of mastering all human knowledge; but we are not all Bacons, and had Bacon lived now, when the memory wanted for one branch of science is greater than that given to most men, he would never have set out on so impossible a quest.

A student, for example, has to see what a column or stanchion will safely bear; and so he wants to know the laws of flexure, and finds himself referred to Poisson; he gets Poisson's book, but finds that to understand it he must master the different calculus; he gets a treatise on that, but finds it would take him his whole life, if he could learn it then; yet as the multiplication table is to arithmetic, so is the different calculus to the higher branches of mathematics; he therefore comes to the old conclusion "that everybody cannot do everything."

It is, perhaps, a laudable ambition to take one of the great architectural geniuses as a pattern, but you should have common sense enough to calmly and dispassionately review your own powers and capacities before entering on a serious attempt at imitating his achievements. There is only one genius in several millions of people who is blessed with the capacities of the great architects, who has the making of a Brunellesco, an Alberti, a Peruzzi, a Bramante, a Leonardo, or a Wren, and I only wish more of those who find themselves incompetent would abandon the profession. The average capacity of mankind is not great, and yet each one wishes to be the bright particular star of the world. Each unit of mankind cannot endure the idea that his capacity is not equal to that of the greatest genius; but he will admit that he is deficient in industry, and in that judgment which guides a man to concentrate himself on the principal aim of his life. This shows us one of the weaknesses of humanity, to be ashamed of admitting that which is a pure accident, over which we have no control; and to admit, without blushing, our neglect of those things that are in our power. It is the fashion to encourage the belief that all men are born with equal capacities, as it is to suppose that every epoch is equal in mental and moral power, and that the difference depends on teaching, as if cutting and polishing a flint stone would turn it into a diamond. I recollect Roebuck talking this sort of nonsense at Sheffield, and after pointing out what John Stuart Mill could do at thirteen years of age, who had then mastered Greek, Latin and mathematics, he said:—"But if John Mill could do what he described, why may not John Brown do as much, or nearly as much?"

The subjects that seem to me to be of the utmost importance are—firstly, the recognition by students and their teachers that architecture is a structural art, and that until that is realized and acted on no great improvement is likely to take place. All the materials we use have weight, and in their ultimate position have size too, and in the positions they are placed have, as well as downright pressure, cross and diagonal strains. All these strains occur in almost every building, and must balance one another, or else the building becomes deformed or ruined, or tumbles down. The theory of the strains that produce equilibrium are called statics. The architect with the keenest observation, the strongest memory, and the greatest experience is a mere child, compared with one who is a masters of statics and the strength of materials; secondly, we all admit that without proportion buildings and their parts are unsightly, and we endeavor to train the eye to good proportions by studying classical buildings; their proportions, however, mainly give the statical results gained by experience at the time the buildings were erected; if these studies are pursued too long they are apt to make us fall in love with a state of knowledge inferior to that which we now possess.

That friend of our youth, Mr. Ruskin, partially enlightened us on this subject by pointing out the infinite variety of proportions in nature, most of which we find agreeable to the eye, and we now know that what may be called the fundamental proportions depend on the weight to be carried, the strength of the material, and its height and size. Statics allow us to go further, for, knowing the strains to be borne, and where they come, and the strength and peculiarities of the material, we may mould it into various forms, either by cutting away useless parts, or by adding to the bulk in certain directions. By statics we know where there is a change of function, and where various strains are concentrated, and these parts call for some expression, and the only way of expressing them architecturally is by moulding.

The proper arrangement of each chamber for the duties it has to perform, the collocation of the different chambers, and the access to them by means of halls or passages without unnecessary waste of room, is commonly denoted by the word "planning," and in reality it includes much more, as, for instance, their proper lighting, aeration, ventilation, and warming; in fact, the enabling us to make the different portions fulfil their ends is the foundation of all good architecture. But man wants more than this; he wants not only certain parts to be more striking than others, but to make the whole have such an external appearance that it tells us the use of the building and evokes the emotions proper to its use. All we have to deal with outside are walls and roofs, but we may want porticoes and porches, towers, lanterns, spires, and domes for certain uses and under certain circumstances.

Inside we have much the same elements, but we have as well, floors, ceilings, and staircases, and although we always want floors to be flat, there are circumstances where steps are required to give elevation and dignity to certain parts, and there are also certain shapes which add beauty or dignity to the rooms,

and if the ceiling is vaulted or domed we may want it made striking or beautiful.

One particular point is usually missed in speaking of architecture—the skill in combining the junctions between forms of diverse or opposed shapes, and of marking the different changes of function where they occur, or of marking the concentration of strains. These, as I mentioned before, are accomplished by mouldings, and these mouldings are to give us varieties of light and shade, and to have a sort of logical sequence in their forms. The Greeks were the first and the greatest masters of mouldings, which were, of course, shaped to be played on by brilliant sunshine and in a clear air. The Roman mouldings were only badly-designed Greek ones with infinitely less variation. The second masters of moulding were the Gothic architects, who designed them for the misty climates and feeble sunshine of the countries they lived in. They were as logical as the Greeks, though destitute of their refined artistic sensibilities; and since then the study of profiling has been abandoned.

I say nothing of sculpture, in which I include naturalistic as well as vegetable and animal forms, for this is another art; but it must be exercised with due regard to the architecture, and must neither be incongruous nor destroy the scale of the part, the chamber or the building. You cannot expect sculpture from architects, as it takes the life study of an artist, and architecture alone may be said to embrace the life studies of many men—men of science, men of ingenuity, and men of art. When, however, the architect is so transcendent a genius that he can master his own art and that of another artist, he excites our wonder and our admiration; but to be a bad architect and an execrable sculptor too is not a combination to be admired, and still less to be proud of. It merely entitles the possessor to Martial's compliment, who called the amateur who did so many things a great meddler.

There are one or two more points that I must mention, but perhaps the influence of the age is the most important; this in one direction is what we call the taste of the nation, and it inevitably modifies the individual taste of the artist. The old proverb says, "The mind of man is greedy of novelty," and novelty in itself has, no doubt, a certain charm, but it should only be that difference from what has gone before which must inevitably follow from those thousands of things, circumstances and temperaments that distinguish one age from another. It shows us too, how ridiculous antiquarianism is when it takes the place of architecture. We are not Greeks, Romans nor Byzantines; our age is not Romanesque, nor Gothic, nor Renaissance, and if the architecture of the day is to charm the age it must discover and embody the desires of the age. The paraphrasing of deceased styles only charms us in so far as our civilization approaches that of the date of the building paraphrased, and the building wants novelty too. We naturally do not admire Gothic paraphrases, as the desires of those times are so far removed from our own inclinations. The Gothic architects' passion for geometry is very far from being ours.

Architects can but slightly modify the desires of an age, as there are so many thousand things, conditions and influences that combine to mould public taste. All they can do is to have the attainable knowledge and skill required for their art, and if invention in architecture is extinct we must try to recreate it. I hope it is not extinct, but if it be we still have the mountains, rocks, and peaks, the caverns and grottoes, the woods, the trees, and the plains, the rivers and seas, the clouds and the heavens, to stimulate us to embody the lessons we can learn from these natural effects; not to speak of the lessons we can learn from the past architectures of the world. I cannot help thinking that if the born architect should arise and be single-eyed in his devotion to this grand art we might hope to see it again flourishing, as in the grand epochs of the past. Antiquarianism is not content with gnawing out the vitals of architecture, but is destroying our faith in its being still alive.

Another of the points that wants attending to is the study of the means employed by the great architects of the world to evoke the emotions proper to the use of buildings, and particularly to those dedicated to the adoration of the Almighty. Students are naturally apt to seize upon features that they admire and use them in the most incongruous way, as if the adornment of a temple or a palace were appropriate to a laborer's cottage, a coal store or a tailor's shop, whose owner makes the human form divine ludicrous and ignoble. Elegant simplicity of appearance should be the architect's aim for most of his buildings, as his aim should be to produce horror and repulsion in a prison.

Our great object now is to be sure that we have done our best

to learn all that we ought to learn. How delightful it would be if we were as sure of our progress as were the Gothic architects, and instead of being as careful of every scrap left by a semi-barbarous age, as if it had come from Heaven, and were sacred, we could use with a light heart a good stone, as they did, for our own work, and build in their worked part which we have surpassed. I may say this was not confined to Gothic days; the Greeks used the sculpture they had surpassed for filling in holes and trenches, and Mr. Purdon Clark showed me a Saracen wood block that had once formed a door-head in a destroyed mosque, the back of which had been used for the work of the day, while the carved part, worked in a former age, had been built in.

BUILDING COVENANTS.

BUILDING covenants are inserted in building agreements, leases and conveyances with the object of providing for the building of houses of prescribed description and value, restricting users of the land in prescribed manner, the making of roads, sewers, drains, and other similar objects, says the Contract Journal. Although the vendor propose to sell the whole of his land absolutely, yet if he does so in several lots it will be important to insert restrictive covenants to prevent the land being used for purposes other than those for which it is sold, for otherwise some lots may be used in such a way as to decrease the value of the remaining lots.

A covenant by a person to build such a house as he should think fit binds him to nothing, as a promise cannot be conditional on the mere will of the promiser. Where a lessee covenanted to repair buildings comprised in the lease, and, further, within the first fifty years of the lease to take down the demised messuages as occasion might require, and in their place erect not less than four other good and substantial brick messuages, it was held that, if the lessor had the original houses substantially as good as new in the course of fifty years by being repaired, the covenant would be satisfied, and the lessee need not actually rebuild (*Evelyn v. Rad-dish*, 7 Taunt., 411). But where certain premises in a state of dilapidation were demised, and the lessee covenanted to new build the brick houses within three years, he must rebuild the whole, it was held that making extensive repairs by pulling down and rebuilding the fore and back fronts was not a performance of the covenant (*city of London v. Nash*, 3 Atk., 512). A covenant entered into by the owner of certain land with a purchaser that an adjoining plot "should never be hereafter sold but left for the common benefit of both parties and their successors," is enforceable, and does not contravene any rule of law (*McLean v. McRay* L.R. 5 P.C. 327). When land is sold in lots, and there are mutual restrictive covenants by the purchasers that the land shall not be used so as to create a nuisance to the original vendor, or the occupiers or proprietors for the time being of the "adjoining" property, the word "adjoining" means the property adjoining each lot, and not merely the property adjoining the whole piece of land originally sold; and the owner of any lots is entitled to enforce the covenant against the owner of any other lot. By reason of the doctrine that a conveyance of land impliedly also includes the subsoil of an adjoining street "even to the middle of the way" houses on the opposite side of the road may be within a covenant relating to premises "adjoining or contiguous" (*Haynes v. King*, 1893, 3, Ch. 439). A covenant for "the free use of the newly intended road whenever the same may be made," will not apply to a road which, when the parties contracted, was newly intended to be made, but was executed and complete before the sealing of the deed (*Crisp v. Price*, 5 Taunt., 548). Land having been laid out for building, and streets projected across it, the defendant bought one plot with a right of way over the projected streets, the vendors reserving a similar privilege over the street in front of the plot sold; and the defendant covenanted with the vendors that he would not erect any building on the plot within the distance of six feet from the intended streets. It was held in the case *Child v. Douglas* (1 Ray, 560) that a subsequent purchaser of a neighboring portion of the land might obtain an injunction against the first purchaser to restrain him from infringing his covenant, and this whether the plaintiff at the time of his purchase knew of the existence of the defendant's covenant or not, as the plaintiff must be taken to have bought all the rights connected with this portion of the land, especially if he has bound himself by a similar covenant. An owner of building ground upon which the houses of uniform height and depth had been built sold it in plots, and conveyed each plot in fee, subject to a perpetual rent charge, and each purchaser covenanted with the grantor that there should be no trees or any building whatever in the garden that should exceed the level of the parlour floor; it was held (*Western v. McDermitt*, 2

L.R., Ch. 72) that it was a breach of covenant to erect any building above the prescribed height extending beyond the back of the house, though the ground upon which it was built was never used as a garden. Where a covenant was that "no buildings" except dwelling-houses not to cost more than £200 each to front with the road should be erected on certain land, and the defendant, having thrown the land into pleasure ground, built a garden wall alongside the road eight feet six inches high, and in one part eleven feet high, behind which part he also erected a vinery with a roof leaning against the wall; it was held (*Bowes v. Law*, L.R., 9, Eq. 636) that the building of the wall to the height of eight feet six inches was not a breach of covenant, but that the building of the wall to the height of eleven feet and the erection of the vinery were breaches of the covenant. The erection of wooden hoardings for the purpose of advertisement, fastened to the premises, is a breach of covenant not "to erect or make any building or erection on any part of the demised premises." But the erection of an advertisement hoarding is not a breach of a covenant that any "building" which should be erected on the land should be of a certain height and have a stuccoed front and slated roof, and be used only as a dwelling-house (*Foster v. Fraser*, [1893], 3, Ch. 158). A covenant in the purchase deed of a house in a terrace that no building shall be erected on any part of the land of the vendor lying on the other side of the terrace, and opposite to the plot of land thereby conveyed, applies only to the part of the land which is immediately opposite to, and is the width of the plot conveyed. The right to a prospect can be acquired only by grant or covenant, and not by prescription. Where a lessor, pending an agreement for a building lease, represented to the intended lessee that he could not obstruct the sea view from the houses to be built by the lessee, pursuant to the proposed lease, because he himself was a lessee under a lease of 999 years, containing covenants which restricted him from so doing; but after the building lease had been taken, and the houses built upon the faith of this representation, the lessor surrendered his 999 years' lease, and took a new lease, omitting the restrictive covenants, the Court restrained him, by injunction, from building so as to obstruct the sea view.

A covenant by the lessee to "rebuild" a house on the site of the demised messuage, which he covenants to pull down, involves no obligation to build a new house in the same manner, style, and shape, or with the same elevation, as the old building. If it is intended, therefore, that the house should be rebuilt in the same style, the covenant should be so framed as to clearly express this agreement. Bay windows carried from the foundation to the roof, and projecting three feet beyond the line of existing houses are a breach of covenant not to erect any "building" nearer to the road than the line of frontage of the then present houses in that road, and to observe the straight line of frontage with the line of the houses. Where, at the date of the covenant, the houses were already built, and the covenant prohibited any trees or buildings whatsoever in the garden exceeding a certain height, it was held that "garden" meant the whole space from the back wall of the house to the extremity of the plot, although not used as a garden, and that a bow of eight feet at the rear of the house, and above the prohibited height, was a violation of the covenant. If building land is to be laid out with private residences, a covenant is inserted to restrain the lessee from erecting any buildings on the premises to be used for carrying on trades or businesses generally or to particular businesses. A covenant restrictive of the user of premises is not void as being in restraint of trade; such a covenant in a lease runs with the land. A covenant not to carry on any trade, business, or calling in a house, or to otherwise use or suffer to be used, to the annoyance, nuisance, or injury of any of the houses of the estate, is broken by carrying on a girl's school, and the covenantee does not waive the benefit of the covenant though he has permitted other houses held under the like covenant to be used as schools (*Kemp v. Sober* 1 S'm. N.S. 516; *Johnstone v. Hall*, 2 C. and J. 414). The object of the covenant, sometimes, is to restrain the erection of buildings for the purpose of carrying on certain specified trades and businesses only, and in such cases questions may arise as to whether a particular trade is within the meaning of the covenant. Such a prohibition goes only to those trades or businesses which are actually specified, and implies that other trades may be carried on. The test whether a covenant not to carry on a "similar business" to that of the lessor has or has not been broken, is whether the one business is sufficiently like the other to compete with it. A covenant that land should not be used "as a site for any hotel, tavern, public-house, or beerhouse," nor "should the

trade or calling of an hotel or tavern keeper, publican, or beer-shop keeper, or seller by retail of wine, beer, spirits, or spirituous liquors" be "used, exercised, or carried on at or upon" the same is not broken by the sale of wines and liquors in bottle by a grocer in the course of his trade. Nor is a covenant not to use premises as a public-house, inn, tavern, or beershop, or for the sale of wine and liquor, broken by the sale to members of a club for the benefit of the club held on the premises. Nor, apparently, by the user as a private hotel—i.e. by sale only to guests and travellers staying at the hotel. But a covenant to use the premises "as and for offices, and the storage of wines and liquors only," is broken by selling wine by the glass; and a covenant not to permit any house to be used as a beershop or public-house is broken by the sale of beer in the shop, in pursuance of an Excise retail of beer to be consumed off the premises.

If the covenant provide against the exercise of certain trades or businesses, specifying them, "or any other offensive trade," omitting the words "or business," the Court will not extend to the word "trade" in the latter part of the sentence the meaning of the word "business" in the former part; but will treat the word "trade" as applicable to the dealing by buying and selling only, for every business is not a trade, though every trade is a business. In some cases there is only a general covenant, which is so framed as to restrain the erection of houses and buildings for the exercise of offensive trades or businesses, or to prohibit occupations which may be a nuisance or annoyance to the other tenants of the lessor; and in construing such covenants much will depend on the situation of the premises and the particular circumstances of each case. The word "nuisance" in a covenant is sufficient to prevent an act causing annoyance only. "Annoyance" and "grievance" are wider terms than nuisance, and include anything that will disturb the reasonable peace of mind and pleasure of an ordinary sensible person, although it do not amount to physical detriment to comfort. Where the covenant prohibits the erection of buildings for the exercise of trades which may grow to the annoyance or damage of the lessor, etc., without his written license, the mere fact of the lessor's suffering the tenant to carry on one trade will not, afterwards, authorize the carrying on of another without his written license.

In framing covenants against nuisances and trade in building leases, it should be observed that the omission of the words "offensive trade, business, or occupation" may be of very great importance to the lessor, having regard to the liability of the owner or occupier of land both at law and in equity in respect of nuisances committed, or caused, by those whom he brings on the land, or at any rate where he licenses the acts causing the nuisance. The landlord may not be liable where a nuisance is caused by the act of a tenant, yet if the act is one expressly contemplated in and authorised by the lease, the landlord may be liable for any injury caused thereby, although the tenant, if sued, might have no defence to the action.

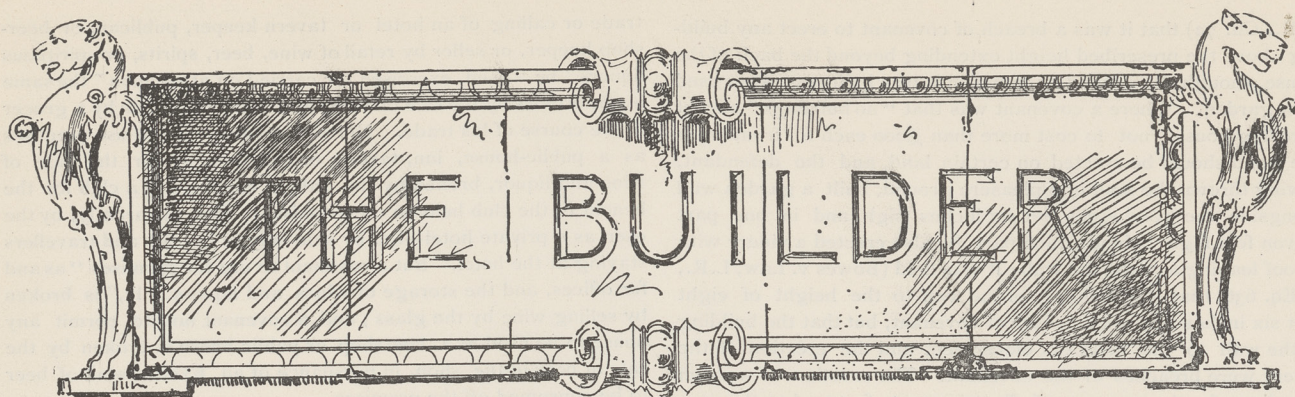
Lands were conveyed to A for the purpose of erecting villas upon them. By the conveyance parts were allotted for roads, and it provided that the owners and occupiers of the villas should at all times have a full and complete right of road or passage over, along, and upon the same, in as absolute a mode of enjoyment as if the same were public roads; and A entered into a covenant to that effect. Villas were built upon the land, and let to several persons. Some of the lessees, without the consent of the others, requested a gas company to open up the roads and lay down pipes for the supply of gas to their villas, which the company accordingly proceeded to do. On a bill by the devisees of A for an injunction to restrain the company from so doing, it was held that whether the roads were public or private, the devisees were bound by his covenant, and that the occupiers of the villas were entitled to have gas laid on to their houses (*Selby v. Crystal Palace District Gas Company*, 31 L. J., Ch. 595).

PERSONAL.

Messrs. Dick & Wickson, architects, Toronto, have removed from the Canada Life Building to No. 26 Bank of Commerce building.

Messrs. Curry, Baker & Co., architects and heating engineers, Toronto, have removed from Victoria street to 90 Yonge street, where they have a nice suite of offices well adapted for their purposes.

Mr. Chas. Baillarge, Architect and C. E., Quebec, presented to Section II of the Royal Society of Canada, at its meeting in Halifax, N.S., in June, papers on "How Best to Learn to Speak or Teach a Language," and "The Abstract and Concrete in Education."



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

Outside Boarding. OUR neighbors to the south have a better way of boarding the outside of their baloon frames than is generally practiced on this side of the line. As a rule, stuff fairly seasoned is used, and instead of placing the boards on the wall horizontally, as is the common practice with us, they are nailed on diagonally, at about an angle of 45 degrees, reversing the angle on the different sides. This method has the effect of making the frame very much stiffer and rigid than when the boards are nailed on horizontally. Of course, the boards, to serve their best at stiffening the building, should be laid on the building with their joints close together and well nailed to each and every stud. A house boarded this way inside and out, with the order of the direction of boarding reversed, and the work fairly well done, will never budge in itself. It cannot be blown to pieces nor shaken by the wind. It may be blown over like a dry-goods box under heavy wind pressure, but such a thing as being torn to fragments would be out of the question. If the house is intended to be veneered with bricks, the necessity of boarding diagonally is much greater than if it is intended to be sided or rough-cast, as the wind pressure on the roof and gables is apt to cause a movement in the framework, which would act detrimentally to the brickwork, cracking the walls and causing other serious defects. If the house is to be rough-cast, the boarding should by all means be nailed on diagonally, and the lathing also should be put on the same way, only in reverse order to the boarding. The cause of cracks and breaks in rough-cast houses is because the frames have not been made rigid enough, or because the foundation was not sufficient and has settled, or because the material was unseasoned and shrinkage resulted. A rough-cast surface on a stiff frame will last a lifetime.

Seating Space. It often happens that a country contractor is called upon to make a rough sketch for a rural school, church or hall, and he is instructed to design the building to accommodate a given number of persons, and in order to construct his building to the proper dimensions to meet the requirement, a knowledge of the space required by a single person to be comfortably seated will be requisite. There is no general rule in universal practice that covers this question. Boards of education, architects, chairmen of church boards and others, in this and other countries, have endeavored to formulate certain dimensions to be used for each individual present in a hall, church or school, but, from some cause or other, unanimity of figures seems impossible. Generally, the following figures will be found to answer all ordinary

conditions: For halls, allow 18 inches frontage and 24 inches depth. This gives ample room, and in cases of emergency could be reduced to 15 x 20 inches, but this would necessitate some crowding. Of course, a great deal depends on the style of seat used. If orchestra chairs are used the space may be reduced somewhat, but if the old-time wooden seats, benches or pews are provided, then the full dimensions of 18 x 24 inches should be maintained. Desks used for scholars in the public schools should be, for two scholars, 3 feet 10 inches long, with a seat the same length. Here it will be seen that a new condition arises—desk room as well as seating room will have to be provided for, and to give the greatest amount of comfort and allow for passage ways between desks, each scholar will require a space of 33 x 33 inches. Seats for scholars five years of age should be 9½ inches high; ten years of age, 13¼ inches high; fifteen years of age, 15½ inches high; over 15 years of age, 16¼ inches high. Besides the space allotted for an audience, congregation or scholars, ample provision should be made for a platform, on which will be situated pulpit, reading desk, choir stand or other necessary furniture, according to the uses for which the building is intended. A little study of the foregoing will enable the country contractor to strike very nearly the size of the building required.

Seasoned Lumber. ALL country contractors should, whenever possible, keep a stock of well-seasoned stuff always on hand. A few thousand feet of fairly good inch lumber kept in stock and well piled will not only come in handy, but will be a good standing advertisement for the contractor. Everybody knows that good lasting work can not be made with lumber or timber that is only half seasoned, or not seasoned at all, and the contractor that can say to his intended client, "I have all the stuff in my yard stacked up that will be required to build your house," stands a much better show of getting the work, and getting a better price for it, than the man who has to go to the mill and order his stuff to be cut from the green logs. This not only applies to planks and boards; it is equally applicable to joists, studding and rafters. It is just as important to the fixedness of work, that the joists and studding should be well seasoned, as that the doors, flooring, sashes and wainscot should be formed of good dry material. The shrinking of joists is often the source of much trouble, as all the floors, from attic to main floor, settle down to meet the changed conditions, causing doors to bind at either top or bottom, changing the relationship of locks and keepers, breaking plaster at angles of walls or cracking it over doorways, dropping wainscot and base-boards on partitions below wainscot



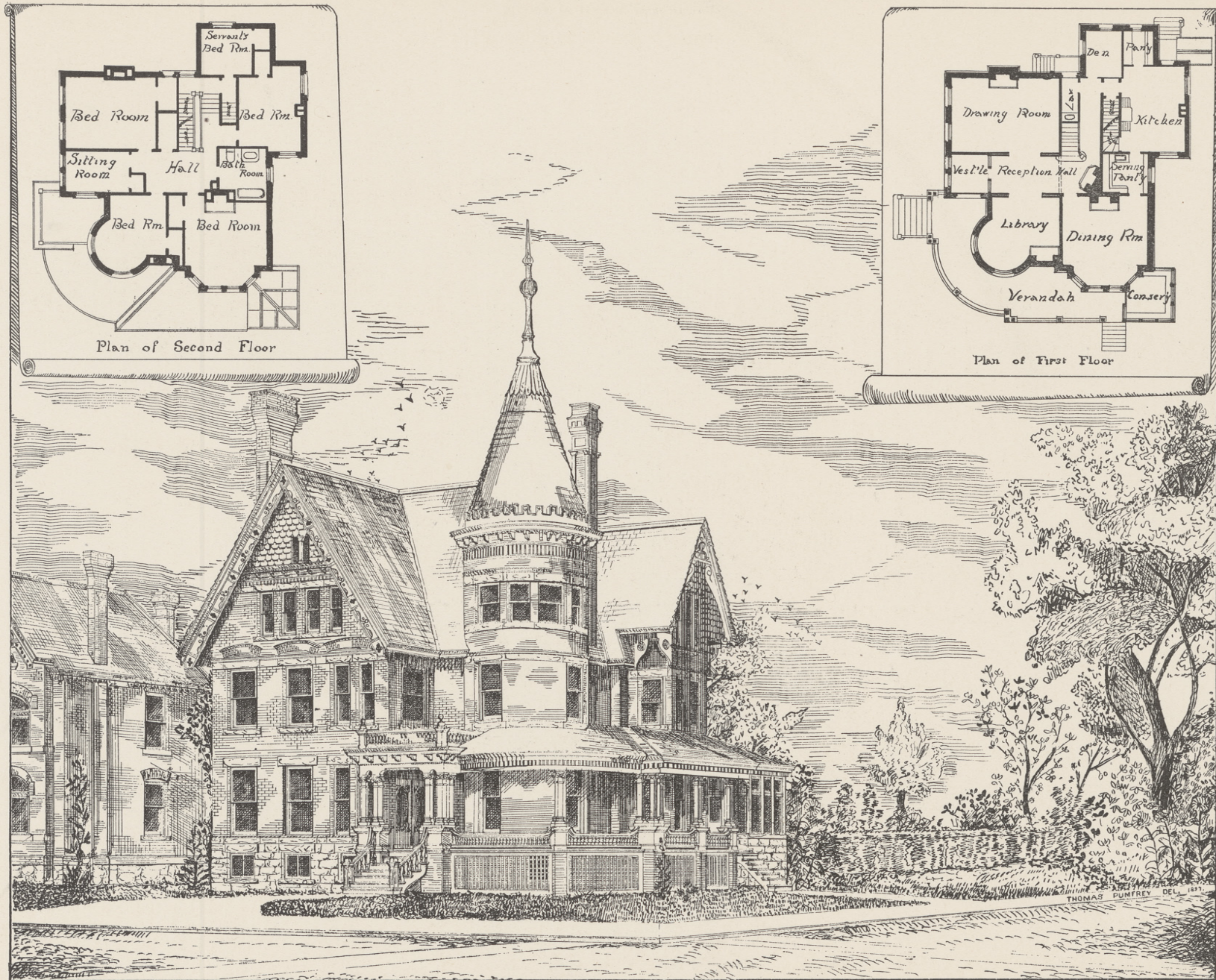
NATIONAL ASSOCIATION OF MASTER PLUMBERS OF CANADA—DELEGATES AND VISITORS.

SECOND ANNUAL CONVENTION, TORONTO, JULY 1ST, 1897.



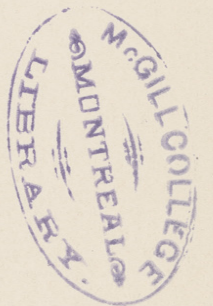
FULFORD MAUSOLEUM, LONDON, ONT.

MOORE & HENRY, ARCHITECTS.



RESIDENCE OF MR. JAMES THOMSON, HAMILTON, ONT.

JAMES BALFOUR, ARCHITECT.





THE LAKESIDE HOME FOR LITTLE CHILDREN, TORONTO ISLAND.

CURRY, BAKER & CO., ARCHITECTS.



PORCH OVER ENTRANCE TO CONFEDERATION LIFE BUILDING, TORONTO.
J. WILSON GRAY, ARCHITECT.

and base-boards on side walls, and generally wrenching the whole interior of the house out of shape. If the lower joists shrink a half inch, the partitions and the centre of the next floor drop to meet the shrinkage; then if the joists in the second floor shrink in the same proportion, the displacement in the second floor will be something very disagreeable, as many a householder has experienced. Joists, well piled, and held over for a year, shrink but very little afterwards, and their value during the year will have increased much more than the interest on their first cost and the cost of piling and extra handling. The reputation of many a good builder has been ruined because of his being obliged to make use of unseasoned materials. A few dollars judiciously invested in a good assortment of lumber will always return to the investor a solid remuneration for his outlay.

Fences.

THE picket fence is rapidly passing away so far as cities and towns are concerned, as iron and stone and bricks, in one shape or another, have almost superseded it. In village or country, however, the wooden fence still holds its own, and the house-builder in these places has frequently to wrestle with the wooden fence post and the multi-formed picket. Much has been written as to the proper way to put a fence post in the ground so as to get the longest period of usefulness from it. Our experience is that a post inserted in the ground with its top end of growth down will last from 15 to 20 per cent. longer than if put into the ground with the butt down. There are good reasons for this, but it would take up too much space to give them; one reason, however, may answer for the others—timber and branches of trees all grow upwards out of the main body, and the grain of the wood is more open where the timber grew out; this being the case, the water can readily find its way into the timber by way of the open pores that stand out to the weather. If, on the other hand, these openings are turned mouths downwards, as would be the case if the post were set butt upwards, the water during a rainstorm would run off altogether, or remain on the surface of the post until evaporated by the heat of the sun. Fence posts out of which damp is kept will last many years longer than when exposed to the weather. Another thing about a picket fence that shortens its life very materially is the manner in which the lower end of the picket butts a water-table or ribbon piece. A picket should never butt anything below; the spaces between the pickets should be left open, so that water can get away and air circulate freely through every possible space. Notching the rails for the insertion of pickets is a bad practice, so also is boring holes in rails to receive round pickets. These methods increase the chances of water getting into the centre of the rails, thereby causing early rotting. Multi-form pickets, machine or hand-made, should be eschewed; they are in bad taste, weak, and offer more opportunities for decay than do plain pickets. Indeed, no wooden fence made conforms to good taste in a greater degree than one formed with plain flat pickets with pointed tops; the next best in order being a square picket fence, with the tops of pickets covered with a toad-back rail and moulding. In all cases of picket fences, it is better to nail the waist-band and base-board on to the face of the pickets, leaving an opening between the pickets, rail and base-board. When possible, the rails should be painted—at least one coat—before the pickets are nailed

in place. This will preserve the rail and picket at their junction from rapid decay.

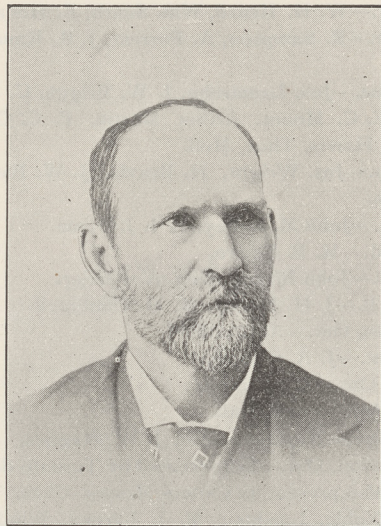
PROMINENT CANADIAN CONTRACTORS.

V.

Mr. J. N. Gibb, of Wallaceburg, Ont., whose portrait appears on this page, is well known in Western Ontario as a successful public contractor. Mr. Gibb is a native Canadian, having been born in the County of Elgin in 1843. He has had a varied business experience, having been connected in his earlier years, with ranching, the lumber business, store-keeping, and gold mining.

In 1886 he entered the contracting business, for which he was well adapted, being possessed of a mechanical turn of mind, and having the ability to devise original methods of successfully carrying out difficult undertakings, a quality of the highest value to a contractor.

Mr. Gibb is the inventor and builder of several contracting appliances—one of which is a self-propelling



MR. J. N. GIBB.

pile driver, having two small paddle wheels which are worked by a bicycle gear from a driving shaft; another, a steam machine for cutting off piles at any depth below water; and a third, for boring and bolting timbers in any depth of water.

Among the important works completed by Mr. Gibb may be mentioned the Erie and Huron docks at Court-right, ferry slip at Sarnia (for which he likewise drew the plans), several steel bridges in the county of Kent, which are said to be the only bridges in Canada resting on steel pile foundations.

Mr. Gibb is at present engaged on the construction of a wharf 321 feet in length for the Bushnell Oil Co., at Sarnia, Ont. He is ever on the look-out for improvements, and is highly esteemed for his enterprise and probity of character.

The employees of the Gurney Foundry Company, Toronto, held their annual picnic to Oshawa on Saturday, the 10th inst., per steamer Garden City. On arriving at the wharf the excursionists took the electric cars for Prospect Park, about three miles from the lake shore. Complete arrangements had been made for refreshments, sports, etc., and an enjoyable time was spent. Mr. Edward Gurney, the president of the company, Mr. Carrick, manager, Mr. Alcock, secretary-treasurer, and Mr. Cromwell Gurney were on hand, and took an active interest in the events.

National Association of Master Plumbers

SECOND ANNUAL CONVENTION

THE early days of July witnessed the opening in Toronto of the second annual convention of the National Association of Master Plumbers of Canada. In point of attendance, business progress and social features, it was a pronounced success, and would seem to mark the beginning of a new era for the plumbing trade of Canada.

On June 30th a secret meeting of the Executive Committee was held at the Palmer House, the headquarters of the delegates. At 10.30 o'clock on Dominion Day the convention proper opened, in the rooms of the Toronto association, Queen and Victoria streets, the president, Mr. Jos. Lamarche, of Montreal, in the chair.

The president appointed Mr. Wm. Briggs sergeant-at-arms, and the following gentlemen a committee on credentials: Messrs. W. H. Heard, London; M. H. Dunbrack, St. John, N.B.; A. Forest, Quebec. This committee reported the following delegates present:

London, Ont.—W. H. Heard, Wm. Smith, E. Holland.

Quebec, Que.—R. Sampson, A. Forrest, J. R. Kane, O. Matte, A. Pickard.

Montreal, Que.—Jos. Lamarche, J. W. Briggs, C. E. Thibault, P. J. Carroll, E. C. Mount, Arthur Martin, P. C. Ogilvie, John Watson, J. W. Harris, Thos. Moll.

Toronto, Ont.—Jos. Wright, H. Beavis, J. W. Burroughes, J. B. Fitzsimmons.

Ottawa, Ont.—John McKinley, F. J. Johnson.

Windsor, Ont.—M. B. Squire.

Halifax, N.S.—John Borton, Geo. A. Perrier.

St. John, N.B.—J. H. Doody, M. H. Dunbrack.

St. Catharines, Ont.—A. Chatfield.

Stratford, Ont.—J. A. Castlake.

St. Thomas, Ont.—W. Flaherty.

Peterboro', Ont.—Adam Hall.

Winnipeg, Man.—Represented by J. W. Hughes.

Toronto Junction, Ont.—Represented by Toronto delegates.

There were also present as visitors Messrs. Chas. T. Bull, St. Thomas; B. Noble, London; M. J. Laroux, Windsor; and a number of Toronto members, as well as representatives of the wholesale supply houses.

President Lamarche welcomed the wholesalers and manufacturers. He referred to the good feeling which existed between the supply houses and the plumbers, and thought their presence was an indication of willingness to continue to co-operate in the future. He announced that the next business was the appointment of a committee on resolutions.

It was moved by Mr. Burroughes, seconded by Mr. Martin, that a committee of five be named. Carried. The president then appointed Messrs. Jos. Wright, J. W. Harris, J. H. Doody, R. Sampson and Wm. Smith, to act in this capacity.

The president stated that any motions to be put before the meeting should be submitted. Motions amending the constitution would go to this committee.

At the desire of the delegates, it was decided to transact the business in English only.

Mr. Wm. Smith, vice-president for Ontario, submitted a notice of motion amending the constitution, which, he thought, would place the Association on a more solid foundation, and in which the following recommendations were made:

That there be a set of supreme officers, to be composed of the president, vice-president, treasurer, secretary, and sergeant-at-arms. That each province be formed into what shall be known as the Canadian Master Plumbers' Association of the Province of —, to be composed of all the local associations in said province, and the local association to elect delegates to attend the provincial convention instead of the Dominion, as at present. That at each provincial convention three representatives be elected to attend the supreme convention, which would be held once a year. That a chart be issued to local associations by the supreme power, and that each local association be managed under the number system. That a certificate of membership be issued to each member of the local associations, said certificate to be forfeited upon his withdrawal from the association. That a seal be procured and adopted by the Dominion Association.

Moved by Mr. Mount, seconded by Mr. Hughes, that the

following changes be made in the constitution and by-laws:

Article 1, page 20, after the word "plumbers" add "and steam-fitters." Article 4, page 21, erase the words in the third line "at or" 1st meeting in May and substitute "next convention." By-laws, article 7, add to fourth line after the words "convention" the words "unless otherwise decided by the convention," and article 17 to by-laws which shall be the order of business—"Montreal Resolutions"—To amend the interpretation of the term "master plumber" so as to include steam and hot-water fitters.

The above resolutions were referred to the Committee on Resolutions.

REPORT OF EXECUTIVE COMMITTEE.

The Executive Committee, composed of Messrs. Lamarche, Hughes, Burroughes, Mount, Doody and Fiddes, reported that three meetings were held during the year, one each at Montreal, Quebec and Toronto. The meeting in Quebec was rendered necessary by the accumulation of business which it was impossible to bring to a satisfactory conclusion by writing. The signatures of the Quebec wholesale dealers to the resolutions were secured, and at the Toronto meeting the long existing difficulties between the plumbers and the Plumbers' Supply Association were amicably settled. At the meeting in Montreal, a sub-committee was appointed, consisting of Messrs. Lamarche, Hughes and Mount. This sub-committee held forty-six meetings, besides a number of conferences. During the year local associations were formed in Winnipeg, St. Thomas, Stratford, Windsor and St. Catharines, and negotiations for the formation of an association were in progress at Vancouver, B.C. A number of towns were still unorganized, and it was urged that special efforts be made to get these places enrolled. Appreciation of the efforts of Mr. Wm. Smith, of London, in association work was expressed. The Executive strongly urged the necessity of delegates impressing upon their local associations the desirability of the members treating the association as an integral part of their business organization, and to look upon the money spent in keeping up an organization as a paying investment. They recommended the convention to consider the advisability of making a fixed annual charge instead of the present practice of making regular per capita tax calls on the members.

This report was also referred to the Committee on Resolutions.

REPORT OF SANITARY COMMITTEE.

Messrs. Heard, Hall, Mashinter, Clark and Birch, comprising the Sanitary Committee, reported that two meetings were held during the year, one at London on 3rd December last, and one immediately preceding the present convention. The meeting at London was called to assist the London plumbers in their efforts to obtain a plumbing and inspection law, which was now in a fair way of being accomplished.

An earnest effort had been made to answer some of the many difficult questions relating to sanitary construction and apparatus, and much care and deliberation were exercised to arrive at a satisfactory form of inspection law, and the results are shown in the annexed specifications. The question of license and regulation was also carefully considered. Reference was made to the progress which had been made in sanitary science in late years, and to the valuable assistance rendered in this connection to the Plumbers' Association by the trade press. In the opinion of the committee, nothing was so conducive to the good of the plumbers of Canada as a uniform specification, involving a close inspection and a good workable and effective license and regulation by-law. The Committee therefore recommended:

1. That a united effort should be made by each local association of master plumbers throughout the Dominion to have a bylaw enacted, similar to the one herewith submitted, thereby guaranteeing uniformity, which is thought to be the best way to agitate for a Dominion sanitary plumbing law.

2. That at least one member of the local Board of Health should be a practical master plumber, to be nominated by the local Master Plumbers' Association, and, where inspectors exist, they also to be members.

3. That at least one member of each provincial Board of Health should be a master plumber, nominated by the National Association of Master Plumbers, or Provincial Board where one exists.

4. That at least one member of the Dominion Board of Health should be a master plumber, nominated by your Association.

5. That there should be, in each town or city or municipality of sufficient size, a board of plumbing examiners, whose duties shall be to advise the Council or Board of Health upon all matters relating to the construction of sanitary plumbing and advise such changes as may be necessary to keep specification abreast with the times.

6. That directors should be under the control of this Board of Plumbing Examiners, who should also be empowered to decide upon and adjust all disputes arising from the operation of the bylaw.

7. That the constitution of the Board of Plumbing Examiners

shall be one engineer, medical health officer, two master plumbers and one practical journeyman plumber, the last three to be chosen by the Master Plumbers' Association.

8. That inspectors of plumbing construction shall have full authority, subject to the Examining Board only.

9. That action be taken in Ontario first.

The committee further referred to the model by-law enacted by the province of Ontario as a step in the right direction, but thought it did not go far enough. The by-law was in the nature of a minimum that would be accepted by the Ontario Board of Health before any city or municipality can put in operation any system of sewerage, its being optional with any municipality to enact any by-law embodying more if they think it desirable or necessary.

The following is a copy of the by-laws recommended for adoption :

NO. —. A BY-LAW TO LICENSE AND REGULATE PLUMBERS.

Whereas, it is desirable and necessary to license and regulate plumbers in the city of —,

Therefore, the Council of the Corporation of the city of — enacts as follows :

1. Upon and immediately after the passing of this bylaw and in every ensuing year before the first day of February, any person desiring to carry on the business or trade of plumbing, as a master plumber within the limits of the city of — shall take out a license, for which license such person shall pay, at the time of issuing thereof, the sum of \$—, except as hereinafter provided. No person shall receive such license unless he is of the full age of 21 years, and has a place of business within —, and furnishes a bond binding himself in the sum of \$200 with at least two securities in the sum of \$100 each, to the satisfaction of —, that he is himself a practical plumber, or that he will employ a sufficient number of regularly educated, practical and experienced plumbers to do all such plumbing work as he may engage to do, (whether he is a practical plumber himself or not) will not permit or allow any such work to be done by or for himself, or in connection with his business, except by such competent workmen, and that he will not violate any of the terms and conditions, rules and regulations contained in bylaw No. —, and in any other bylaw in force from time to time in —, respecting plumbing, drainage, sanitary matters and the water works.

2. That every person desiring such license shall file with the — a petition in writing, giving the name of the applicant, and in case of partnership, the name of each member thereof, together with the place of business, and asking to become a registered plumber, and such petition shall be accompanied with the bond hereinbefore mentioned.

3. Any change in the firm or location of the business shall be properly reported to the —, and the license shall be kept in a conspicuous place at the place of business.

4. A partnership of two or more persons desiring to carry on such business of master plumbers may do so on obtaining the license hereinbefore provided for and the word "person" in this bylaw shall include such partnership. When two or more persons are licensed as partners the license shall be issued in the name of the firm or co-partnership, and no license shall be transferable.

5. All licensed master plumbers shall be held responsible for all acts of their apprentices or employees in connection with the business for which license is issued.

6. Every such license unless it is expressed to be granted for shorter period and unless the same shall become sooner forfeited as hereinafter provided, shall be for the year current at the time of the passing thereof, and shall expire on the 31st day of December next succeeding the date of the same.

7. Upon satisfactory evidence furnished to the Board of Plumbing Examiners, that any plumber has been twice convicted for any violation of this bylaw or of any of the bylaws respecting plumbing, drainage, sanitary matters or waterworks, the said Board of Plumbing Examiners shall declare the license forfeited.

8. Any plumber whose license shall be declared forfeited as hereinbefore provided, shall not again be entitled to a license until the said declaration of forfeiture shall be revoked by the Board of Plumbing Examiners as hereinbefore provided.

9. No person shall carry on business in — of — as a master plumber, unless he is the holder of a license issued as hereinbefore provided to himself or to the partnership of which he is a member.

10. Within one month after the passing of this bylaw, every man at work in the — of — as a journeyman plumber shall register his name, age, residence, and name of present employer, and any journeyman plumber who is not now employed as such, who may desire to be so employed in the — of — hereafter, must before commencing work, comply with the foregoing regulations, and further that a fee of 25c. be charged for each such name registered.

11. That any person or persons, guilty of an infraction of any of the provisions of this by-law, shall, upon conviction before the Mayor, Police Magistrate, Justice or Justices of the Peace of —, on the oath or affirmation of any credible witness, forfeit and pay at the discretion of the said Mayor, Police Magistrate, Justice or Justices of the Peace convicting, a penalty not exceeding the sum of fifty dollars, (\$50), for each offence, together with the cost of prosecution, and in default of payment thereof forthwith, it shall and may be lawful for the Mayor, Police Magistrate or Justice convicting, as aforesaid, to issue a warrant under his hand and seal, or in case of the said Mayor, Police Magistrate, and Justice or Justices, or any two or more of them acting together therein, then under the hand and seal of one of them, levy

the said penalty and cost or costs only, by distress and sale of the offender or offenders' goods and chattels, and in case of no sufficient distress to satisfy the said penalty and said costs, it shall and may be lawful for the Mayor, Police Magistrate, Justice or Justices, convicting as aforesaid, to commit the offender or offenders to the common gaol of the — of — with or without hard labor for any period not exceeding one calendar month, unless the said penalty or cost be sooner paid.

12. The Council shall, from time to time, as occasion may require, on the nomination of the Board of Plumbing Examiners, appoint such inspector of plumbing as may be found necessary, but no person shall be eligible for such appointment who shall not have passed a satisfactory examination for proficiency in both practice and theory of plumbing and drainage before the Board of Examiners, as hereinafter provided. Such inspector or inspectors shall have full power to act on all matters under the by-law subject only to the Board of Plumbing Examiners. Such inspector shall be under the supervision of the Board of Health, and shall be attached to the office of the city engineer, and shall be paid such salary as the Council shall determine.

13. The Board of Plumbing Examiners is hereby constituted to consist of one engineer, medical health officer, two master plumbers in good standing in the — of —, and one practical plumber to be chosen by the Master Plumbers' Association. The last three shall hold office for one year after their appointment, and shall be paid a fee of four dollars for each session of the board, and the board shall be called together by the engineer (who shall be chairman of the board) at such times as the chairman shall find necessary.

14. In case any dispute arises under the by-law to license and regulate plumbers, as to whether any person or persons employed by a licensed plumber is a regularly educated, practical and experienced plumber, as in said by-law provided, and said master plumber may require the — to permit the said workman to be examined before the said Board of Examiners, whose decision, properly certified as to the competence of the said workman, shall be final and conclusive.

15. It shall be the duty of the above mentioned plumbing examiners to inquire into all changes or disputes arising from the operation or interpretation of any part of by-law No. — entitled "A By-law to Secure the Sanitary Condition of Buildings," to hear and decide upon all disputes between the plumbing inspector and the public, and between the said inspector and the plumbers of the — of — and their decision shall be final and conclusive. It shall be the duty of the chairman of the plumbing examiners to take such necessary action within one week from proper notice to him in writing against any person accused.

16. In case of any dispute arising relating to any provision of the above mentioned by-laws, the party who disputes shall give notice to the city engineer in writing, setting forth the nature of the dispute, and shall appear before the Board of Plumbing Examiners, who shall hear and decide on the merits of said dispute, and the decision of the said board shall be final and conclusive.

NO. —, A BY-LAW TO SECURE THE SANITARY CONDITION OF BUILDINGS.

Whereas it is desirable and necessary to make provisions to secure the sanitary condition of buildings.

Therefore the Council of the Corporation of the city of — enacts as follows :

It shall not be lawful to construct or extend any drain for the reception of sewage or waste water under or into any building (except stables), or to connect same with any public sewer or drain, except the said drain, shall in its plan and construction conform to the following requirements :

PERMIT.

1. Before proceeding to construct, reconstruct or alter any portion of the drainage, ventilation or water system of an hotel, tenement, warehouse, dwelling house or other building, the owner or house agents constructing the same shall file in the office of the — an application for a permit therefor, and such application shall be accompanied with a specification or an abstract thereof in a blank form prescribed and supplied for this purpose, stating the nature of the work to be done, and giving the size, kind and weight of all pipes, traps and fittings, together with a description of all closets and other fixtures, and a plan with the streets and street numbers marked thereon, and showing the drainage system underground.

2. All plans must be legibly drawn in ink on heavy white paper or tracing linen, and must be drawn on a scale of eight feet to one inch.

3. A permit must be granted or refused within two days from the time of filing of the application, and the permit of the — (if granted) shall be valid for six months from the date issued.

4. If the — shall find the said plans and specifications do not conform with the rules and requirements laid down in respect to the drainage and plumbing in the by-law in the city of —, he shall not issue any permit for such plumbing and drainage, and it shall be unlawful to proceed therewith.

5. The — shall be notified when any work is ready for inspection, and all work must be left uncovered and convenient for examination until inspected and approved of. The inspection shall be made within two days, except where the soil is of such a nature that it cannot be left open for two days, when the inspection shall be made forthwith after notification shall have been given to the —. The — or inspector appointed by the corporation, appointed for that purpose, shall call for smoke test, which test shall be made by the party whose work is being inspected under the direction of the said — or inspector. The — or inspector is to supply the machine or instrument to make

said test, and the result of said test shall be recorded in the office. If the work is not found to be satisfactory, two days' notice shall be given, and if the work is not made satisfactory the penalty clause shall be endorsed forthwith.

6. After a plan or specification has been approved of, no alteration or deviation from the same shall be allowed except on a written application of the owner or the agent of the owner to the—.

TILE, PIPE AND CONNECTIONS.

7. Vitrified salt glazed earthenware drain pipes shall be equal in quality to those used for the private drain connections; they shall be laid and jointed with Portland cement or otherwise as shall be specified by the— for the private drain connection contract. The pipes used for surface or weeping drain must be laid around the outside of house walls where practicable and tapped to connect with the rain water leader. They shall have a tap placed on them which shall be easily accessible for flushing. All earthenware drains laid on newly-made ground, or very wet soil, to be placed on a prepared foundation of plank or concrete. No built or mason's traps shall be used, all traps shall be of vitrified salt-glazed earthenware or iron. All drains must be properly connected with a private drain and not covered until inspected. In no case shall drains between walls of a house and street be laid until the private drain from the street line to the public sewer has first been laid and completed. All private drains laid by the city are to be taken to the outside of the wall where the buildings are on the street line. No tile shall be run through or under the wall of any building.

SOIL PIPE.

8. All soil pipe within the walls of any building shall be of iron or brass, and shall be continued at least three feet above any opening in the roof and three feet above any opening in an adjoining building, when such building is within 10 feet of such pipe, and left open so that the whole of the inside drainage may be thoroughly and constantly ventilated. (Approved tile may be used under ground; if, however, the house is drained by a continuous iron pipe from the outer connection with the house drain at least three feet outside the wall to the opening above the roof, as hereinbefore provided, the trap and the fresh air inlet may be dispensed with). After the passing of this by-law, no privy sinks, pan closets or any other water closets having any mechanism in connection with the bowl forming a mechanical seal, and no closet or other convenience which allows the escape into the house of gas which has been confined in any part of it or to the drain or soil pipe or which allows the accumulation of filth in or about it, shall be fitted up or used. When a soil or drain pipe (which in all cases must be of iron) passes through a wall it shall not be built in solid, and shall have at least two inches clearance, and the opening shall be covered by arch or line lintel. Earthen or iron water closets having traps above the floor using lead connections must have a cast brass flange not less than $\frac{1}{8}$ inch thick, soldered to the lead and bolted to the trap of the closet, the joint being made perfectly air-tight.

Siphon jet, washouts and flushing rim hopper closets only will be allowed, and they must be fitted with flushing tanks, automatic or otherwise, of approved character and design.

No pipe shall weigh less than the following for length of 5 feet:

6 inch diameter.....	100 lbs.
5 " "	85 "
4 " "	45 "
3 " "	30 "
2 " "	20 "

All pipes, traps and fittings shall be of good quality, and shall be free from flaws or defects and shall be of uniform thickness.

CESS PITS AND VENTS.

10. All connections with cess pits shall be made in same manner as for sewer, with the addition that the cess pit must be ventilated independently with separate pipe of not less than 4 inches diameter and 10 feet high, so placed that the drain pipe from the trap outside the wall to the extreme end shall have free and uninterrupted access to the atmosphere at each end.

FITTINGS.

11. No tees shall be used, but Y connections and $\frac{1}{8}$ inch bends, or the combination of the two in one fitting, shall be used where practicable.

MAIN TRAPS.

12. Between the house and the public sewer or drain at the lower end or foot of the vertical stack of soil pipe and between the stack and the public sewer, inside the wall of the building which it serves, there shall be placed a ventilation hand hole trap of approved description and make.

CLEANING OUT SCREWS.

13. The pipe to have two cleaning-out screws of not less than four inches in diameter, one located about 42 inches above and in front of the bend in the basement floor, the other to be located between the said bend and the outer wall of the house. The first-mentioned above cleaning-out screw shall be provided with a connection of the proper size to admit of the testing apparatus being attached.

SEWER VENT.

14. On the sewer or street side of said soil pipe trap a ventilation pipe shall be placed of the same size and kind as the soil pipe and carried above the roof, as hereinafter specified for soil pipe.

FRESH AIR VENT, INLET.

15. Above the said trap there shall be connected with the main soil pipe an inlet pipe not less than four inches in diameter for the admission of fresh air. This pipe shall be brought up to 5 feet

above grade, and if for detached building and on outer wall may be carried above the roof with the same diameter of galvanized iron pipe properly hooked to the wall every eight feet. In all cases where the above pipe cannot conveniently be carried on the outside wall, then it shall be run up inside the wall and carried through the roof in the same manner as specified for main soil pipe, provided in all cases that the fresh air pipe shall be stopped at a point three feet lower than the main stack or soil pipe, the mouth of which shall be left open, or covered with basket if required.

16. Trap vent pipes may be of cast iron, lead or brass; sheet metal will not be allowed. All traps and fittings shall be equal, in quality and thickness, to the pipe to which they are attached.

17. No lead, waste or vent pipes shall weigh less than the following: $1\frac{1}{2}$ inches in diameter, 8 lbs. per yard; 2 inches in diameter, $10\frac{1}{2}$ lbs. per yard; $2\frac{1}{2}$ inches in diameter, $13\frac{1}{2}$ lbs. per yard; 3 inches in diameter, $16\frac{1}{2}$ lbs. per yard; 4 inches in diameter, 24 lbs. per yard.

18. Every water cock, bibb tap or hydrant attached to any water service or pipe, connected with and supplied from the water works system of the—, shall have legibly stamped thereon, in a conspicuous place, the name of the maker, and the same is to be properly tested both as to strength and weight before being so attached.

19. All water supply pipes shall be laid with due regard to danger from freezing, properly laid with a fall to a stop and waste cock placed in the cellar or other convenient place where they can be entirely drained off. Each consumer in a tenement building shall be supplied with a separate stop and waste cock on the service pipes inside the building unless metred.

TRAPS.

20. All drains and plumbing fixtures of every house or other building shall be supplied with sufficient traps and vents to prevent gas from the sewer, drain or other waste pipes escaping into any apartment, and every such fixture shall have its own trap with sufficient vent. No fixture shall drain through more than one trap (main trap excepted.) The ventilation pipes from the traps of any fixture shall be of the same size and weight as the traps they serve, up to and including $1\frac{1}{2}$ inches in diameter. For sizes over $1\frac{1}{2}$ inches in diameter, one size less may be used, and for length as hereinafter specified. No vent to be used of less than $1\frac{1}{4}$ inches in diameter.

TRAP VENTS.

21. No trap vent pipe shall be less than 3 inches in diameter where it passes through the roof. The rule for soil terminus, as hereinbefore mentioned, shall govern said vent pipe. Vents from water closet traps to be two inches for a length of 20 feet, and for a greater length three inches in diameter. Closet vents into which other vents are connected to be 3 inches in diameter.

AUTOMATIC VENTS.

22. Approved automatic vents may be substituted when necessary or advisable on special permit of the inspector.

OVERFLOW.

23. No safe waste, range boiler or cistern overflow shall be allowed to connect to any drain. All rain water and leaders shall be trapped, said trap to be connected with outside drain.

24. Wherever safes are placed under fixtures, the safe waste shall be run separately to the basement or cellar and be closed by a hinged brass flap valve of approved device to prevent cellar air from rising through the pipe. Urinal platforms shall not be provided with safe wastes.

25. The enclosing of water closets in wooden casings is prohibited. Water closets should never be placed in an unventilated room or compartment. In every case the compartment must be open to the outer air or be ventilated by means of an air shaft not used to ventilate any living or sleeping room and having an area of at least one square foot and an opening at the roof to the external air of an area equal to the area of the shaft.

26. Wooden laundry tubs and wooden sinks are prohibited. All such fixtures shall consist of non-absorbent material.

FERRULES.

27. Every connection between lead and iron pipes shall be made with brass thimbles or ferrules having properly wiped joints, and the ferrules shall be properly gasketed, leaded and caulked into the said pipe. Ferrules for 4-inch pipes shall weigh not less than $2\frac{1}{2}$ lbs.; for 3-inch pipes, not less than $1\frac{3}{4}$ lbs., and for 2-inch pipes not less than $1\frac{1}{2}$ lbs., each ferrule not to be less than 4 inches in length. All lead pipes to have properly wiped joints. Where the trap to closet is above the floor, the said connection of the same to soil pipe shall be made of brass and rubber.

SINKS.

28. Each house or building must have its own separate soil pipe and drain, and such soil pipe or drain shall be so placed as to be always readily inspected without destruction to walls, and the plumber shall be responsible for the connection of his work with the system of drainage, which connection shall be made by a cast-iron bend and three feet of pipe extending horizontally from the vertical soil pipe, and no two or more houses or buildings shall have drain in common until each separate drain shall have passed outside the walls of the house or building which it serves.

REFRIGERATOR WASTES.

29. Refrigerator wastes shall be supplied with properly ventilated traps and be disconnected and have drip basin.

30. For water works pressure no lead pipe shall weigh less than the following: $\frac{3}{8}$ inch internal diameter, 4 lbs. per lineal yard; $\frac{1}{2}$ inch internal diameter, 6 lbs. per lineal yard; $\frac{5}{8}$ inch internal diameter, 8 lbs. per lineal yard; $\frac{3}{4}$ inch internal diameter,

10 lbs. per lineal yard; 1 inch internal diameter 13 lbs. per lineal yard.

Galvanized wrought-iron pipe and fittings may be used for water supply pipes if desired, but no black iron pipe shall be used.

31. Every master plumber who shall himself or by his apprentice, agent or employees make any extension or alteration to, or shall remove any tap, pipe or other fixture attached to the pipes of the water works, shall, on the first day of the month in which such extension, alteration or removal was made, report the nature or extent of the same in writing to the engineer upon a written form to be supplied by said department.

32. No person except a duly qualified and registered master plumber under this law shall be allowed, without first having obtained a permit from the Water Works Department, to open or shut off a stop-cock in connection with the service supplying any premises, unless in case of urgent necessity to prevent loss from flooding, or in case of a plumber to make necessary repairs or to test his work, and shall in every such case leave the stop-cock as he found the same, and any person who shall commit any damage to any stop-cock in the service pipes of the department renders himself liable for the amount of any such damage.

33. No person except a duly qualified and registered master plumber, under this law shall be allowed to build, lay, alter or change any branch pipe or connect same to the system of sewers in the city of —.

34. No person except a duly qualified master plumber, properly registered under this law, shall make any connection to or run any pipe for the purpose of conveying water from the — water works into any building or ground in the city of —.

35. All work contemplated in this bylaw shall be done in a workmanlike manner and shall be subject to the inspection and supervision of the inspector appointed by the Corporation of the city of — for that purpose, and all faulty or defective work which may at any time be discovered shall be made satisfactory to the said inspector, and when found satisfactory the certificate shall be issued to the plumber.

36. No arrangements shall be made for supplying urinals except by self-closing cocks or automatic flush-tanks, and no arrangements shall be made for cleaning water closets or privy vaults by waste pipes from wash basins or by sinks or by any other means or evasion, but they shall be fitted up with the fixtures and appurtenances belonging to them respectively.

37. The — engineer, the medical health officer, and any inspector appointed for that purpose shall have the right at proper hours of the day and upon reasonable notice given and request made upon owner or agent, to enter upon and have free access to all parts of any building in the —, in which water from the waterworks is delivered or consumed or has connection to the sewer.

38. That section 15 of the by law appended to the Public Health Act is hereby repealed within the city of — except rule 1 thereof.

39. This bylaw shall go into force immediately on the passing thereof.

Section 40 referred to non-compliance with the provisions of the by-law, and the penalty to be imposed, which was placed at \$50 for each offence.

The report was referred to the Committee on Resolutions.

REPORT OF LEGISLATIVE COMMITTEE.

The Legislative Committee, composed of Messrs. McKinley, Borton and Johnson, reported the cost of incorporation as \$280, made up as follows: Advertising, \$30; Government fees, \$100; Solicitor's fees and disbursements, \$150. It was also necessary to get incorporation under the Manufacturers' Act to have \$40,000 of subscribed stock, as well as a seal, which would cost \$4.50. Report referred to Committee on Resolutions.

REPORT OF APPRENTICESHIP COMMITTEE.

The report of the apprenticeship committee dealt with the necessity of young men learning their trade thoroughly, and remaining in one shop instead of moving around. The card system was recommended for adoption, by which means an apprentice could not be taken on by another plumber without having a proper clearance card from his last employer. There were times when a master plumber was compelled to reduce his staff, and the card system would enable the discharged apprentice to complete his training in another shop.

This report was also referred to the Committee on Resolutions.

The report of the Essay Committee was then read by the Secretary. It laid special stress on the necessity of obedience to the principles of sanitation. Lack of space prevents us giving a more detailed synopsis of the report, which was referred to the Committee on Resolutions.

Mr. W. J. Burroughes, president of the Toronto association, here introduced to the convention Ald. Scott, Chairman of the Reception Committee of the City Council. In doing so, he took occasion to outline the programme arranged for, and invited all master plumbers to attend the convention.

Ald. Scott then welcomed the delegates. Among other things he said: "You are engaged in looking after the comforts, conveniences and safety of the community, and it is right to expect reasonable and proper reward. I hope that the occasion of your convention will result in some of the dissatisfactions which, I learn from one of your reports, exist, being removed, and that it will be a benefit to others as well as yourselves. Your craft is a very

ancient one. Until recent years it was supposed that the manufacture of lead pipe was of recent origin. This has lately been found to be a mistake, for over 1,800 years ago the plumbers' craft was pursued, except in the matter of sanitation, on much the same line as it is to-day. It was my fortune to visit some time since a city which had been buried for over 1,800 years, and there I found lead pipe and traps all very much the same as we see in use to-day, showing that the Romans over 1,800 years ago were engaged in the same class of work as you are to-day. I wish you success in your convention."

The president gratefully acknowledged the hearty reception extended by Ald. Scott, on behalf of the city. It was a fact, he said, that the city of Toronto had the best sanitary laws in Canada, and these laws were carried out. They had assembled together to discuss questions which contributed to the happiness of the citizens and for the purpose of securing better plumbing.

Mr. Hughes, secretary, also spoke at some length. He congratulated his Toronto friends upon the improvements that had taken place since his last visit about sixteen years ago. Referring to the statement made by Ald. Scott that their trade was an ancient one, he said the very name they bore was taken from an old Roman work, "plumbum," meaning lead. It is to-day almost a misnomer. White lead pipe was once the staple, it was now being used less and less. Concluding, he remarked that he could not see why legislators should safeguard the public against poor doctors and not against poor plumbing.

The president then called upon the representatives of the supply houses to say a few words, Mr. Edward Gurney, Mr. A. A. McMichael, of the James Robertson Company, and Mr. Anthes, of the Toronto Foundry Company, responding.

Adjournment for lunch was then announced. During intermission the group photograph, which we print on another page, was taken on the Metropolitan church grounds.

AFTERNOON SESSION.

Upon re-assembling, the reading of the president's address was the first business. This was done by Secretary Hughes.

PRESIDENT'S ADDRESS.

The president, in his address, outlined the early work of the Association, and pointed out the necessity of the Executive Committee answering all correspondence promptly. New associations, he said, had been formed in several places. Members from Sherbrooke, Richmond, and St. Hyacinthe had affiliated with the Montreal association, and he had news that an effort was being made to organize in Vancouver, B. C. It was important that the smaller towns and villages as well as the cities should organize, as the same interests bound them together.

Regarding the relations between the plumbers and the wholesale dealers, he was glad to say that all the principal dealers and nearly all the wholesale houses had signed the resolutions, thereby showing their good wishes towards the craft. He had an important interview with Mr. McMichael, of the James Robertson Company, in Montreal, and as a result Mr. McMichael stated that he would not only advise the Plumbers' Supply Association to sign the agreement, but would try and have it lived up to. The Master Plumbers' Association should, he thought, assist the wholesale men by supplying them with the names of all legitimate master plumbers. Each local association should look after its own members and report to the National. The plumbers themselves were their own enemies. It was yet common to see master plumbers going into wholesale stores, getting the goods charged to their customers and getting a discount reserved on the sales made. This was paving the way for the customer to return to the wholesaler, and puts the wholesaler in a false position if he should refuse to sell. They had also suffered through the journeyman plumbers, who took customers to wholesale houses and bought material and had the work done by day. One large manufacturing firm, the Robert Mitchell Company, of Montreal, had discontinued their contracting department, and would continue only as a supply house. This was a step in the right direction, and the president hoped others would soon follow. In January last the Executive Committee met in the city of Quebec and discussed several objections which were made to the resolutions principally affecting the hardware stores, engine builders, pump manufacturers, brewers, etc. Certain decisions were arrived at, but this convention would have to try and solve that problem. The plan adopted last year of naming the president, the secretary, and a delegate for sub-committee was a good one, and should be continued. Be careful, he urged, in the choice of executive officers. The services of Mr. J. W. Hughes, the able secretary, had been of great benefit to the association. Plumbing by-laws in cities and towns should not be overlooked, as they were the foundation of success. It was through them that the standard of plumbing would be elevated. In conclusion Mr. Lamarche thanked the trade press for the assistance rendered the association and the association for the honor conferred upon him by his election as its chief executive officer.

The reading of the address was greeted with applause.

Here a letter was read from the Toronto Plumbers' Supply Association, soliciting a conference with a committee of the National Association of Master Plumbers, and Messrs. Lamarche, Burroughes and Fitzsimmons were appointed.

Mr. Wm. Smith, vice-president for Ontario, submitted his report, which stated that one of his first duties was to appoint a

Sanitary Committee, composed of Messrs. W. H. Heard, London; A. Clark, Hamilton; W. Mashinter, Toronto; A. Hall, Peterboro; I. Birch, Kingston. He had organized during the year local associations at Stratford, with five members; Windsor, with eight members; and St. Thomas, with six members. Attention was directed to the necessity of having proper printed matter for the association, and to the laying down of laws and penalties to govern all members. The corner-stone of success, he thought, was secrecy. He found that in London the wholesale men had been



MR. JOSEPH LAMARCHE, Retiring President.

informed too much of what the plumbers were doing, and as a result the latter were suffering.

This report was also referred to the Committee on Resolutions.

Mr. J. W. Hughes, as secretary, submitted his report. During the past year 363 letters had been written from his office, besides the annual reports, circulars and other printed matter. The number of members of the local associations was as follows: Montreal, 82; Toronto, 55; Ottawa, 9; Quebec, 22; Windsor, 7; St. Thomas, 6; London, 15; St. Catharines, 6; Stratford, 5; St. John and Fredericton, N.B., 20; Winnipeg, 8, in affiliation with Montreal; Hamilton, Kingston, and Halifax, not given.

The report of the treasurer, Mr. A. Fiddes, showed the receipts from the secretary to have been \$457, while \$60 had been received from the Windsor, St. Thomas, Ottawa and Winnipeg associations. The disbursements were \$162.60, leaving a cash balance of \$365.40.

These reports were referred to the auditors, who reported them correct.

The Committee on Resolutions presented a report, recommending the adoption of the reports of the Executive, Sanitary and Essay Committees, which was agreed to by the convention. It further recommended that clauses 1, 2, 3 and 4 of Mr. Smith's notice of motion be filed for future reference, and that clauses 5, 6, 7, 8 and 9 be adopted.

Mr. Briggs moved, seconded by Mr. Burroughes, that the report be discussed clause by clause. Carried.

Mr. Burroughes thought the clause to issue a chart was premature, as the question of securing incorporation was under consideration.

Both Mr. Burroughes and Mr. Smith produced sketches of the proposed charts. The cost of incorporation was referred to, and eventually it was decided to leave clauses 5, 6 and 7 over for consideration. Clauses 8 and 9 were also left over, pending the report of the Legislative Committee.

The Legislative Committee subsequently handed in a report recommending that no action be taken towards incorporation at present, and stating that incorporation under the Dominion Act was considered impossible. This was finally agreed to, but the Executive Committee was instructed to obtain further information and report.

The sub-committee on constitution and by-laws reported, recommending slight alterations, which, on motion of Mr. Heard, seconded by Mr. Borton, were adopted.

The Committee on Resolutions reported that after hearing the report of the Legislative Committee in regard to incorporation, this committee is of opinion that clauses 5, 6, 7 and 8 of Mr. Smith's motion should be adopted.

A secret session in the evening closed the business of the first day.

SECOND DAY.

The meeting resumed at 10:30 on Friday, President Lamarche in the chair.

A letter from a Quebec house regarding members of the association not dealing with local houses caused the following resolution to be passed: That this convention desires to impress upon master plumbers the importance of encouraging preference for their local dealers when prices and material are equal, and that the Executive Committee be authorized to notify all master plumbers and wholesale dealers to that effect.

The result of the conference between the committees of the Plumbers' Supply and Master Plumbers' Associations was announced by Mr. Burroughes, who read the following minutes:

Messrs. Jos. Lamarche, president; W. J. Burroughes, vice-president; J. B. Fitzsimons represented the National Association of Master Plumbers, and Messrs. A. A. McMichael, P. McMichel, James Morrison, A. McArthur, W. A. Carrick, A. Anthes, Ed. Gurney, Geo. A. Booth, of Toronto, and Mr. McLaren, of Montreal, the Plumbers' and Steam-Fitters' Supply Association.

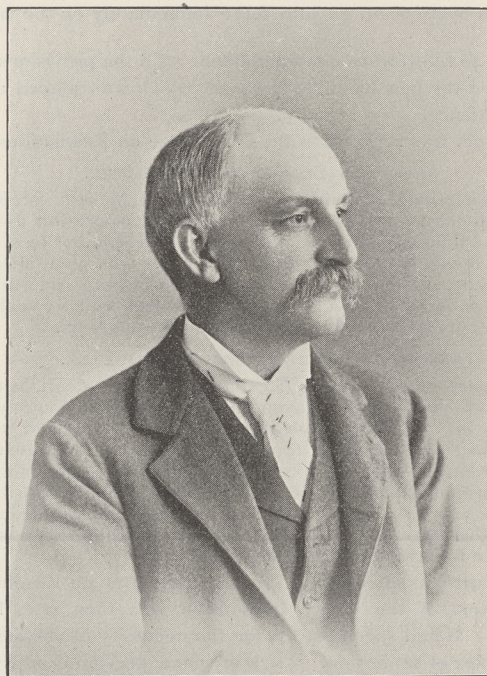
The definition of the term "master plumbers" was discussed at length, and it was finally decided that the National Association furnish a list of the bona fide master plumbers to the wholesale dealers. The clause referring to iron pipe being placed on the exempt list was discussed at length. President Lamarche announced that he could not consent to make exemptions for any particular city or province, and that it must be largely governed by local conditions. No definite action was decided upon outside of the convention.

Mr. Gurney requested that boilers and soil pipe for green house work be placed on the exempt list. A lengthy discussion ensued, Mr. Gurney pressing his claim, Messrs. Lamarche, Burroughes and Fitzsimons opposing him. Mr. Gurney contended that he had always enjoyed this privilege, and he could not see that any injustice would accrue to the plumber, as the purchaser always did his own fitting up.

"Your committee beg to report they refused to consent to this suggestion, and gave as a reason it would open up the door for manufacturers of other specialties." It was also suggested by the supply men that a 10 per cent. margin might be adopted. Mr. McMichael also requested that the committee report back to this association. They think the master plumbers should, in justice to all concerned, confine the purchase of their supplies to the signers of the resolutions.

On motion of Mr. Burroughes, the report was referred to the Executive Committee.

It was reported that nothing had been done with regard to affiliating



MR. JOSEPH WRIGHT, President-elect.

with the Master Plumbers' Association of the United States. The matter was left with the Executive Committee.

ELECTION OF OFFICERS.

The president named the Nominating Committee as follows: George Perrier, Halifax; J. R. Kane, Quebec; Thos. Moll, Montreal; F. J. Johnson, Ottawa; A. Purdy, Toronto. This committee nominated the following:

President—Jos. Lamarche, Montreal.

Vice-president—Wm. Smith, London.

Vice-presidents for provinces—Ontario—John McKinley, Ottawa. Quebec—P. J. Carroll, Montreal. New Brunswick—J. H. Doody,

St. John, N. B. Nova Scotia—John Borton, Halifax. Manitoba—L. A. Irvine, Winnipeg.

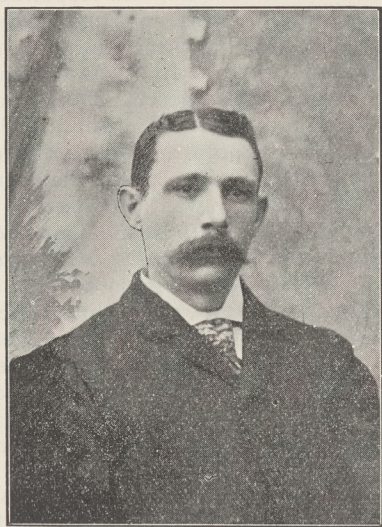
Secretary—J. W. Hughes, Montreal.

Treasurer—Wm. Briggs, Montreal.

Executive Committee, one from each province—Ontario, J. B. Fitzsimmons, Toronto; Quebec, R. Sampson, Quebec; New Brunswick, Thos. Campbell, St. John; Nova Scotia, George A. Perrier, Halifax; Manitoba, W. Stephenson.

Messrs. Lamarche and Hughes thanked the committee for again nominating them to office, but thought it proper that a change of officers should be made and declined to stand, Mr. W. J. Burroughes vice-president, having, for personal reasons, refused to accept office in the association, the committee submitted the name of Mr. Jos. Wright as president and Mr. W. Mansell as secretary.

At this stage Mr. Burroughes said that this was an important matter,



Mr. W. MANSSELL, Secretary.

and they should take into consideration not only the standing of the nominees, but also their ability and willingness to act. A great deal of executive ability was required to keep matters running smoothly, and he hoped those who accepted office would not allow their enthusiasm to relax until their term of office had expired. They had with them a gentleman who was well versed in every detail of the work, and he moved in amendment that Mr. Wm. Smith, of London, be elected president.

Mr. Wright declined in Mr. Smith's favor, and seconded the motion, but it was not the wish of the convention that he should retire.

Upon a ballot being taken, Mr. Wright was declared elected president.

For secretary, Mr. Fitzsimmons put forward in amendment the name of Mr. Burroughes, but Mr. Burroughes having refused to be nominated for president, declined to accept the secretaryship. He had private reasons, he said, for refusing to accept any position in the association.

No other nominations being made, Mr. Mansell was declared elected as secretary.

The newly-elected officers thanked the Association for the honor conferred upon them.

Upon motion of Mr. Lamarche, seconded by Mr. Smith, Quebec was chosen for the holding of the next annual convention, the date to be fixed by the Executive Committee.

Votes of thanks were then tendered to the retiring officers and acknowledged by them.

A special committee reported in favor of imposing a per capita tax of \$4 per member for the ensuing year. The report was referred to the Executive Committee.

Mr. J. H. Harris, of Montreal, expressed thanks on behalf of his French-Canadian confreres for the manner in which they had been treated. The English, he said, were more active than the French-Canadians, but when the latter once enlisted in the ranks they were hard workers. They had an example of that in their ex-president. "We are trying hard," he said, "to get more of our French confreres to come into the Association, and when they come to consider the work we are doing for them they will come in. When they do come in they will be workers." He moved a vote of thanks to the master plumbers of Toronto, which, being seconded by Mr. Hughes, was carried amid applause.

The business of the convention here ended, and the afternoon and evening and the following day were devoted to enjoyment.

SOCIAL FEATURES.

The president, Mr. Joseph Wright, has received from an eastern delegate, whose identity is not disclosed, a somewhat lengthy resume of the social features of the convention, which shows that the efforts of the Toronto association to royally entertain their visitors were fully appreciated. From this we extract the following:

IMPRESSIONS OF A DELEGATE TO THE RECENT MASTER PLUMBERS' CONVENTION.

Having been appointed a delegate from our association to the convention of the master plumbers, which met in Pythian Hall, Toronto, on Dominion Day, I cannot allow this, my first visit to the Queen City of the West, to pass without in my humble way expressing to my fellow craftsmen of Toronto and to the hospitable citizens my thanks for their kind and generous treatment of us, in making our stay in their beautiful city so pleasant that in years to come it will be treasured as one of the brightest periods in our lives.

Toronto has the reputation of being an ideal city in which to hold conventions, as evidenced by the many associations which are to meet during the summer and autumn months. Some of these, such as the Epworth League and the British Association for the Advancement of Science, which meet in the city in a short time, are continental and world-wide in their reputation. At the former from 30,000 to 40,000 delegates are expected from all parts of America, and at the latter, the eminent scientists of the world are to meet together in convention and compare ideas. Mankind at large will be thoroughly benefitted, and men will rise and call them blessed. And why should they not the master plumbers, who in a large measure hold the health of the community in their hands? From the strides which have been made in the science and art of plumbing during the Victorian era, when plagues and epidemics, which were called by many visitations of the wrath of God, are unknown, well may the public rise as one man and offer to us the glad hand that we are enabled, by mutual exchange of ideas, to place the dwellings we live in free from the germs of disease.

Such is the good work that our association is doing; but it is not my intention to go into details of the many matters which were brought up at the convention, but simply to express my appreciation of the manner in



Mr. Wm. BRIGGS, Treasurer.

which we were entertained during our stay in the city as the guests of the local Master Plumbers' Association.

On our arrival in Toronto we were received by the Entertainment Committee, and after our afternoon's work were taken in a large steamer, which can carry 2,000 passengers without crowding, across the bay to the Island, which lies about a mile from the city. On the Island are situated the lovely summer quarters of the Royal Canadian Yacht Club. I accepted an invitation from one of the members of this club and was royally entertained. After seeing the various sights and

partaking of light refreshments, which for another name we will call coffee, we returned to our hotel, feeling as fit as a fiddle for the work of our convention on the following day.

At the morning session we were welcomed to the city by Ald. Scott, on behalf of the Mayor, corporation and citizens, by Mr. Edward Gurney, president of the Board of Trade, and also by Mr. W. G. Burroughes, president of the local Plumbers' Association. After this we adjourned to the grounds of the Metropolitan church, where we were photographed.

The business of the committee being concluded on Friday morning, we accepted the invitation of Ald. Scott, chairman of the Reception Committee of the Council, who was accompanied by Ald Beale, to take a carriage drive to view the sights of the city. It took twenty carriages to contain the delegates and their friends. Our first halt was made at the new municipal buildings, of which Mr. E. J. Lennox is the architect. They will cost about \$2,000,000, and are a credit to the city and to the architect who designed them. I understand that the Bennett & Wright Co., Ltd., of which our new president, Mr. Jos. Wright, is a member, has the contract for the heating, ventilating, plumbing and electric wiring, amounting to nearly \$200,000, which is no doubt the largest contract for that class of work ever let in the Dominion of Canada.

Proceeding along Queen, Jarvis, Gerrard and Sherbourne streets to Bloor street, we passed the Horticultural Gardens, with their artistically laid-out walks and beautiful shrubbery. Driving through the Queen's Park, we visited the noble pile known as the Parliament buildings, the home of the Ontario Legislature. In Queen's Park are monuments erected to the memory of the late Sir John A. Macdonald and Hon. George Browne, also to those brave volunteers who fell in defence of their country at Ridgeway in 1866 and at Batoche in 1885. Just beyond the park are the classic buildings of Toronto University, which were destroyed by fire some seven or eight years ago, but which, rebuilt and enlarged, are a credit to the province and up-to-date in every department. After a drive to the extreme western part of the city, we entered the gates of High Park, a large park containing nearly 200 acres and with beautiful drives in all parts of it.

A drive along the Humber Bay brought us to Dufferin street, and at the kind invitation of the Toronto Radiator Company, we inspected their offices and works. At the entrance to their offices was a streamer with "Welcome to the Master Plumbers' Association" in such large type that it would attract the eye of every visitor. On assembling in the show rooms, Mr. Adam Taylor, who is acting manager in the absence of his brother, Mr. John Taylor, who is in Europe, extended on behalf of the president and board of directors, an invitation to partake of refreshments, which had very thoughtfully been provided. After our drive of three hours you may imagine that most of us were feeling rather fatigued, for the day was very hot; so we required no second invitation, and in a very short time we filed into the board-room, where we were served with everything that man could desire to eat or drink. President Lamarche, in proposing the health of the Toronto Radiator Co., said that they were all delighted with their reception, and as unexpected joys were better appreciated, he could safely say that the Safford Co., both in the way of radiation and entertaining, could not be surpassed.

Continuing our drive down Dufferin street to Exhibition Park, where the great Victorian Era Exposition is to be held in September, and on our return trip, through the kindness of Mr. Carrick, an inspection of the extensive and well equipped show rooms and shops of the Gurney Foundry Company on King street was made. Quite satisfied with our pleasant afternoon's drive, we returned to our hotel to take a short rest before the banquet.

On assembling at Harry Webb's parlors shortly after eight o'clock, we were received in royal style by the entertainment committee and by a large number of the local master plumbers, when the good hand of fellow-

ship was extended to us. The menu card was very prettily gotten up, and contained a complete list of the good things fit for a king, the toast list being included. Mr. W. J. Burroughes, president of the Toronto Master Plumbers' Association, occupied the chair, and around him were seated Mr. Jos. Wright, president-elect of the National Association; Dr. P. H. Bryce, secretary of the Provincial Board of Health; Mr. S. G. Curry, vice-president of the Association of Architects; Ald. Scott, representing the mayor; ex-president Lamarche; Messrs. Edward Gurney and W. H. Carrick, of the Gurney Foundry Co.; A. G. Booth, of the Steel-Clad Bath Co.; A. A. McMichael, of the James Robertson Co., and other prominent persons. Mr. W. J. Burroughes occupied the chair.

The first toast on the list, "Her Majesty the Queen," was proposed by the chairman, and responded to by all joining in the singing of the national anthem, "God Save the Queen," with a three times and a tiger. "Canada, the Land we Live In," was responded to by Dr. Bryce in a very able speech. Mr. George Grant sang in his usual good style "The Land of the Maple." "The Mayor and Corporation" was responded to by Ald. Scott, who bid us all a hearty welcome. "The Supply Trade of Canada" was proposed by Mr. Fitzsimmons, who coupled with it the names of Messrs. Gurney, McLaren and McMichael. Mr. Gurney in responding, gave the association good advice, and said if they would always do the right thing they had no better friend than himself. Messrs. McLaren and McMichael also responded. "Our Guests—the National Delegates and Visitors" was the next toast on the list, and was acknowledged by ex-president Lamarche, in his usual happy style, and Mr. S. G. Curry, of the Ontario Association of Architects, all joining in singing "They are Jolly Good Fellows." The toast of the "Local Master Plumbers" was responded to by Messrs. Joseph Wright and J. B. Fitzsimmons. Coupled with the toast of the "Entertainment Committee" were the names of Mr. Anthes, of the Toronto Foundry Co.; Mr. Adam Taylor, of the Toronto Radiator Co., and Mr. A. G. Booth, of the Steel-Clad Bath Co. The toasts of "The Press" and "The Ladies" were accepted in a very hearty manner.

During the evening Messrs. Curran, Rich, Ramsay, Carrol, Grant and several others entertained us with songs and recitations which were very much appreciated.

According to previous arrangement most of the delegates and their friends were at Yonge st. dock in good time on Saturday morning. The majestic steamer "Chippewa" soon had the delegates on board, and we had a very pleasant sail across Lake Ontario. Old Niagara town was reached after two hours' sail, and after a few passengers had disembarked, we steamed up the beautiful Niagara River, with its swift running waters and high banks, and landed at the historic village of Queenston, memorable as the place where Sir Isaac Brock lost his life in 1812.

Electric cars were in waiting, and in a short time we were ascending the mountain side. Erected on a high point is Brock's Monument, from which, it is said, the city of Toronto, forty miles away, can be seen on a clear day. A short stop was made at the Whirlpool, and from the high banks which rise to a height of 250 feet, can be seen the great whirling eddies in their mad endeavors to get away from the vortex. Continuing our course, we passed the Whirlpool Rapids, and in a short time reached the town of Niagara Falls, with the cantilever and suspension bridges crossing the river in close vicinity. Entering the electric cars, we skirt the edge of those beautiful rapids above the falls in all their turbulent grandeur, passing on to the Dufferin Islands with their shady nooks and quiet retreats.

On our return to the falls luncheon was served to us in the Dufferin Restaurant. Our new president, Mr. Joseph Wright, occupied the chair. On his left was ex-president Lamarche, and on his right Mayor Cole, of Niagara Falls, who, being a plumber himself, felt quite at home among his fellow craftsmen. Toasts were proposed and drunk with much enthusiasm, but as one of the speakers said that to be in a hall making a

speech when so many points of interest were to be seen, was to him infamous, a hasty adjournment was made. The members of the Entertainment Committee formed little parties, so as to be better enabled to see all that was to be seen in the short time at our disposal. I was fortunate in being invited to join the party of Mr. Adam Taylor, of the Toronto Radiator Co., who had twenty-six under his guidance. The first point of interest visited was the Incline Railway, by means of which we descended to the river below, to embark on the steamer "Maid of the Mist." Mayor Cole introduced us to the captain, who, having been a plumber in the past, did his best to make our stay with him as pleasant as possible, and gave us what is not considered on the programme, a trip up to the very verge of the falling waters. Many were the points of interest visited, after which most of the party returned to Toronto on the steamer "Chippewa."

NOTES OF THE CONVENTION.

The eastern contingent are said to have come to the convention well provided with overcoats and mits. The weather, as well as their reception, was sufficiently warm to render these unnecessary.

We are requested to mention that through inadvertence the name of a member of the joint committee on entertainment, Mr. M. P. Huffman, was omitted from the invitations to the banquet and excursion.

After Mr. Hughes had delivered a somewhat lengthy speech in French, much to the amusement of the delegates, Mr. Burroughes suggested that they have it phonographed; in order to give the members an opportunity of studying it.

Many enquiries were heard regarding the welfare of the Hamilton association. Strange as it may seem, a representative was not present at the convention. Probably the new president will be successful in inspiring new life into the members.

It speaks volumes for the energy of the maritime province representatives that they should travel over 1,000 miles to attend the convention. However, the eastern plumbers have the enviable reputation of possessing a fair share of this world's goods.

Mr. H. W. Anthes, of the Toronto Foundry Co., was an enthusiastic entertainer. He had the pleasure of introducing the New York delegate, in the person of a yellow kid on card-board pinned on his back, on which was the inscription "I'se de New York delegate of this convention. See!"

The Reception Committee, upon whom devolved the work of arranging for the entertainment of the delegates, was composed of Messrs. H. W. Anthes, chairman, A. G. Booth, secretary, A. A. McMichael, W. J. Burroughes, A. S. Purdy, Adam Taylor, Jos. Wright, M. P. Huffman, J. B. Fitzsimmons, and J. H. Wilson.

Mr. Mansell, the new secretary, will of course be expected to maintain the high literary tone imparted to the correspondence of the office by his able predecessor, Mr. Hughes. Mr. Mansell's acquaintance with the classics will doubtless enable him to do this, while no one will question his ability to perform in an equally satisfactory manner the various and arduous duties of the position.

At the banquet probably the speech of the evening

was made by Mr. Edward Gurney. Among other good things he said: "We have had a peculiar experience during the past five or six years. If you go down in the Southern States and throw down a nickel among the darkies, what a beautiful fight you will see. Well, that is just the way with the plumbers. There has been one dollar upon the ground and forty persons struggling for it, and the one who can make the longest and strongest fight secures it. Such has been the extent of competition. In Canada we have scarcely known whether we had a destiny or not. We scarcely knew whether to look to the east or the south, but as the result of late experiences we have ceased to look south and are turning our attention to the Motherland."

Mr. J. H. Doody relates with much relish one of the features of the recent Jubilee celebration in St. John. The city authorities there have had untold trouble with harbor improvements now in course of construction, a collapse occurring after the work was well under way. It was arranged that in the procession there would appear a large dredge drawn by twelve horses and operated by steam. Every time the bucket went down it would contain an alderman on the return trip, an intimation that he had been picked up from the bottom of the harbor, where he was supposed to have been working on the improvements. This was continued throughout the entire procession, and is said to have been thoroughly enjoyed by the spectators who were acquainted with the inwardness of the situation.

WORDS OF APPRECIATION.

Mr. W. S. Williams, Dundas, Ont., in renewing his subscription to the ARCHITECT AND BUILDER, states that he derives much benefit from the journal.

The Metallic Wire & Roofing Co., of Milton, Ont., have their factory in running order for the production of metallic shingles, sidings and tin stampings.

Messrs. F. B. Dakin & Co., Iberville, Que., announce that they have transferred the sales of their sanitary goods to the Sanitary Supply Co., 62 Victoria st., Montreal.

Mr. J. E. Bate, Scotch Block, Ont., reports a very successful season's business in building stone, curbing, etc., shipping to all parts of Ontario from his quarries at above place.

The Mexican Consul-General, Mr. D. A. Ansell, is desirous that Canadian architects should respond to the invitation of the government of Mexico to submit plans for new legislative buildings in the city of Mexico, to cost \$2,000,000 in gold.

The Master Plumbers' Association of St. John, N. B., have elected the following officers: Thomas Campbell, president; Henry Dunbrack, first vice-president; Hamilton Kitchen, Fredericton, second vice-president; Wm. Kiley, secretary-treasurer.

By means of an iron rubbing wheel, tests were recently made in Philadelphia of the wearing qualities of various kinds of flooring materials. India rubber tiling stood the test to the best advantage, showing only 1-64 of an inch wear after an hour's rubbing. English encaustic tile and granolithic were next in point of durability. White and yellow pine were equal in quality, both being superior to oak.

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