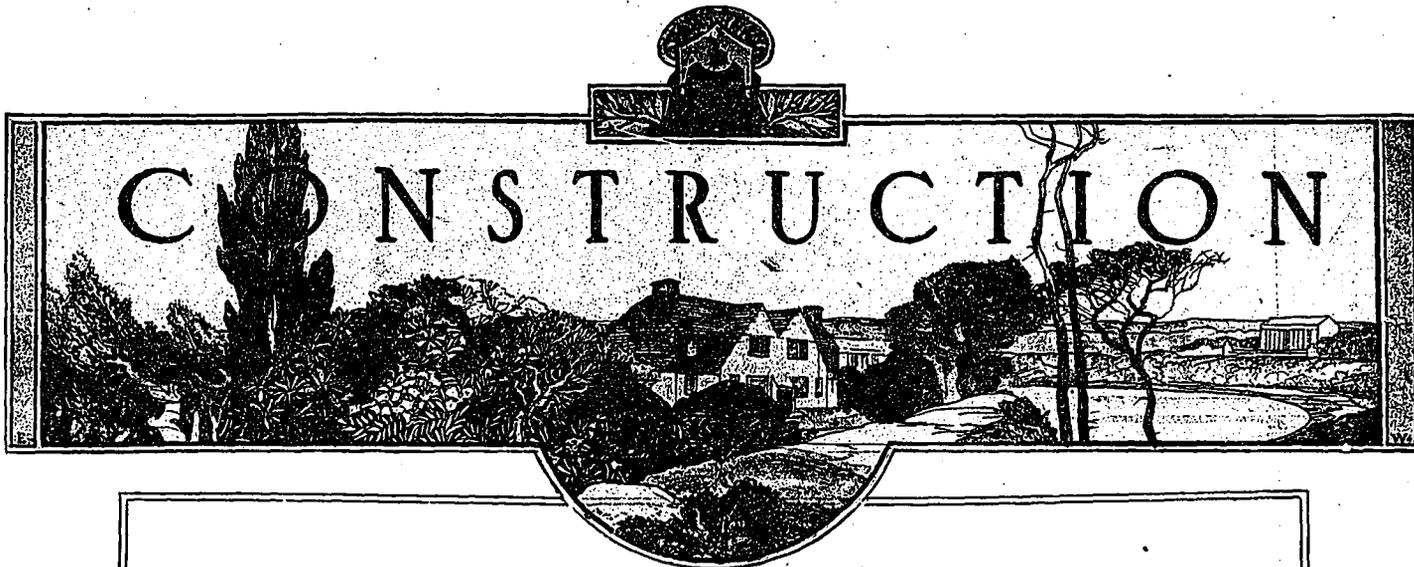


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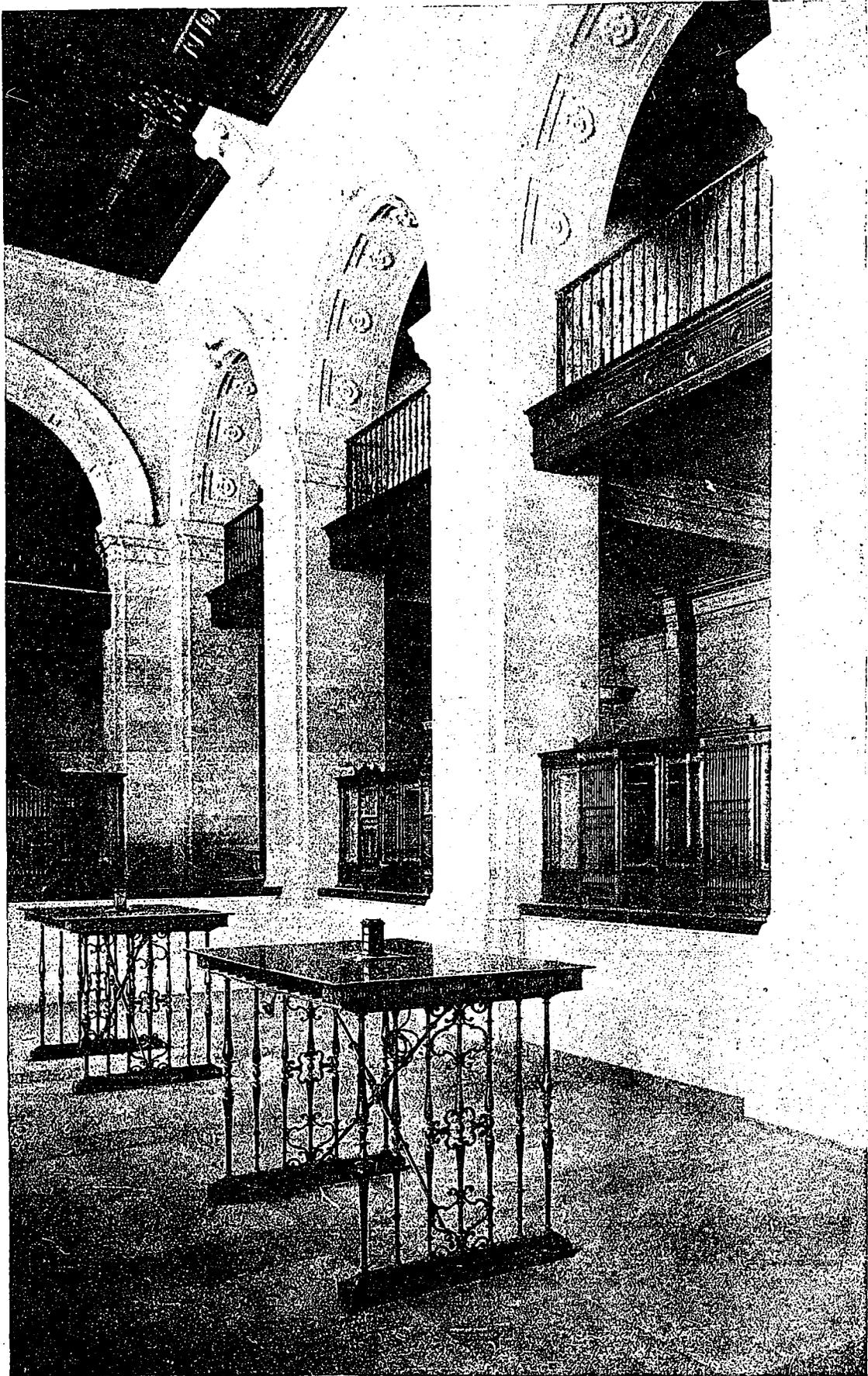
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DETAIL OF BANKING ROOM, BANK OF HAMILTON BUILDING, WINNIPEG 368

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MONTREAL BRANCH OFFICES NEW YORK



DETAIL OF BANKING ROOM,

BANK OF HAMILTON BUILDING, WINNIPEG, MAN.

JOHN D. ATCHISON & COMPANY, ARCHITECTS.

H. C. INGALLS AND F. B. HOFFMAN, JR., ASSOCIATE ARCHITECTS.

Bank of Hamilton Building, Winnipeg

By Prof. A. A. Stoughton, Department of Architecture, University of Manitoba

IN the new Bank of Hamilton Building the task of the architects was to give suitable expression to each of two parts—the office building and the home or workroom of a large bank—of which it is composed, and of harmonizing them in unified composition. This they have done admirably, at the same time solving an even more difficult problem of neighboring the massive Bank of Commerce without being outclassed by the great scale and mass of its colonnade. They deftly avoided any such trial of strength by adopting an entirely different treatment and scale and method of fenestration. No columns occur in the facades. Instead, the wall surfaces are unbroken except by simple openings, and are treated with a square sinkage in the stonework which emphasizes the solidity of the masonry, by a decorated crowning story and cornice, and by a few elegant sculptural accents at significant points.

The upper stories which are given over to offices are indicated by the small rectangular windows, while the bank's quarters are distinctly marked by arcade openings that forms the motive of the high ground storey. The entrance to both parts is through a high arched doorway which is rendered impressive by the simplicity of its treatment, and which is given scale by its delicately detailed bronze grille. This archway with its greenish initial tracery silhouetted against the great blackness of its shadowy depth, and its elegant keystone cartouche, is the feature of the facade; the rest of the wall in being kept simple giving it the fullest effect. At only one other point is a decorative note struck, namely, by the cartouche on the corner bearing the arms of the Bank. The name of the bank appears in bronze letters on the freize over the entrance, while an agreeable effect is given to the wall surfaces by the fossiliferous marking of local Tyndall stone.

Entering, one steps into a square hall flooded with light and walled in Botticino marble and with ceiling of antique gold, which forms a vestibule to the bank as well as to the elevator and stair hall. A noteworthy feature of the scheme here is an elliptical stair leading to the superin-

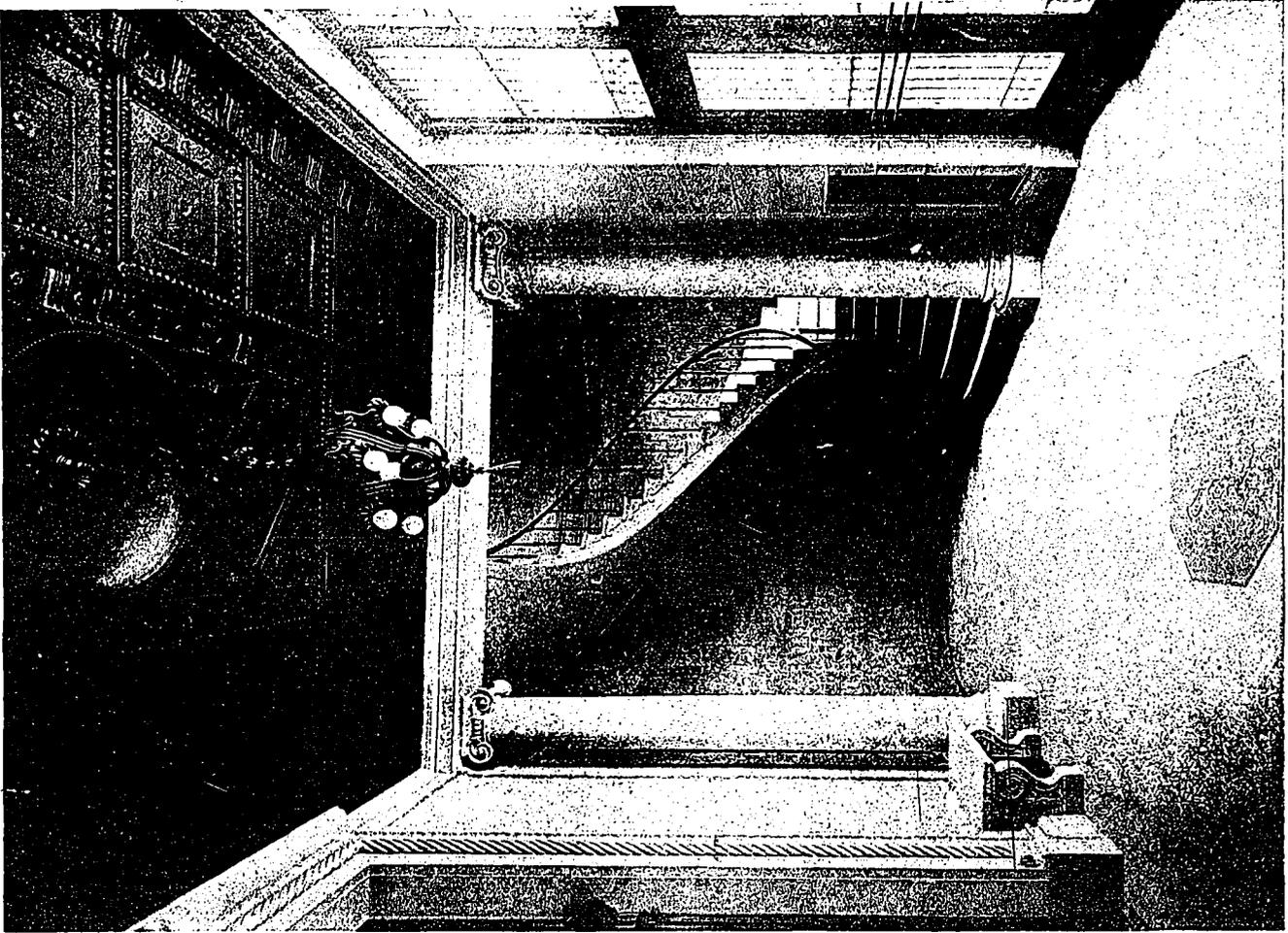
tendent's department, the simplicity of the graceful spiral of the string curving upward without visible support and carrying a light bronze handrail on turned spindles, being a particularly fine achievement. The walls are ex-



BANK OF HAMILTON BUILDING, WINNIPEG.

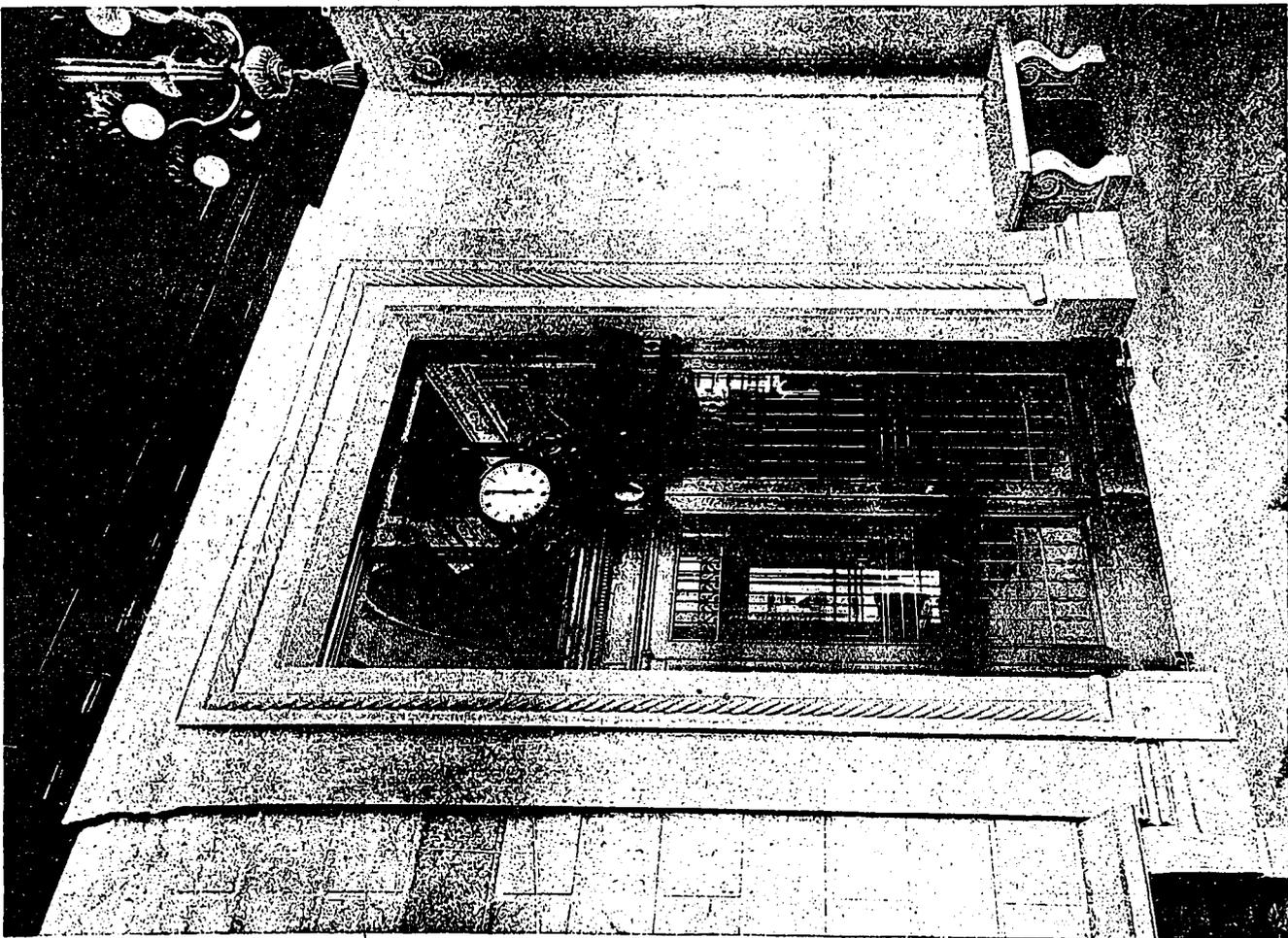
tremely simple and the character of the vestibule worked out mainly with cornice, door and base mouldings, low marble benches, and the ceiling enrichment.

In the banking room the arcade which outwardly expresses this interior so well, continues as the dominating motive of the architectural scheme. It forms the four walls, admitting the north light from McDermott Avenue, and separates the banking room from the alcove spaces in the main storey mezzanine, used for clerks and files and automatic tubes and telephone stations. Altogether the result of this splendid



VESTIBULE, LOOKING TOWARDS STAIRS.

H. C. INGALLS AND F. B. HOFFMAN, JR., ASSOCIATE ARCHITECTS.



DOORWAY TO BANKING ROOM.

JOHN D. ATCHISON & COMPANY, ARCHITECTS.

room quite establishes that an effective treatment is not dependent upon elaboration of workmanship but may be achieved by fine proportions, the discriminating use of features and detail and by emphasis rightly placed. The walls are of Botticino marble, warm grey in tone. The floors of colored marble in geometrical patterns. The moldings are few. There is small use of carving. The note of strong color occurs in the ceiling. This together with the Belgian black marble counter tops, the bronze screens and the dark wood and upholstery of the furniture, gives the room an interest and character relieved of all monotony or greyness. The ceiling is rich and beautiful and has dark beams, supported by marble corbels, and glowing with bright color in varied ornamental patterns, well set off by the dull-greenish hues of the spaces between.

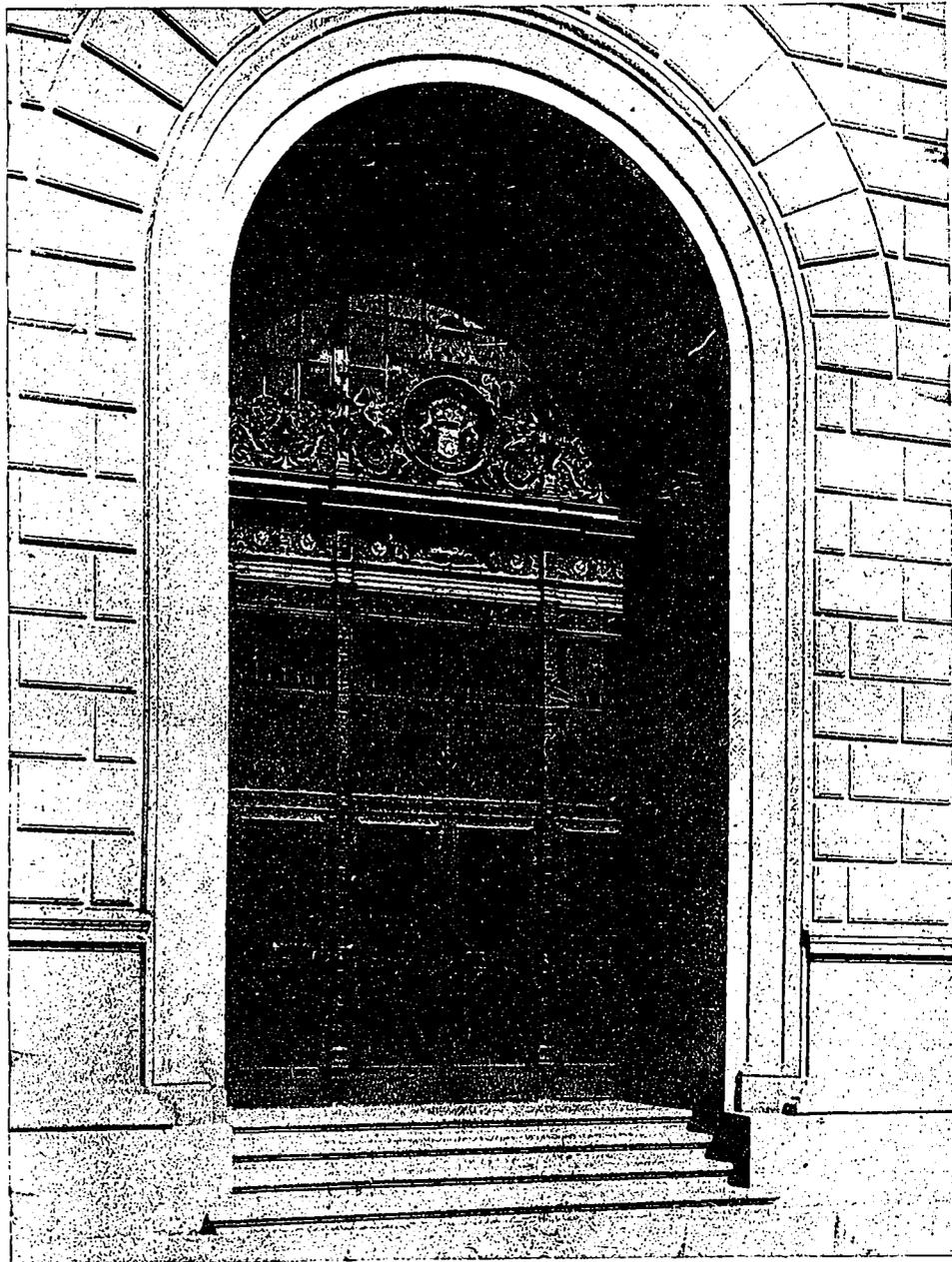
The bronze of the tellers' enclosures, of the mezzanine balcony railing, of the clock over the entrance to the banking room, of the elevator enclosures and easel directory, and of the lighting fixtures, is of the finest design and workmanship, carrying out the character of sobriety and good taste which characterizes the whole building.

The counter screens in the banking room are as few as possible, and except where money is actually handled the counters are low and free of obstruction, and offers the freest welcome to those doing business across them. All the officials, except the manager, have their desks in the main room, close to the counter as one enters, so that anyone may accost them without an intermediary. The managers room is at the front, and is accessible from both the banking room and vestibule.

The mezzanine gallery accommodates clerks and files and other services, while the whole of the second storey is devoted to the use of out-of-town superintendents, except the Main Street frontage, which is devoted to the Board room.

The latter is a well-proportioned Jacobean room, finished in dark oak and richly finished and pannelled to the ceiling which is beamed. The fireplace is in grey stone, and the table and chairs designed in keeping with the character of the room.

The equipment features of the building have likewise been most carefully considered. Inter-



DETAIL OF MAIN ENTRANCE.

communicating tube and telephone systems afford the most direct and immediate transfer of messages and papers from any point to any other. An official or clerk may be called, or put in immediate communication with a customer. Below the stairs there are immense vaults for the safeguarding of money and books and documents, which embody the latest features in scientific protection and control and fittings as well as the uttermost achievement in construction and workmanship. Time locks and a per-



BOARD ROOM: BANK OF HAMILTON BUILDING, WINNIPEG.

Photo courtesy of Travers Sweatman.

fect nerve system of wires, which ring bells in the building and in the street if any part of the locks or bolts are tampered with, guard the treasure. A teller or clerk in event of a hold up can push an emergency button with his knee. Light, but strongly built trucks carry books from the cages to the vaults. A private, automatic elevator at the rear of the building serves all stories of the bank. The lighting fixtures are specially designed and the heating and ventilating system conforms to the best principles of modern engineering practice. In a word of all the manifold appliances and devices that ingenuity has created, the best and most modern have been introduced. The building as a whole, in all its adjustments to special conveniences and needs has been worked out most intelligently and artistically, science and art going hand in hand in devising the arrangements, constructing soundly, and treating nobly all its parts and features.

The structure rests on concrete caissons from four to six feet in diameter, extending to bed rock, a depth from sixty to sixty-five feet. The super-structure is of steel construction protected by concrete and with concrete floors. The exterior walls are all brick and hollow tile faced

with Tyndall stone; brick and hollow tile also being used for the inner walls and partitions.

The entire treasury vault room is lined with heavy steel plates being what is known in the trade as a "laminated steel lining," that is a room made of several layers of steel plates, at least one layer of which is of tempered hardened steel for resisting drills. The various layers of plates are all most carefully laid out, care being taken that the lengthwise seams of them run crosswise to each other in alternate layers; all corners are formed into large "knee sections," and the whole, plates, angles and knee sections are screwed together with hardened drill-proof screws of special make, in such a way that no single screw penetrates all of the layers. The steel work in this particular vault, although not so large in dimensions, weighs over twelve tons.

The entrance to the vault, consists of a heavy steel vestibule, with an outer door, folding inner doors and a steel grille gate for day-use. There are four combination locks and a triple chronometer timelock. This entrance vestibule and doors weighs nine tons, the outer door alone weighing approximately three tons. This outer door is hung on a crane hinge with ball bearings and is very easy to swing to and fro.

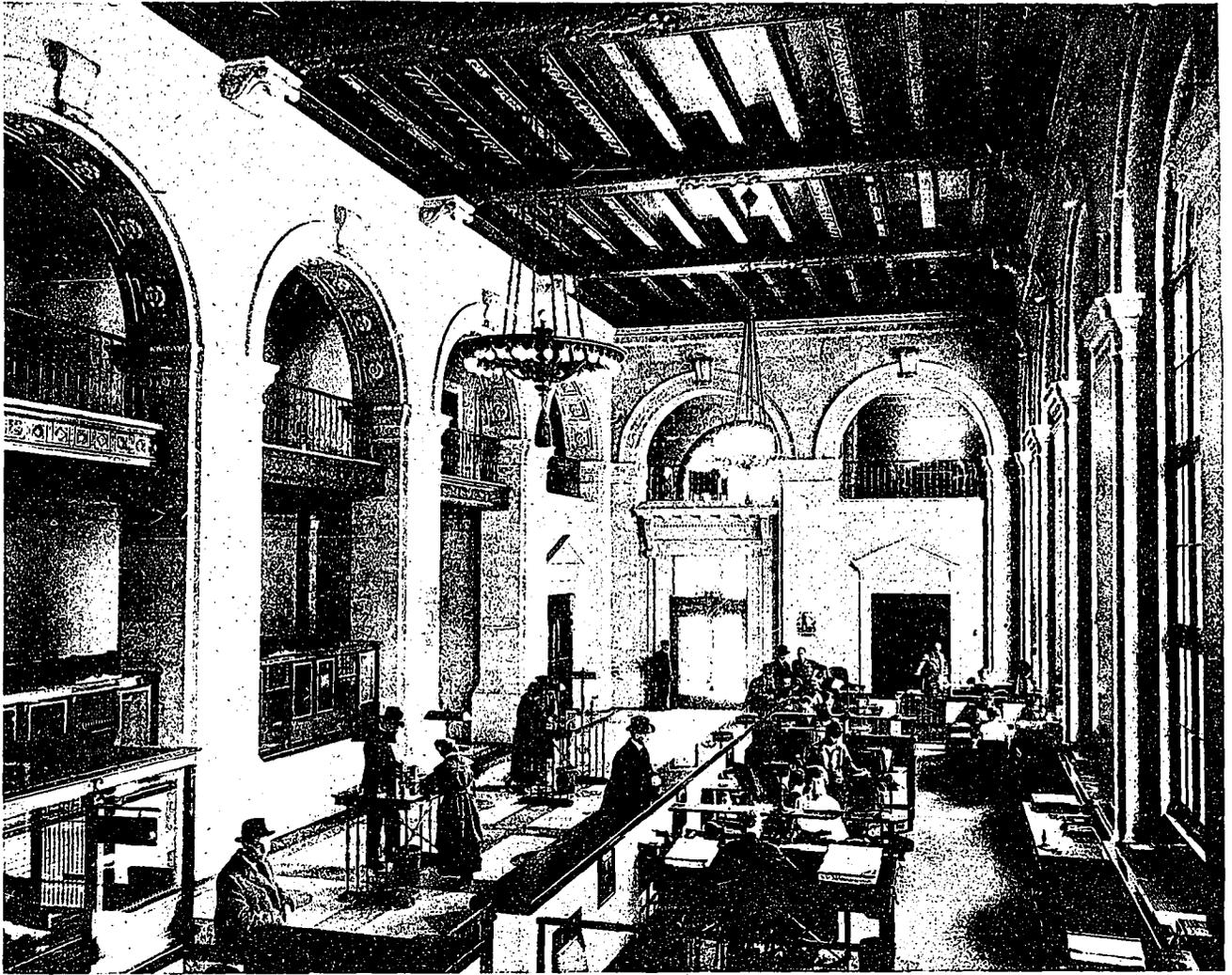


Photo courtesy of Travers Sweatman.

GENERAL VIEW OF BANKING ROOM: BANK OF HAMILTON BUILDING, WINNIPEG.

[CONSTRUCTION is indebted to Mr. Travers Sweatman, a well known Winnipeg barrister, for several of the interior views illustrated herewith. Mr. Sweatman enjoys considerable celebrity as an amateur photographer, having made a successful hobby of this work for a number of years, and his efforts in connection with the Bank of Hamilton Building not only show an intimate knowledge of the camera, but a very sympathetic understanding of its application in relation to architectural subjects.—EDITOR.]

Good and Evil of Window Glass

Window glass is a recent invention, a mere matter of yesterday as we count the life of the race, and it has its bad as well as good points. In fact, there is no doubt that it is affecting our health and our industrial and social conditions very powerfully. So at least says Dr. R. E. Danforth of Rutgers College, in an article on "Window Glass as a Factor in Human Evolution," contributed to "The Scientific Monthly." Dr. Danforth points out that this action, whatever it may be, is recent. Glass is ancient, but not window glass; and the general use of glass

sheets in the windows of ordinary dwellings is a thing of comparatively recent times—probably a couple of centuries. We must realize the benefits and injuries of glazed windows if we are to retain the good while mitigating the evil, as this writer advises us. His article is directed to this end. He says in substance:

"That window glass is a factor of prime importance in the evolution of man has not been sufficiently elucidated. Not that glass has had much to do with shaping his body and brain of to-day—it has not had time to do that—but that the greater part of his activities, and that the bodies and brains of generations to come are and will be greatly influenced by window glass, and that in it are serious dangers as well as boons. The thought is astonishing, yet simple of proof, and clear as the light which comes through the windows in question.

"Before window glass became a common possession of the people there came into homes and shops the air and the temperature of outdoors through the openings which admitted the light of day. The air was beneficial, but the temperature it brought with it not always so. When the outdoor temperature was not too low and the

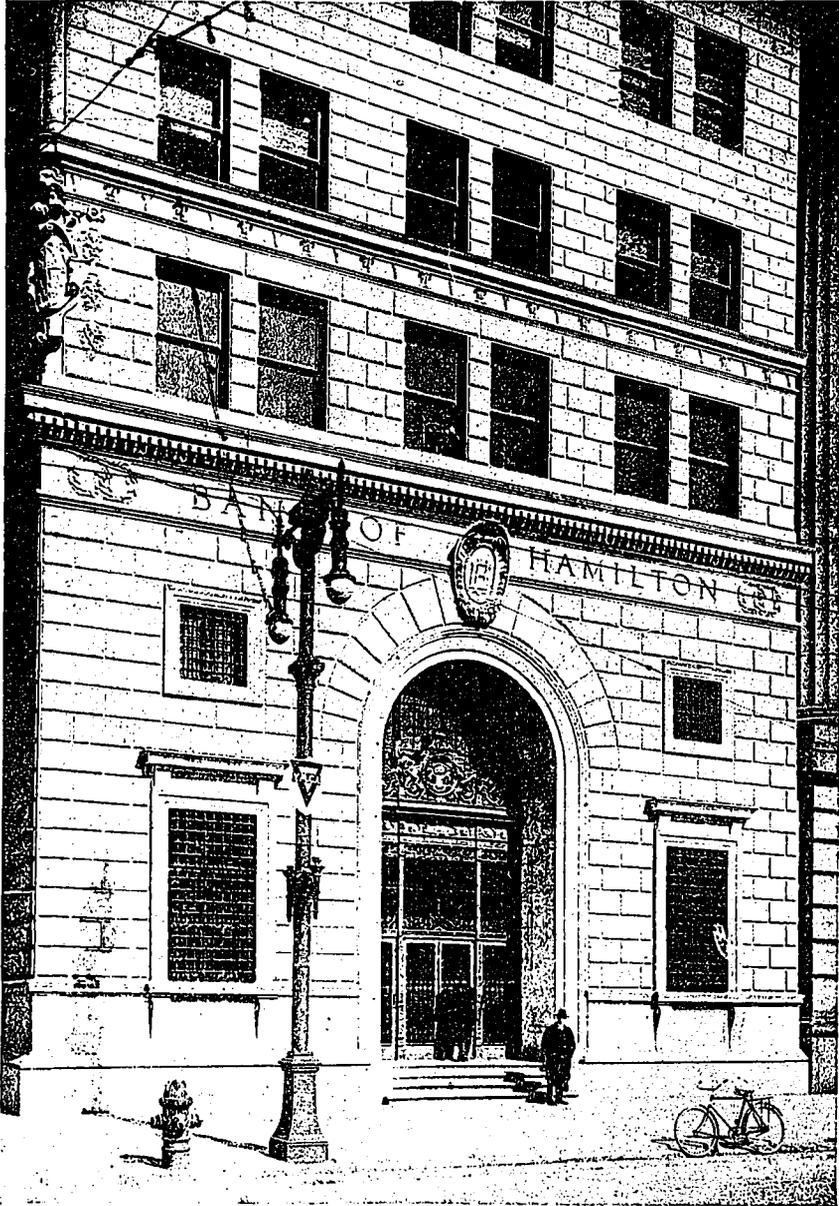
outdoor air not in too great activity, life and industries within could go merrily and well, but let either the air or its temperature be unfavorable, and at once discomfort and a cessation of certain activities ensued.

"Think of the demoralizing effect of such uncertainty upon industry. Modern inventions

the Egyptians. How then can we attribute our very recent and radical changes to window glass? It is indeed surprising to think how new is the general use of glass in windows when the substance had been known so long and used for vases and gems and, now and then, in some sort of window. The common people, however, had no such luxury in their homes and shops. Recent explosions in New Jersey, breaking windows in many hundreds of homes and other buildings, brought home to some for a few days our real dependence upon window glass to-day."

Window glass in Roman times was cast, Dr. Danforth tells. The art of casting glass seems to have been forgotten until 1688. Yet window glass was even then the prize of kings and nobility, and these had only a scant supply. In the time of Elizabeth glass windows were so rare and costly that some noble when he left his city residence had the glass windows carefully removed. In the time of Charles II, glass was not used in all of the rooms of the king's palace. He goes on:

"It seems safe to assume that while many individuals may have had scant supplies of window glass by the middle of the seventeenth century or earlier, the commodity could hardly have been common before the eighteenth century, hence its effect upon human customs, industries and mode of life could not have begun to operate appreciably before that time. The great change in home life and the change in industrial life and in the industries themselves could not begin until an abundance of cheap glass filled all homes with a flood of daylight, and all shops and offices and fac-



DETAIL OF LOWER FACADE: BANK OF HAMILTON BUILDING, WINNIPEG.

could not have come in such marvelous profusion before the day of this one invention of a simple device admitting daylight and excluding to a great extent the outer temperature.

"Even to-day if window glass should become one of the 'lost arts,' a large number of other inventions would at once cease to be useful or be forgotten through neglect, even despite the fact that artificial illumination has made remarkable strides.

"But someone may object: was not glass manufactured and distributed by the ancient Phœnicians? Yes, and probably before these by

tories as well, keeping in the artificial heat at the same time. From that time the outdoor life lost its people while the world of indoors gained devotees, willing or unwillingly, by thousands of thousands. A host of new industries sprang into being in the wake of window glass, and these begat other industries, scientific inventions and discoveries with magic rapidity. Large factories were made possible, big business began and the physical conditions of home life were completely changed. The air which all breathed, in home and shop and office, became at once far less pure, its oxygen was consumed

and it became flecked with fine dust, and the pristine rigors of a temperate climate, with all that they had meant for the rigor of the northern peoples, were commuted to conditions of tropical evenness of temperature with what debilitation such brings and without the constant renewal of air which might be had in the tropics. Although this change came but yesterday, already a marked increase in physical debility in our most 'civilized' populations is a matter of common comment and concern.

"With window glass the habits of life and livelihood are completely changed, habits of thought are revolutionized and the field and scope of thought changed. The whole environment is changed for the species, including temperature, humidity, material environment, composition of air breathed, visual and mental horizons, and a change in the relative adjustments of human beings to disease germs. Such radical changes both within and without the human organism are bound to produce physiological changes in the individuals. They also set in motion new factors in the evolution of the race.

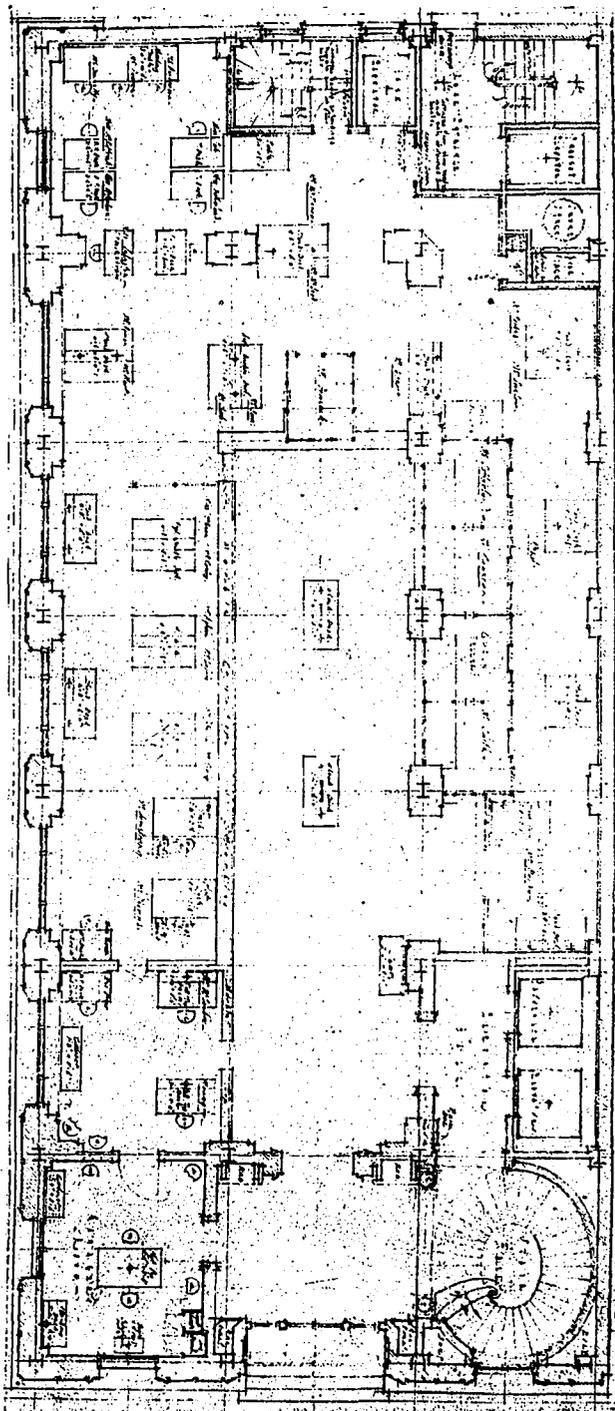
"With window glass man leaves his outdoor or semi-outdoor activity and becomes a modern industrial worker or office server. With a sturdy foundation of outdoor health behind him he may not notice ill effects of degenerating muscles or dust-clogged respiratory tracts, and he may pass on to his offspring for two or three generations a vigorous heredity. The heritage of the ages is not lost over night, yet already we note inroads into the health and vigor of the people. Industries indeed evolved prodigiously, but 'advance in civilization' is not necessarily human evolution.

"How then is window glass a prime factor in human evolution. First, it changes man's environment and changes his field of thought. Second, it alters the temperature and humidity of his environment. Third, it gives him air of a different quality and composition to breathe. Fourth, it compels him to inhale fine dust constantly. Fifth, it removes outdoor activity from all women and most men in 'up-to-date' communities. Sixth, the germ content of the air in confined buildings is greater than normal, especially so in times when colds and other infectious diseases abound. The more frequent illnesses result in impaired health and reduced vigor. The inferior air also reduces vitality. The inhaled dust clogs minute bronchioles and alveoli of the lungs, causing thousands of cells to toil constantly to ingest foreign and insoluble particles. The muscular degeneration consequent to the changed manner of life will make its permanent change in the race of to-morrow; so will the reduced vitality resulting from the causes just mentioned. Great care should be

given to the subject of window glass, that we may see to it that we reap the blessings it brings with it and avoid the bañe."

Color in Modern Roofing

Color used in an architectural way has not met with wide approval by Americans, simply



GROUND FLOOR PLAN: BANK OF HAMILTON BUILDING, WINNIPEG.

because it has been so seldom used artistically, states a writer in a recent *Touchstone*. Some architects advancing with the courage of explorers into this field of introducing color in domestic architecture have used shutters of

bright colors, chimney pots equally gay, and painted the tubs in which grew decorative trees, and has even given the roof mottled tints of autumn. Bright colors on the roof give a house a sense of cheer when rightly applied.

Moss-green tile roofing on a large new house takes away from the glaring brightness and draws the house into harmony with the trees

These can be ordered in groups; for instance, there are various shades of brown or of green which were stained or fired with the direct purpose of associating them. A roof all in one tone is heavy and monotonous. It lacks life and looks woefully new. Therefore many roofs of shingles nowadays are laid in different tones. If the roof is to be green in effect, three kinds of shingles are

dipped in a green preservative shade, and each wood takes the stain differently, so that the roof at once shows the modulated softness generally found only in the old roof. Tile, whether flat (shingle shaped) or half round, comes in every shade of brown or red found in autumn foliage. They may also be had in all the tones of green found in spring and summer. Occasionally a blue or a yellow, or even a mauve tile is introduced when the roof is being made, just to give life.

Colored tiles set above the doorway, beneath the eaves as medallions, above or beneath windows, in the vestibule floor, in terraces, are exceedingly effective when the house is made of hollow tile, stucco or brick. In a house of wood, color is gained by staining the blinds, the roof beneath the eaves, or the ceiling of porch.

Standardized Stone Blocks

Of the three chief building materials, brick, timber and stone, the latter may be said to be the only one that has not been largely standardized. According to the "Building World" of London, however, stone construction at last seems to be going the way of the rest. As an instance it points to an English concern at Corsham Bath, which is making great efforts to standardize stone blocks, so that stone may take its place as an economical material for housing schemes. The company in question, after much de-

liberation, has decided on a standard size of stone, 2 ft. 3 in. long by 6¼ in. wide by 4½ in. thick. This size is convenient to handle, and may be carried or laid by one man, and the dimensions are suitable for bonding with any brickwork used in the construction. Special machinery has been laid to cut the blocks, and as they can be made largely from pieces of stone

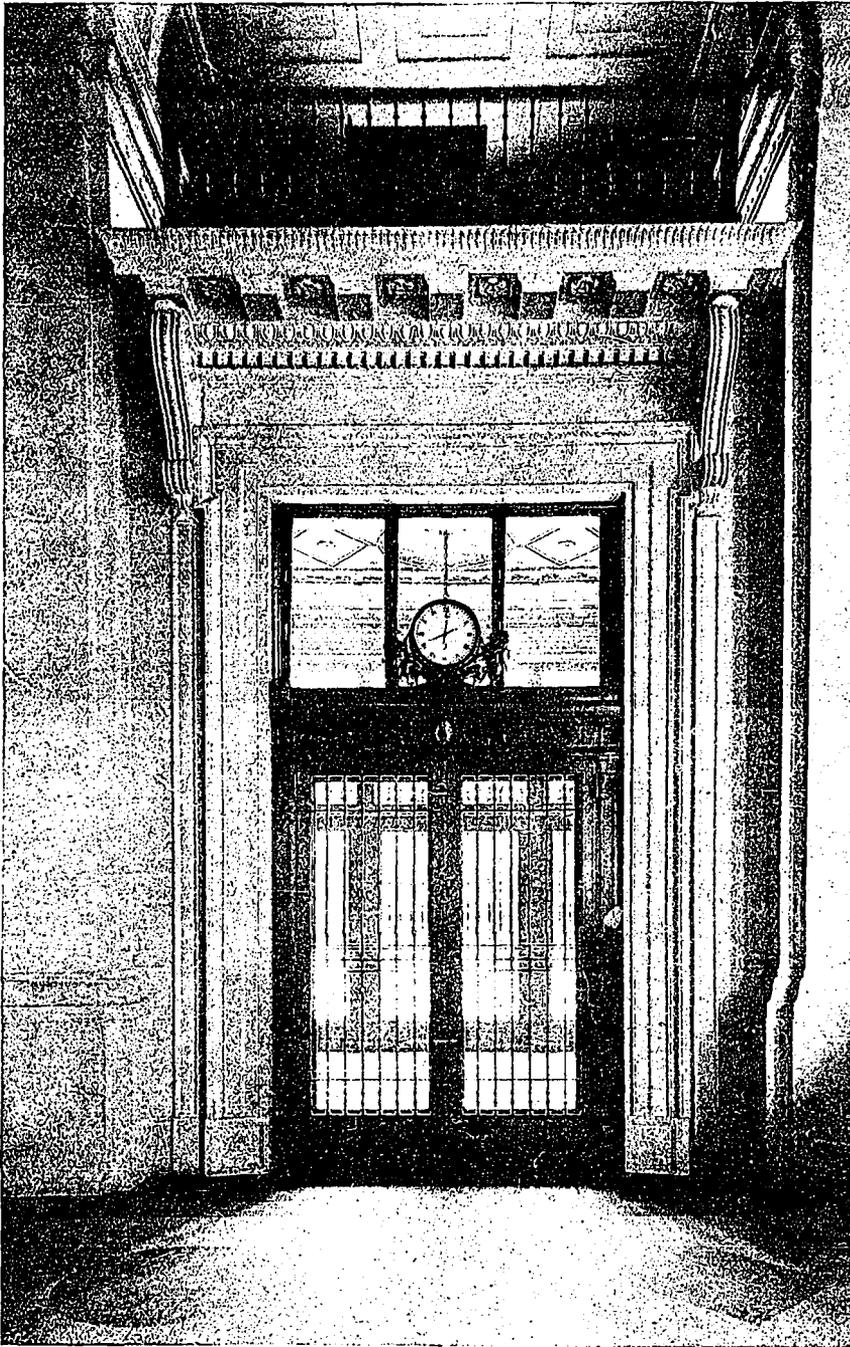


Photo courtesy of Travers Sweatman.

VIEW OF DOORWAY FROM PUBLIC SPACE: BANK OF HAMILTON BUILDING, WINNIPEG.

and garden. A dull red Spanish tile is the only proper roofing solution for the Spanish and Moorish type of house. It is out of place on a small English cottage. Manufacturers have become aware of the growing liking for color and have placed on the market a number of roof coverings, such as tile, asbestos, wood and composition shingles in many varieties of colors.

that would otherwise be wasted it is understood that they can be produced cheaply, and at prices to compete successfully with other materials. The artistic person, our contemporary declares, will raise a cry of lament as he sees the oldest and the last building material to resist standardization gobbled up by the remorseless machine age and turned into standard units as alike as postage stamps. And to this it adds that it is poor architecture which relies for its effect on the irregularity of the mortar joints.

University Course On Housing

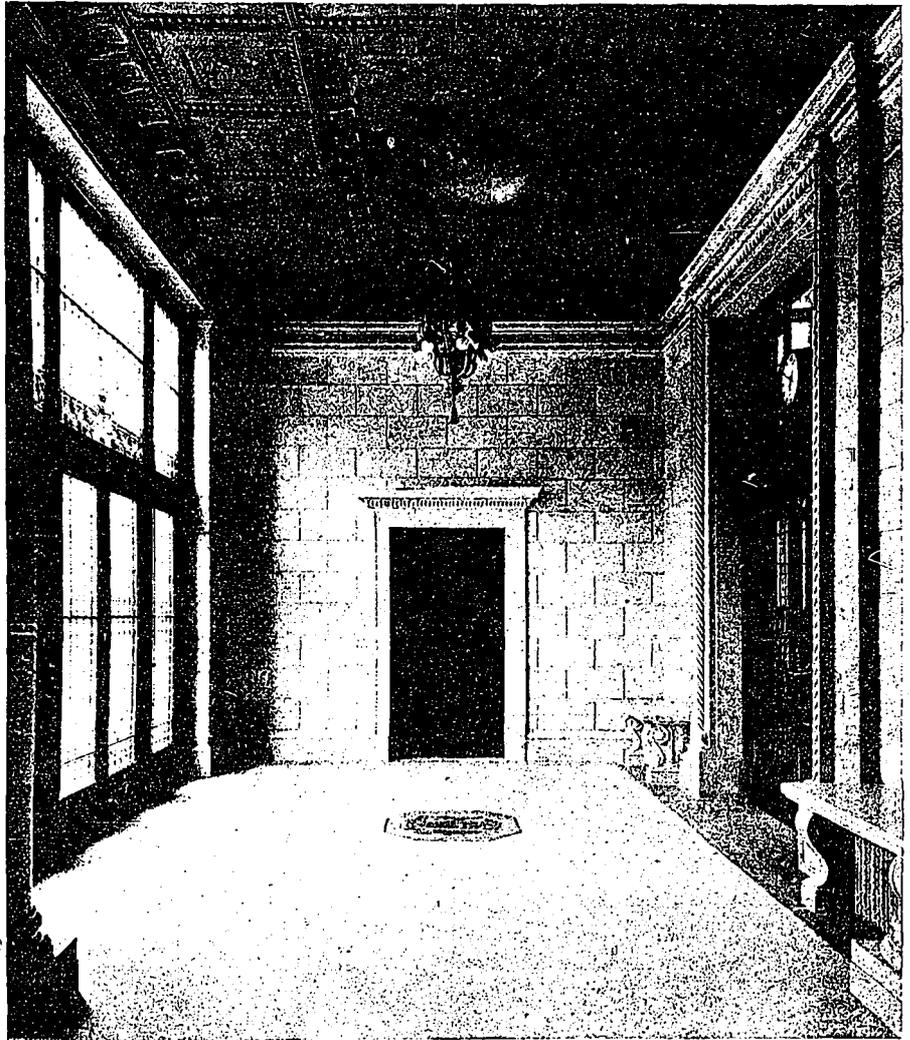
To meet the demand for information and instruction on housing, the University of Cincinnati, through its new Department of Industrial Medicine and Public Hygiene at the Medical College, in charge of Major Carey McCord, has worked out, in co-operation with the Cincinnati Better Housing League, a university course of twenty lectures, covering every important phase of the subject from the growth and history of the housing problem to the Garden City Movement, the Construction of Low-cost Houses for Wage Earners, and Housing from the Real Estate Man's Point of View.

Experts will be called in from various parts of the country to lecture on the phases of the subject in which they are pre-eminent. Among the subjects they are to discuss are: Housing Legislation, Housing of Factories, Co-operative Housing, etc. Advantage will be taken of the fact that Cincinnati has a number of business and professional men and city officials particularly qualified by experience and training to lecture on various topics to be included in the course. Among the topics these men will discuss are: City Planning and Housing, Low-priced Housing for Wage Earners, The Constitutional Aspect of Housing Legislation, The Real Estate Man and Housing, etc.

The course, as planned, including twenty lectures and assigned reading and field work, was inaugurated at the opening of the fall term in October.

To Tax Houses on Basis of Cubage

According to a recent press statement, Assessment Commissioner Stephen Grant, of London, Ontario, will introduce a system of taxation whereby residential property will hereafter be assessed by the cubic foot. It is understood that the assessment will vary from four cents to twenty-five cents per cubic foot, according to the character and structural classification. The assessor, it is said, will use a tape line in



VESTIBULE, LOOKING TOWARDS DOOR TO MANAGER'S OFFICE, BANK OF HAMILTON BUILDING, WINNIPEG. Photo courtesy of Travers Sweatman.

work out his computations as to cubical contents, measuring the height, depth and breadth of the property from the cellar floor to the ceiling of the top storey rooms.

The Windsor (Ont.) Board of Education has completed plans for what it is said will be the largest and best equipped school in Canada. It will be a reinforced concrete and steel structure and cost approximately \$400,000. A feature will be a "community centre," or auditorium which will seat close on to a thousand.

The Architect and His Work

Inaugural Address by President John W. Simpson, of the Royal Institute of British Architects.

IN all the World's history, there has been never an epoch like that to which we are come. Four years of energy and skill have been devoted by the Nations to the work of mutual destruction; and now they see, revealed by the light of Peace, the precipice of ruin to which their struggles have brought them. Aghast at the imminent danger, they turn—still faint and bruised with fighting—to mend the neglected structure of their prosperity, to renew the arrested progress of their social welfare.

In these tremendous circumstances, I invite your attention to the functions of the Architect. Plan—born of the fertile union of Reflection, analysing the conditions of the problem, with Imagination, quick to perceive its true solution; Construction, daughter of Caution, testing the soundness of each audacious artifice. Such faculties, at once quickened and chastened by severe technical training, conduce—as I shall submit—to a type of intellect in the Designer of Buildings which is a National asset; an instrument to be employed to its very limit at this present time.

What is an Architect?

There can be no better definition than that given by the Dictionary of the Académie Française: "the Artist who composes buildings, determines their proportions, distributions, and decorations, directs their execution, and controls the expenditure upon them."

First then, foremost, and above all, he is an Artist. And by the term Artist, I understand no more a Painter, or a Draughtsman, than I do an Actor, or—for that matter, a Hairdresser—but that which all who honestly practise those professions would wish to be; delighting in their work for its own sake, yet discontented with it because of perpetual endeavour to reach a higher perfection. Not that fitful dilettante who justifies to himself his idle hours with empty phrases—"a lack of inspiration," or the like—but a man with a life's work before him, and the time desperately inadequate in which to do it. A man of remorseless severity in the standard of his own attainment, insomuch that he shall grudge no expenditure of time and pains to achieve the smallest improvement in his work. One in whose mouth the words "It will do," and "Near enough," are not found; nor will he tolerate them in the mouths of those who work with him.

With such a Temperament, Imagination, an eye trained to the appreciation of Form and Colour, and the rare Creative faculty, endowed with all attributes of the Artist—he is yet but

an imperfect Architect. For to the Artist must be added the Technician, to make the Architect. Of what avail is his gift of Creation, if he have not Constructive Science that alone shall enable the offspring of his vision to reach maturity?

And, what a very mountain range of obstacles now appears between our eager Artist and the Promised Land of his desire. Not seldom, indeed, his heart fails at the steep ascent, and either he turns aside into by-paths which he conceives easier or more direct—or, he becomes fascinated with the very ruggedness of his toil, and remains contentedly constructing, with never a regret for what lies beyond his vision.

The Artist, then, must train his unaccustomed feet to tread firmly the slippery planes of geometry; for he is to be able, you must remember, to delineate Things, not merely as they exist, but as they are to be. Geometer and—that he may calculate—Mathematician, he must still surmount and master the rocky intricacies of the Trades. Mason and Bricklayer shall he become, and Carpenter to boot. The workers in Metal must yield to him the secrets of their Crafts, nor shall he rest till he has explored the whole mystery of Material;—Rocks, and Trees, and the Sand which is by the sea-shore.

Something of an Engineer he will find himself nowadays, being called upon to deal with Steel as a familiar friend; recognising its great possibilities, and—its limitations. He is but a poor designer who shall set aside materials as "in-artistic"; rather should he recognise it as his duty, by masterful handling, to imbue them with beauty.

The study of Hygiene is within his province; for he must be nicely studious in arranging all Sanitary matters, and that not merely as to their general disposal. Judging no detail of pipe, trap, joint, or fitting unworthy of attention, he must narrowly supervise each with the Authority which is born of Knowledge. Upon Climate, Aspect, Rain-fall, Sub-soils, and all matters pertaining to the Public Health, he will be required to advise; and to plan aright the Defences against those insidious, persistent foes of humanity, Sickness and Disease.

Armed, then, with this panoply of attainments, and the vigorous constitution proper for their exercise, yet another gift is needed for his full equipment. The very weight of his intellectual armour may be his disadvantage and undoing, if it be not supported by that solid sense of proportion—those powers of inductive and de-

ductive reasoning—which go to make what is commonly called “business ability.”

And here we come upon our Architect in an aspect quite different from any in which we have hitherto viewed him. An aspect, too, which perhaps most of all differentiates him from his brethren who take the Arts for their trade.

For, consider his position who is entrusted with an important work of Architecture, and how his conditions vary from those of the Painter or the Sculptor. These last produce their work, agree to terms of its purchase, and there’s an end to the transaction! A mere matter of interchange so far as finance is concerned.

But the Architect, from the moment the building Contract is signed, is invested with the discretion of an almost unfettered Trustee. Vast sums of money are at his disposition, and are disbursed by his direction. None can tell, till such time as the work is completed and the cost reckoned, whether or no he has wisely and honestly acquitted himself of his stewardship, and obtained full value for the moneys entrusted to him.

A Trustee, did I say? Nay, more; a very Judge. As the Employer lays down his gold, so the Builder bestows freely his work at the word of the Architect, neither doubting but that justice shall be done them. When I think of the unlimited trust and confidence which are placed in us day by day, year by year, by men of opposing interests, strangers moreover for the most part, who know us not at all in private life; when I think, too, that among both small and great, high and low, that trust and that confidence are justified—I profess I am proud of my calling. Mistakes are made, no doubt, “to err is human”; I have known cases of unpardonable oversight—but (I speak of those who rightly bear the title) who ever heard of a dishonest Architect?

To prolong the list would weary you. I could speak of the necessary knowledge of Accounts; of some familiarity with the Law, as it affects the drawing of Contracts, the rights of dominant and servient owners of Easements, the complexities of Building Acts and such like mysteries; of the need that he should be able to express his views with clarity and terseness, whether in writing or in speech; of the Architect as the “Polite Letter Writer,” dealing daily with the correspondence of a Bishop.

You will say—I fear—that my sketch of the “Complete Architect” is but a fancy portrait, that so many accomplishments cannot crowd into the few years of a working life. My picture, it may be, is exactly true of none of us, as we are—I freely disclaim its likeness to the author—but it may stand for all of us—as we would be.

Be this of the Workman as it may be. What of the Work?

It will not have escaped you that, although the quality of Artist stands foremost in the making of an Architect, I have described in greater detail his faculties of Construction and Administration. It is with intention that I have chosen for my discourse these less familiar aspects of our art. To cultured minds, the æsthetics of Architecture are a perennial interest, and, since buildings make appeal to the sense of beauty, the emotions they inspire must form the measure for their criticism. Yet it is seldom realised how much of the greatness of the art of Architecture is due to the severely practical nature of its medium, to the necessity of expressing the artist’s Ideal in terms of cubic Reality. When the enthusiast speaks of it as “frozen music,” he is apt to forget that the freezing inspired, and is the very essence of, the music. For Architecture is, above all, Building; the calculated, right disposition of proportioned solids and voids—in other words, Plan and Construction; not the cornices, mouldings, and carvings which define the masses, add desired emphasis to light and shadow. To create it, no dexterous suggestive sketch suffices; no magic wand, nor lamp, nor potent incantation will raise it from the ground. Patient complex diagrams of geometrical projection, sown with myriad notes and figures, must show how bricks are placed in unseen foundations, and how joints of cunning fashion couple the roof-beams.

But, for all that I have dwelt upon the material, I would not be thought unmindful of the spiritual aspect of our calling. “Morality, in fact, is architectonic; and goodness, for human nature, is the queen over truth and beauty.” I quote from Addington Symonds. “Experience leads me,” he adds, “to think that there are numerous human beings in each nation who receive powerful and permanent tone from the impressions communicated to them by architecture.” Very great, therefore, is the importance of a prevailing standard of good design, of logical, comely compliance with our domestic and commercial needs.

I am not now thinking of great monuments. Placed in the hands of competent designers, the Government Housing scheme may effect ethical results of more value to the nation than the satisfaction of its physical demands. The clerk and the artisan, on their way to the morning train, pass by rows of dwelling-places, ill-planned within, monotonously vulgar without. “One of these days,” thinks our friend, “I will have a house of my own,” and in his mind the house of his desire shapes itself, like to those he daily sees. What an Ideal! Yet how should it be otherwise? The only effective education of

the public in architecture is the object lesson of good design.

All creative art must have a motive. Guadet, in his wonderful "Cours d'Architecture," reveals the basic influence which governs our art, in an illuminating phrase. "The great Architect of a period," says he, "is its social condition; the technician realises, but does not create, the aspirations of his time." Yet, while it remains true that architecture reflects, and writes in stone, the history of its time, the legend is no mere transcript, but a conception whereby the fertilising suggestion is transmuted vitalised, and perfected. Versailles owed its existence to the autocratic splendour of Louis XIV., but the minds that created it were those of Mansard, of Le Notre, and Le Brun.

The pageant of Versailles has passed into the Shades; there breathes no wind of life among the phantoms of that splendid Court; alone, the artists' work remains, immortal. To us—as it did to them—inspiration must come from the living world, from them that are nigh to us, from the resistless, limitless future. For good or ill, the old Order is well-nigh gone; the short retrospect of our own lives tells of a mighty social change, and in the fruition of the new State, Architecture must fulfil its glorious part. "Did you, O friend," said Whitman, "suppose Democracy was only for elections, for politics, or for a party name?" and, "To the men and women of a country, its æsthetics furnish materials and suggestions of personality, and enforce them in a thousand effective ways."

Admitting—as we must—the value of Art to Democracy, its intimate connection with the moral welfare of a people, we cannot but applaud the attitude of H.M. Government with regard to the national Housing Scheme. Despite political reasons for erecting houses with headlong hurry, despite attack by those without knowledge of the prodigious work involved in the preparation of even a moderate-sized scheme (and many are on a scale never before conceived in this or any other country), the Department charged with its administration has steadfastly insisted on standards of sound design and construction. Both the Prime Minister and Dr. Addison have made clear their determination that the land shall not be covered with the abominations of the old-time speculator. Their reward shall be an England of finer instincts, richer for a noble pleasure. Architects—to the surprise of many—are now officially recognised as those most properly fitted to design houses, to plan the lay-out and extension of our cities and towns. We are grateful for that recognition; I do not hesitate to say we are giving of our very best in return.

To those impatient for results, let me say that Economy in building is effected, not by the

omission of ornamental details—and, indeed, it is but a poor design which needs them—but, by minute study of the Plan, and Construction, upon whose importance I have already insisted. "Plan" means far more than the arrangement of rooms; it comprises the scrutiny of every foot of ground, its contours and subsoil, whereby foundation work is saved; it covers the economical disposition and grading of roads, the aspect of each house-site, the water-supply, lighting, drainage, and—in many cases—reasoned investigation of the general and local social problems incident to the formation of a township. "Construction," too, may be but a small thing, in—for example—a cottage roof; but to perfect it, so that wood, slate, lead, and labour may be reduced in each of several hundred cottages, will perhaps need days of work and experiment. And the time lost in preliminary study is regained many fold in the end. To produce in bulk such comparatively simple things as shells needed months of preparation, but, when organisation was complete, they poured forth like water from a pierced dam. So, houses, far more complex constructions than shells, will presently arise as by enchantment; the process has already begun.

Like Religion, Architecture, if it is to profit a nation, must be part of its daily life. It is in Plan that lies the true economy—prevention of waste. Waste of time and energy, wandering about the tortuous passages of tube stations, where lifts are planned remote from trains, and fatuous stairs intervene between them and the platforms. Waste of property, in the squalid hinder-parts of mainline stations, untidy sprawling areas dotted with lamentable sheds, and linked by bridges whose building has darkened and desolated streets of houses; waste which defiles and depresses whole communities. I mention "backs," because Architecture is matter not only, as is sometimes thought, for fronts, but equally for backs and sides; for all, in short, that connotes orderly, cleanly life, and the beauty of efficiency.

My predecessor in this Chair has addressed you in time of War; to me, more fortunate, it is given to take up his arduous duties freed from the obsession of those dreadful days. In opening our first Session since the Declaration of Peace, I welcome and congratulate those members who have served their Country and returned in safety. If I do not at this moment dwell upon our losses, it is not that we are unmindful; we do not forget the gallant comrades who once sat with us. The Royal Institute has had its full share of bitterness.

War, like Architecture, is an Art, and is practised "according to plan." Its principles demand the same insistence on a leading motive,

(Continued on page 396.)

The Surroundings of a Canadian House

An Address delivered by Mrs. H. Dunnington-Grubb before the R.A.I.C. and O.A.A. Convention.

I HAVE chosen as my subject this evening, "The surroundings of a Canadian house," and the chief point which we will have under consideration will be, can we have a Canadian or national style of gardening?

I think that, although my time is short, I will just take a few minutes to quote from that memorable essay of Bacon's, on gardens:

"God Almighty first planted a garden, and indeed it is the purest of human pleasures, it is the greatest refreshment to the spirits of men, without which buildings and palaces are but gross handiworks, and a man shall ever see that when ages grow to civility and elegancy, men come to build stately sooner than to garden finely, as if gardening were the greater perfection."

The late John Sedding, an English architect much beloved—perhaps more artist than architect—said in referring to those lines that, "The praise of gardening can no further go. To say more were impossible; to say less were to belittle your subject."

Now, as you all know, there are two different styles of gardening. There is the architectural or formal style, and there is the landscape or natural style. And between these two widely divergent types we have innumerable shades and gradations combining in varying degree the principles of both.

What is the purpose of a garden? Is a garden to be considered in relation to the house as an integral part of the design which depends for its success upon the combined effect of the house and garden? Or is the house to be ignored and the garden treated as a separate unit?

The formal treatment is the extension of the principles which govern the design of a house to the grounds which immediately surround it. I say "immediately" advisedly.

Now although I am a strong advocate of the formal style of gardening, I believe that the garden should conform to the lines of the house; the garden is after all a setting for the building and many an excellent building has been marred by an unsympathetic setting. At the same time I hope before the end of my address to convince you that the oft-despised landscape school of gardening has given us very much which is beautiful both in our public and private gardens. We owe almost entirely to the landscape school our present public parks. We also owe very much that is beautiful in our private gardens.

I think it will help us to understand these two styles if I take you back a few centuries and

view historically the different agencies which have helped to make the gardens of to-day.

Gardens have ever been associated with buildings, and since we find that ancient Egypt produced the prototype of modern western architecture, we instinctively turn to the East to find the birthplace of gardening. We read that religious buildings preceded secular buildings in ancient Egypt. That is to say, the first buildings of any architectural pretensions were the tombs and temples. Now it was around these temples of ancient Egypt that we find the first gardens of which we have any definite record. Their purpose seems to have been chiefly utilitarian. They were strictly formal, rectangular, conforming to the lines of the very severe and simple buildings which they surrounded. Their purpose might have been two-fold. They were enclosed for the most part by hedges of Cypress. It may have been that these hedges and enclosures were to keep at bay the ever-advancing sands of the desert. Inside these barriers were small, absolutely formal gardens. Green turf, tanks of water, trees, arbors and trellises. The entrances to these temples were marked by sphinxes. Now the gardens, apart from any other purpose, were for the growing of plants to be used in religious ceremonies; therefore one may consider that some simple religious inspiration was at the back of these very early gardens.

As time passed and architecture advanced and there were, in addition to the temples, secular buildings of increasing grandeur, then we have gardens of pleasure in Egypt, more elaborate but still formal and conforming to the buildings they surrounded.

From Egypt the art of gardening spread next to Greece. There again the gardens were chiefly utilitarian. For the most part they were divided between the growing of vegetables and fruits for the purpose of food, and the other portion was very simple; it was formal in its outlay and used chiefly by the philosophers as open-air class rooms and lecture rooms for their students. It was in these gardens that the philosophers trained their students.

There is just one little point I might take time to mention. One feature of early Grecian gardens was the Hermes, the figure of the god of the fields on a tapering pedestal. As we know it now it is in stone. The original ones were carved in wood and were in reality a glorified surveyor's pole or stake, for these Hermes were set at the corners of the fields to mark the extent, and that was the origin of the tapering

pedestal, made in that shape so that they might be more readily driven into the ground.

From Greece gardening spread to Rome and there it reached such a stage of extravagance that it was confined to the wealthy. The Roman gardens were, I suppose, the most extravagant that the world ever had or will have. A voluptuous, sensuous style. However, they are so well known, either by description or picture to you and I will not stop to describe them.

From Rome gardening spread westward and entered Britain at the time of the Roman invasion. Of these early gardens we now have no record whatsoever, but since we know that the Romans built villas in England of a similar design to those built in Italy, although probably less pretentious, we may reasonably suppose that gardens also surrounded these villas of a similar nature to those in Rome itself.

During the subsequent invasions by the barbarians these villas and gardens were all swept away and for a considerable period gardening was almost dead in England. It was only kept alive by the various religious orders. A certain amount of gardening went on in the monasteries and convents, but it was on a very limited scale and the plants grown in them were either for food or for the purpose of decorating the churches. The people of those days lived in castles or walled towns and there was no room within the walls for gardening and it was not safe to do it outside.

As time passed and peace came again to the country we have the beginning of the gardening that we know in England; the old-fashioned manor house garden. We have the manor house type of architecture with its strictly formal garden surrounding it. Now it was the custom in those days for the man who designed the house to design the garden, and it was very successful for that time, because in those days horticulture was in a very elementary condition and the materials to be used in the garden were very limited. Therefore it was not necessary to know very much about it. These gardens were quiet and restful and full of old-world charm. This period I may say is the sixteenth century. We have practically no records of gardens in England earlier than the sixteenth century. As time passed, in the seventeenth century, a change came over the public mind. Plants new and rare were imported from the continent. Architecture was advancing. New ideas had been brought in on gardening from other countries, particularly France, Holland and Italy, and the public demanded something better than it had had before.

It was just about this time, the middle of the seventeenth century, that a very famous school of garden design came into existence. It was a French school, headed by the most famous garden designer that I suppose we have ever had—

LeNotre—who was gardener for Louis XIV. It is interesting to remember that LeNotre began life as an architect but gave up that profession to become a garden designer, and before the French King met him he laid out a great number of very beautiful French chateau gardens. He also went as far as Italy and designed some of the Italian villa gardens, and it was due to some of his excellent work that Louis XIV engaged him to construct the famous garden at Versailles. I do not know how the cost of these gardens compares with those of Rome, but they cost more than anything we have had since the seventeenth century. It was then that gardening reached its zenith.

LeNotre acquired a knowledge of the application of living materials to design. The lack of that knowledge is the reason why it is difficult in these days, when horticultural materials are so abundant, for an architect to undertake the whole work of design himself. Although his academic knowledge of design may be perfect, I think it will be admitted that an architect capable of producing a perfect design for a building, would not be looked upon as entirely efficient if he had no knowledge of the materials of which the building was to be constructed. It is necessary also to have a considerable knowledge of the materials of which a garden is constructed in order to make a successful garden.

There is no reason why that knowledge should be denied the architect, but when I have approached architects on that subject they have said that their training already included about half a dozen professions and they had not time to devote years of study to the knowledge of plants.

I may say here that although a knowledge of plants is necessary in order to design a garden, a knowledge of architecture is also necessary and that is why Le Notre became the most famous garden designer we have ever had. It was because of the architectural training that he had in his youth. It is doubtful whether Le Notre ever came to England. There are some who believe that he went to America, but I do not think he did. However that may be, he trained a great many students, and his students went pretty well all over Europe and laid out gardens in Germany and in England.

Charles II was a very great admirer of the French Court, and wished to imitate it as closely as he could. I do not know whether his wish was humbler, but his achievement in gardening certainly was. He wished to follow the French style of gardening as nearly as possible, and sent his gardener, a very famous man by the name of Rose, to study under Le Notre, and on his return he laid out St. James Park and other large pieces of work in England, including the front portion of Hampton Court Palace, that part which comprises the large semi-circle and

the avenues. That was in the grandiose style of that period.

As time passed a greater formality was introduced into the English garden. In the reign of William and Mary, the King brought over Dutch gardeners from Holland, and the style in England then became more and more formal until it reached a degree of childishness. The hedges were clipped, the evergreens were clipped into fantastic shapes and nothing was allowed to be natural. A reaction was bound to set in. It is commonly supposed that the architectural profession had nothing to do with this reaction. That is to say, there is a popular fallacy which even invades the architectural mind that this reaction was brought about by the uneducated gardeners, but the first man to suggest a more natural style of gardening was Sir William Chambers, who spent many years of his early life in China and was a great admirer of the Chinese style of gardening. On his return he wrote a book on the gardens of the East, and was appointed by George III to be the King's architect and superintendent of the Royal Gardens—a rather curious dual position. As Superintendent of Gardens he constructed Kew Gardens, which as you know are entirely in the informal natural style. His own particular impress is left there in the form of a Chinese pagoda with its appropriate setting. As far as architecture was concerned, I think he was responsible for Somerset House. So that it was actually an architect, and one of considerable eminence, who was the father of the change.

It was carried on by another famous man by the name of Kent, who began life as a coach painter, was taken under the patronage of a well-known architect and in due course became an architect himself. I think a great many must know the name of Kent, because it was said of him that he "Leaped the fence and saw all nature to be a garden." He swept away the old formal hedges, fences and walls, he levelled the terraces and brought the turf in great sweeping lawns up to the house walls. His work was carried still further and in a much more extreme form by a man named Brown. He was called "Capability" Brown, because whenever he was called in to give advice he always said the place had no capabilities. A great nobleman asked him to make a report on his place; he came and went, but did nothing, and after some little time he was asked why nothing had been heard from him. His reply was, "Oh, the place has no capabilities. I can do nothing with it."

The next school went to the other extreme from that of formalism; disregarding the building entirely and thought only of imitating nature. In fact, they carried it to a much more childish extreme than the formalist had done with his clipped yews and peacock evergreens and the like; for the new style of gardening

very often included such things as ready-made imitations of nature, such as a dead tree set up in a park by way of making it look natural.

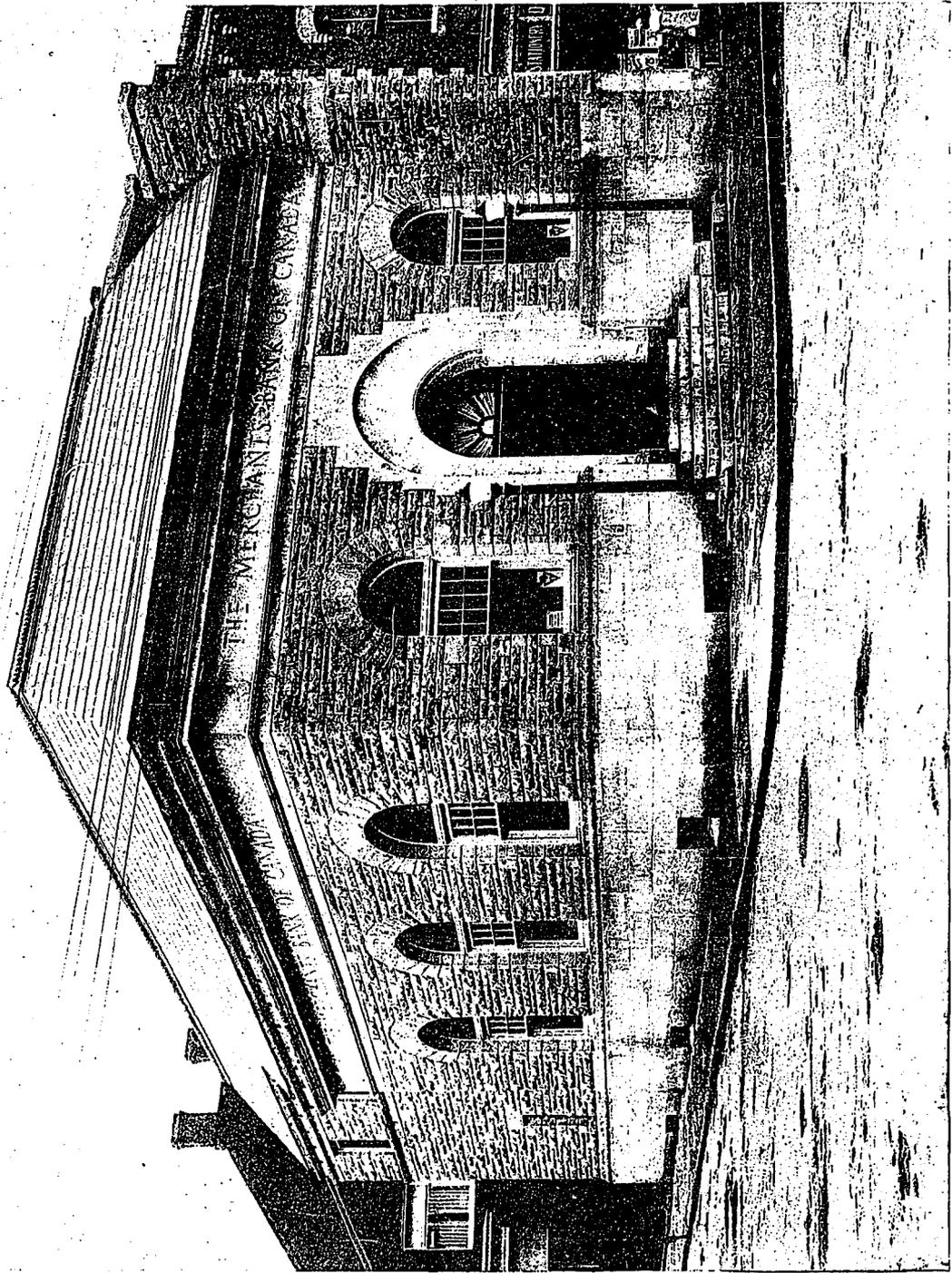
The next great name among gardeners is that of Humphrey Repton, who, unlike "Capability" Brown, was a man of considerable culture. Brown began as a kitchen gardener, quite ignorant, but rose to a great height in his profession and became a very rich man. Repton, as I say, a man of culture; he was much more moderate, much more restrained in his views than his predecessors of that particular school, but he was of the landscape school. There is not the slightest doubt that the landscape style of gardening which is in existence in the United States today, was the direct outcome of the influence of Humphrey Repton.

Now, in considering formal style, which is sometimes looked upon as the highest form of garden design, we must go back a few centuries—say the 17th, or early 18th century. In looking at any of the old chateaus we will find that not only the garden itself, that is to say, the garden immediately surrounding the house, was an extremely formal one, but what was known as the greater layout, or what we would now call the park, being a portion which was beyond the garden proper, was also formal. It appeared as long single or double avenues of trees, running for miles sometimes in straight lines, out into the country, and between them were open grazing areas for deer or cattle. They were very formal. Now the landscape school has given us the natural park that we have to-day; the trees arranged with such skill as to appear like the trees of wild or natural scenery.

Now, while I am sure that almost anyone will admit that the ground immediately surrounding the house should conform to the lines of the house, there is a limit beyond which we should not go with formality. Immediately we get away from the immediate vicinity of the house, we can allow ourselves a little more latitude and adopt a more natural style which will gradually bring the surrounding country into harmony with the garden proper and the house.

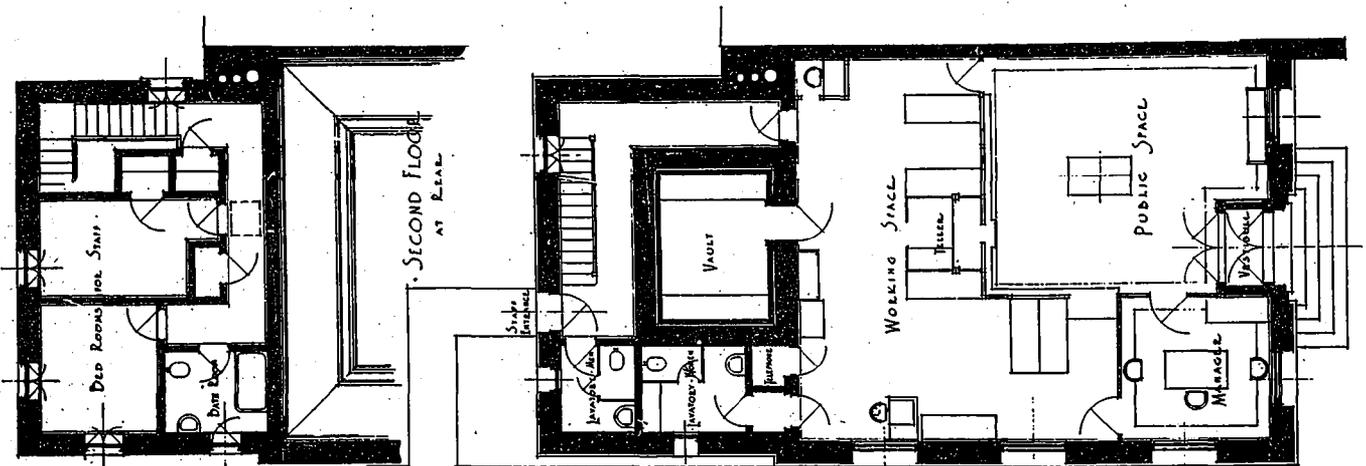
Sometimes people say to me, "Can we have a Canadian style of garden?" It is the same thing as saying, "Can we have a Canadian style of architecture?" Since gardening has always been historically associated with buildings, we see that the traditions of gardening go right back to the very earliest of times, almost to the prehistoric. Now, we cannot start a new Canadian style of architecture. It is not desirable that we should. We look around the walls of this Exhibition and we point to one design and say it is a very good example of the Georgian; we point to another and say it is a very excellent example of classical work, and the like. We are proud to think they are so good and we do not

(Concluded on page 390.)



BRANCH OF MERCHANTS BANK OF CANADA, GEORGETOWN, ONT.

SHEPARD & CALVIN, ARCHITECTS.



GROUND FLOOR PLAN.

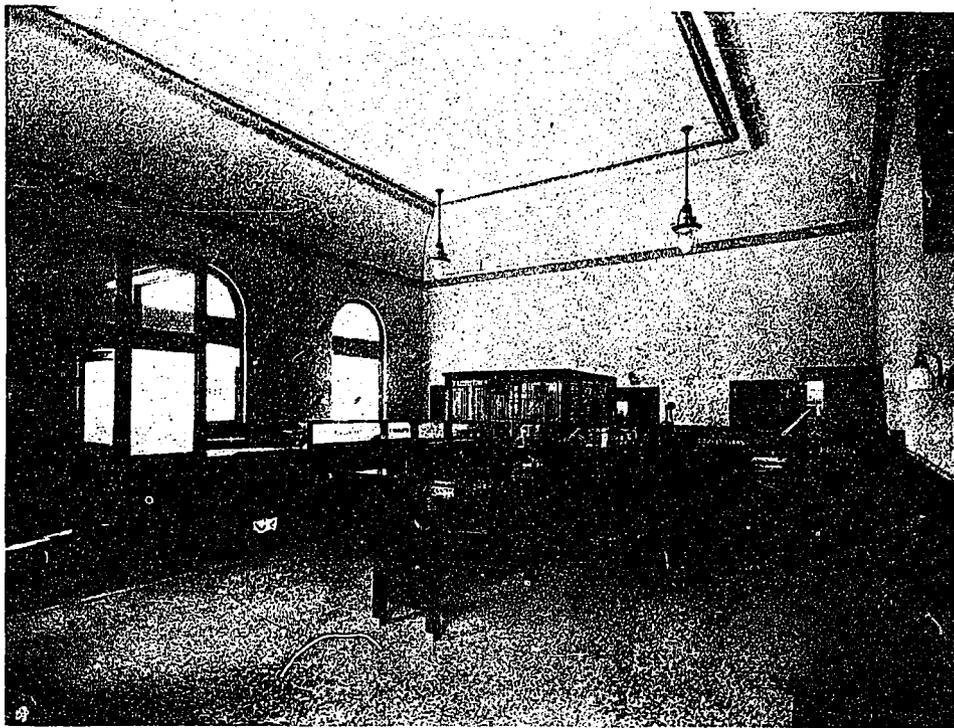
New Branch Buildings for Merchants Bank

NIAGARA FALLS, ONT.

The Merchants' Bank decided early in 1918 when buying a site in Niagara Falls, Ont., for permanent quarters, to provide for considerably more accommodation than was immediately needed. Consequently a lot 50'x120', northeast corner Queen St. and Ontario Ave. was bought, but as shown by the plans, only about 27'x65' is being used as a bank office, for the present; the remainder of the ground floor being used temporarily as an L-shaped shop. The elevations as well as the interior work, are so designed as to allow of taking over all or part of the shop space into the Banking Room, when desired, with a minimum of disturbance. Upstairs are two staff bedrooms and a bathroom, the rest being laid out as offices for rental. In the basement is the usual mechanical equipment; heating is by low pressure steam.

The exterior is of dark buff rough textured brick, upon a base of dressed Queenston limestone, the cut-stone work is buff Indiana limestone. Under the upper cornice are two courses of enamelled brick, green and brown, which give an effective touch of colour, especially at night.

The main floor is fire-proof, long-span combination hollow tile and concrete. In the bank entrance vestibule the finished floor and base are pink Lepanto Marble; in the public space, terrazzo with marble mosaic border and verde antique base. The working space is covered with linoleum. The Bank walls are stucco plaster, left untinted because of the warm colour effect resulting from the local reddish sand. The counters, fittings and furniture are mahogany. Provision is



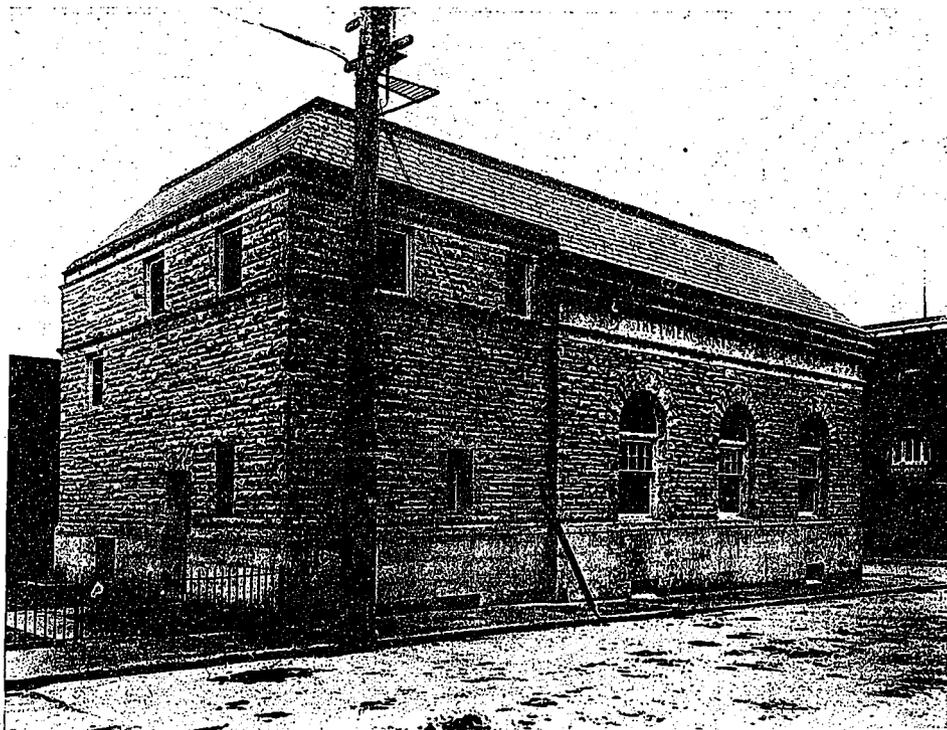
BANKING ROOM: MERCHANTS BANK, GEORGETOWN, ONT.

made for customers having safety deposit boxes in the Bank's vaults.

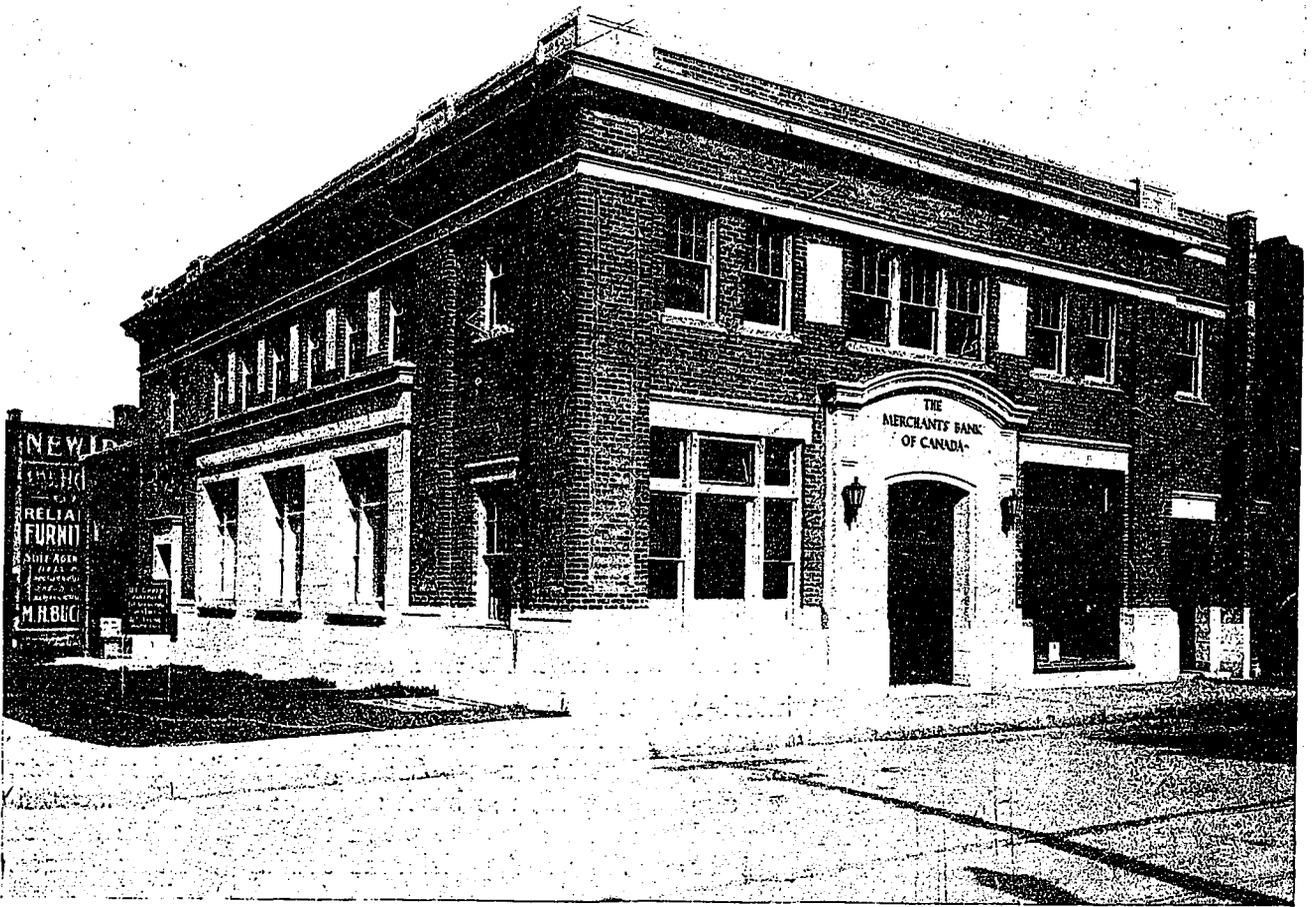
The upper floor is wood joist, maple floor, the trim is birch stained mahogany. The entrance to offices, from side street has terrazzo floor, with pink Lepanto marble border and base. The building with equipment cost about 42 cents per cubic foot.

GEORGETOWN, ONT.

Georgetown being in a district noted for its limestone, it was felt that the new building for



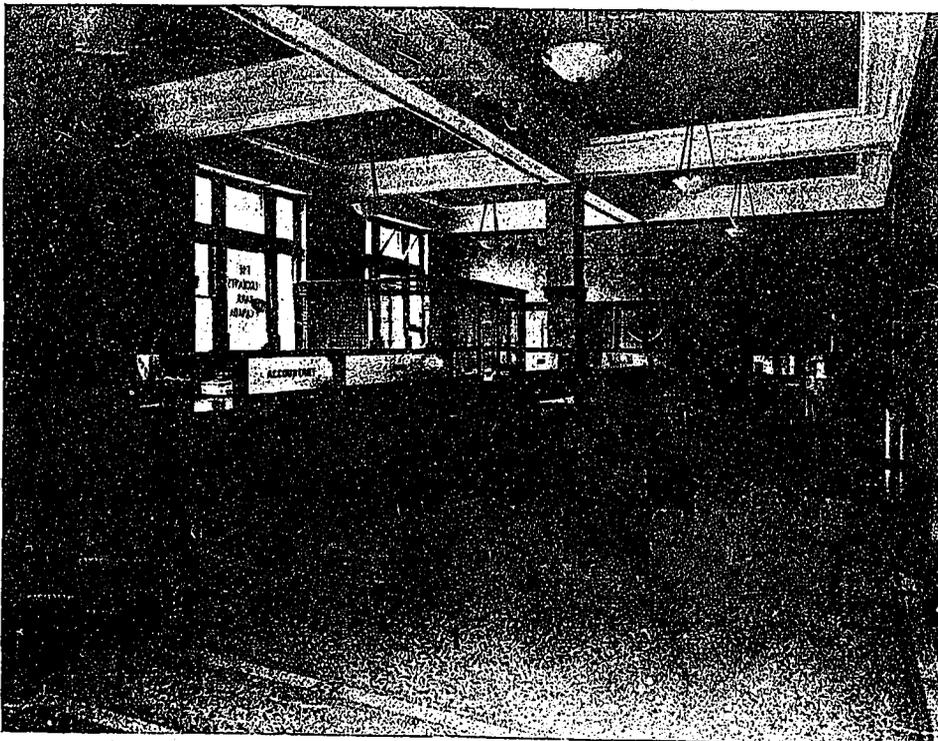
SIDE AND REAR ELEVATIONS: MERCHANTS BANK, GEORGETOWN, ONT.



BRANCH OF MERCHANTS BANK OF CANADA, NIAGARA FALLS, ONT.
SHEPARD & CALVIN, ARCHITECTS.

the Merchants' Bank should be of this local stone, especially because it was to be purely a

banking house, without office space. The exterior shows a dressed stone base with



BANKING ROOM: MERCHANTS BANK, NIAGARA FALLS, ONT.

coursed ashlar walls, of Georgetown stone, the cut stone work, however, being buff Indiana limestone. The sloping roof is covered with green slate, with copper cornice and cresting; the upper roof is flat, felt and gravel.

The main floor is fire-proof, combination long span hollow tile and concrete, the rest of the framing is wood. The whole of the front portion is used for a large banking room, the ceiling height being 19 feet. The walls are stucco, tinted a warm grey. The vestibule has marble floor and base, the public space of the bank has terrazzo floor, marble mosaic border, and verde antique marble base, the working

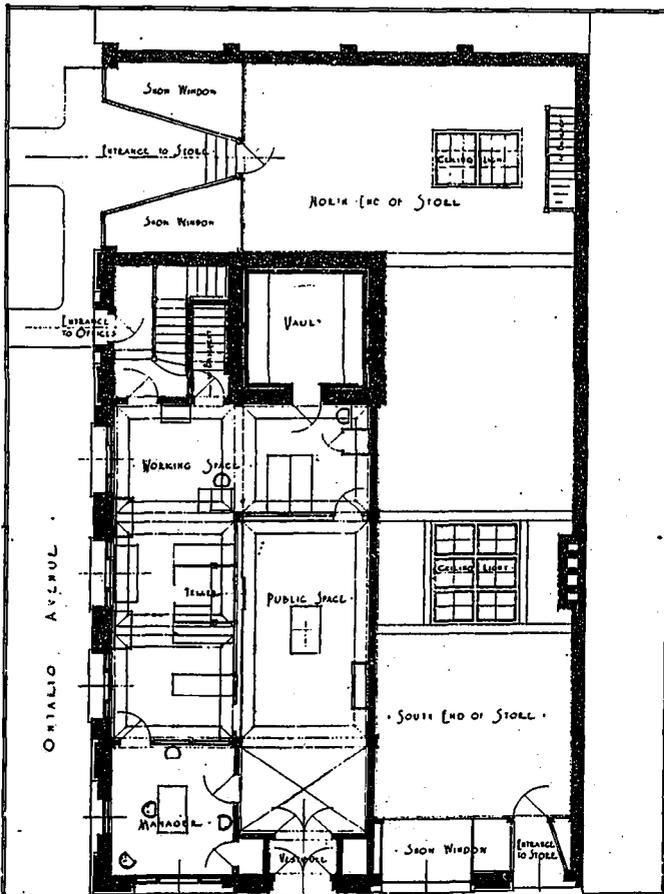
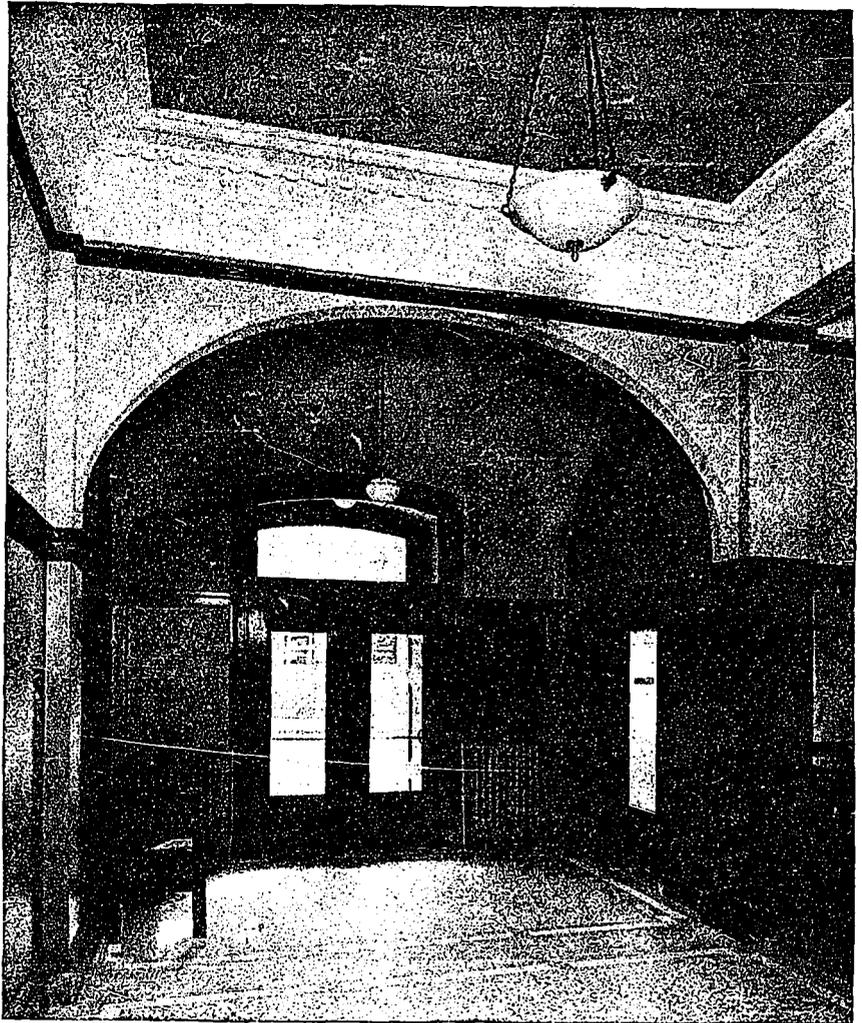
space green linoleum. The bank fittings and furniture are birch, stained dark mahogany. Provision is made for the convenience of safety deposit box customers.

At the rear in a mezzanine are two staff bedrooms and bathroom which were furnished complete under architects' direction. Water comes from the town's water system, but since there are no sewers, a septic tank was installed to treat sewerage before discharging into town drains.

The building proper cost about 40 cents per cubic foot, and complete with equipment about 46 cents per cubic foot.

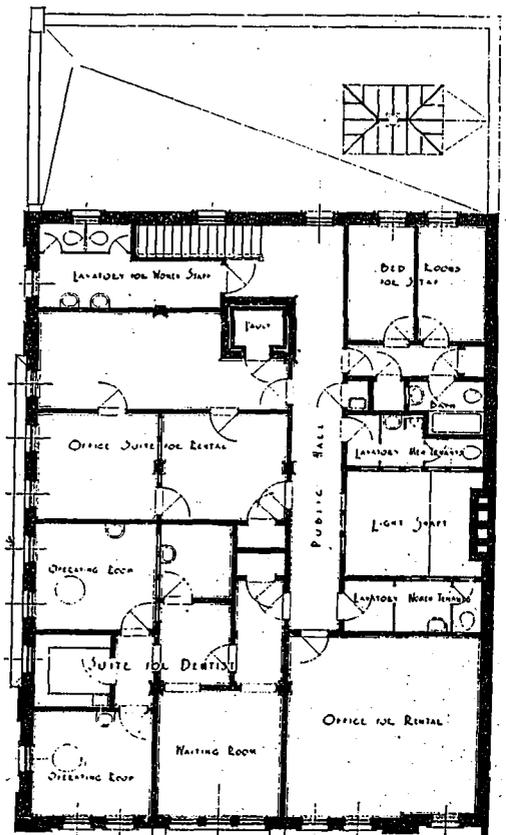
GALT, COLLINGWOOD AND PEMBROKE BRANCHES.

Three other branches for the Merchants Bank of Canada have also been recently built and occupied at Galt, Collingwood and Pembroke, Ontario. Although the character of these buildings and the sizes of the sites differ widely in the three towns, the chief idea followed in each case

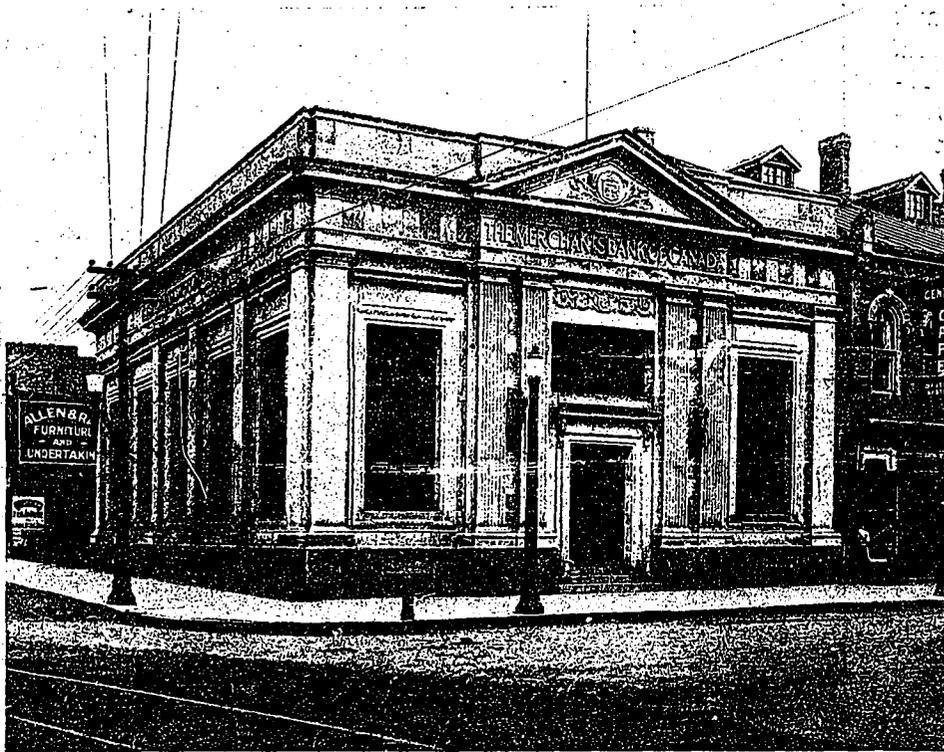


GROUND FLOOR PLAN.

ENTRANCE TO BANKING ROOM: MERCHANTS BANK, NIAGARA FALLS, ONT.



SECOND FLOOR PLAN.



BRANCH OF MERCHANTS BANK, GALT, ONT.

HOGLE & DAVIS, ARCHITECTS.

Bank are low and a one storey building was erected.

In Collingwood the bank owns the adjacent building and by forming a low entrance to its upper floors was able to erect a one storey building, which would not be dwarfed by its surroundings. This arrangement allows of ample height in the banking room and gives an imposing interior.

In Pembroke, owing both to the height of the adjacent buildings and to the fact that there was a particular demand for the office space on the first floor, a two storey building was erected.

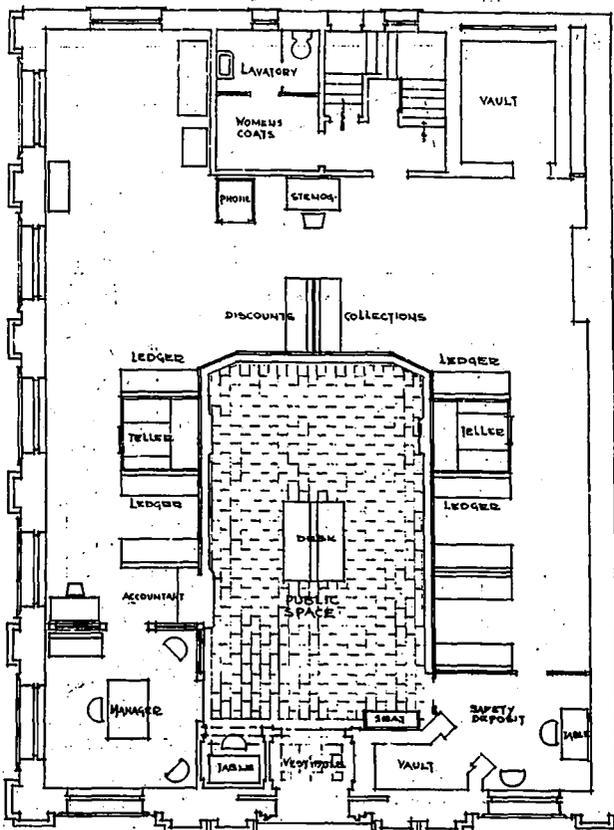
The entrances in each case are placed in the centre of the main front

was the same, viz., to make the banking rooms themselves as large as possible. For this reason the managers' rooms, formed of wooden screens, are part of the main banking room. The staffs' lavatories, etc., take up as little space as consistent with convenient arrangements.

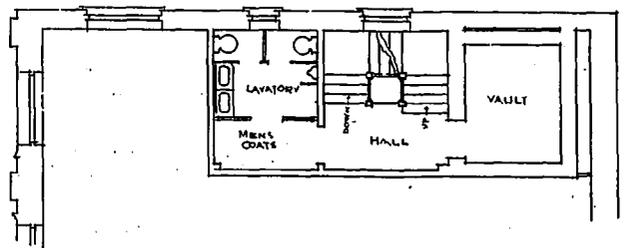
with lanterns at each side to emphasize these entrances. This arrangement allows the well lighted portion of the banking room, next the windows, to be used by the staff.

In the Galt building, the counter is arranged symmetrically on each side of the entrance. The manager's room occupies the corner of two streets and is balanced by the safety deposit

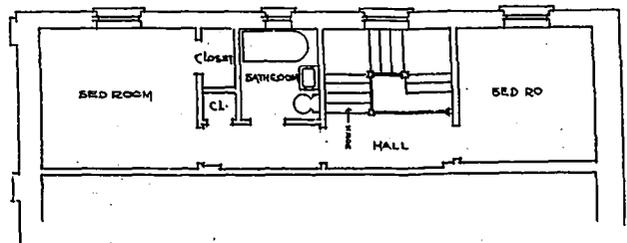
In Galt the buildings adjacent to the new



GROUND FLOOR PLAN.



TOP FLOOR PLAN.



MEZZANINE PLAN.

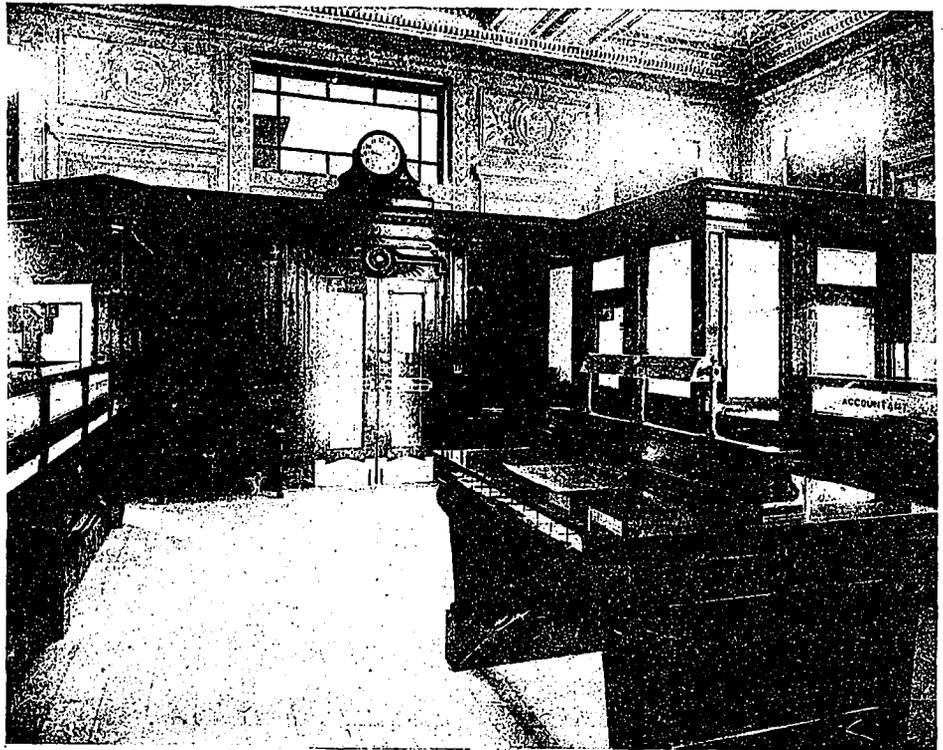
vault and coupon department. The other vaults, stairs, lavatories, etc., are kept back to the rear. There is a mezzanine floor between the banking room floor and ceiling, with a small upper floor above the mezzanine. By this arrangement very little space is occupied on the banking room floor for service; the cash and book vaults and the men and women's coat rooms being on the ground and mezzanine floor, while on the top

floor there are two rooms and a bathroom for members of the staff living in the Bank. The basement is not used except for the heating plant.

The exterior is in Indiana limestone above a polished granite base. The whole of the building is carried out in the late eighteenth century French style. A Doric order is used with a pediment over the front entrance and with architraves and small entablatures above the windows. The entrance doors are formed of iron grilles, sliding into recesses, with a pair of light swinging doors of mahogany and glass behind.

The interior has an enriched plaster ceiling and walls of caen stone arranged in panels with ornament at different points. The floor in the public space is of white Italian marble with a border of verde antique marble around the counter, screen and fittings. The floor of the clerks' portion of the banking room is laid with cork tile. The Manager's screen, vestibule, counter, etc., are of mahogany with enrichments around the panels and doors. The customers' desks are also of mahogany with heavy glass tops. The electric light fixtures are in dull gilt and carry out the French design.

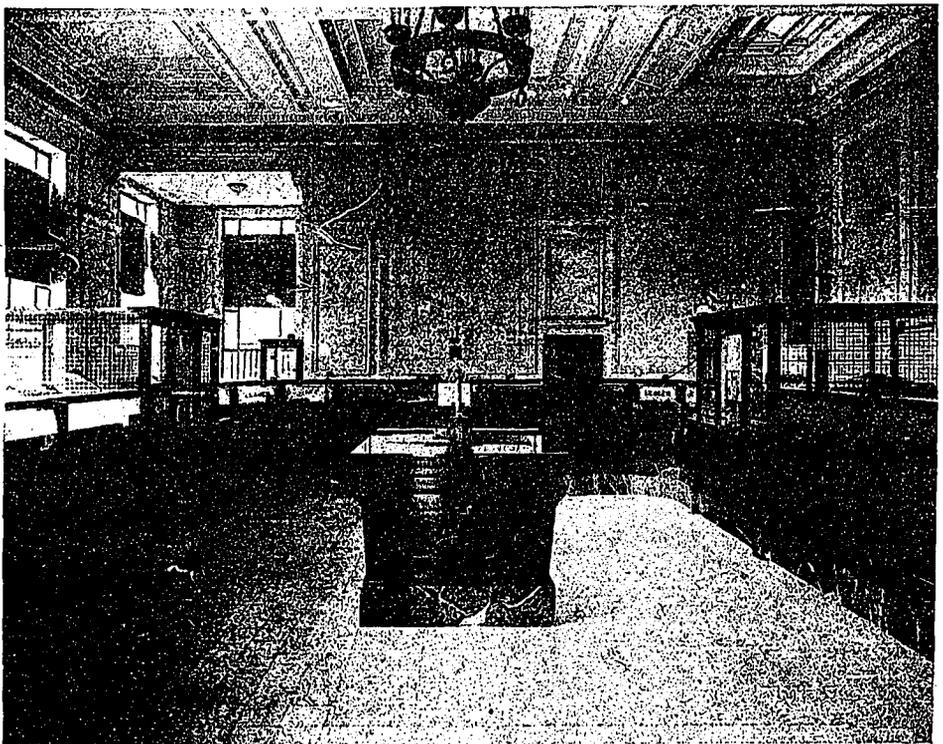
The building at Collingwood is carried out very much on the same lines as the Bank's branch on Harvard Avenue, Montreal, recently built and illustrated in CONSTRUCTION April, 1917. The building is of buff brick with Indiana limestone frieze, cornice, belt courses, etc. The entrance doors are of mahogany with handsome iron grilles set in mahogany frame with large fanlight above. The floor of the banking room is of Tennessee marble and the Manager's screen, counter, etc., are of mahogany. The building has a large cash vault and the men's and women's coat rooms on the ground floor with two rooms and bathroom on the floor above for the



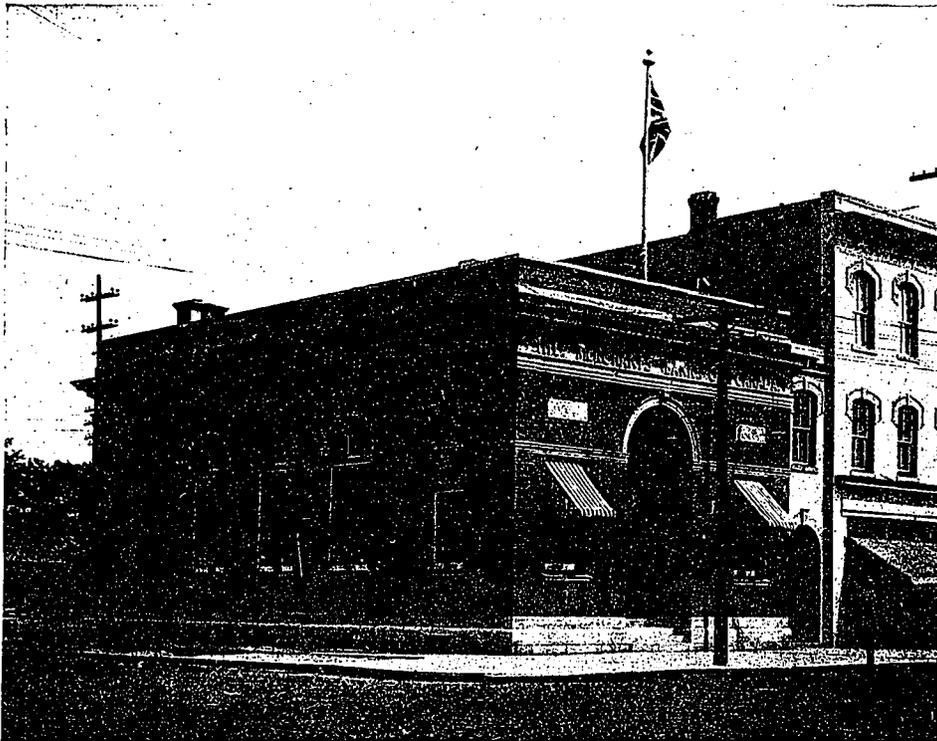
VIEW OF BANKING ROOM, TOWARD ENTRANCE: MERCHANTS BANK, GALT, ONT.

staff. The book vault is in the basement. The ceiling of the banking room is in plaster and the walls of caen stone simply blocked out.

The branch at Pembroke is in red brick with Indiana limestone facing, frieze, etc. The facades show an Ionic order with attic cornice above above. The banking room has a white Italian marble floor with verde antique border, and mahogany counter, Manager's screen, etc. At the rear of the banking room is placed the entrance and stairs to the offices above, and a

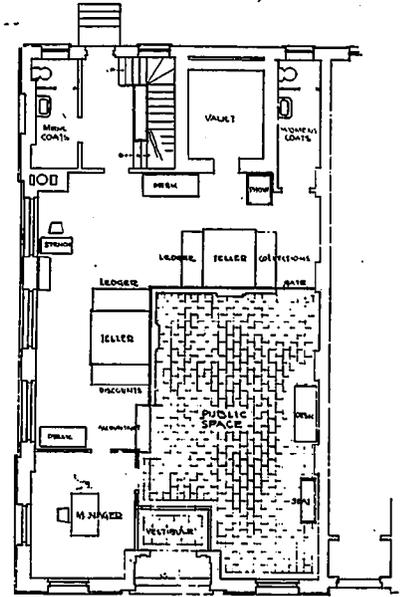


BANKING ROOM: MERCHANTS BANK, GALT, ONT.



MERCHANTS BANK, COLLINGWOOD, ONT.

HOGLE & DAVIS, ARCHITECTS.



GROUND FLOOR PLAN.

small women's coat room opens off the banking room. The book vaults, men's lavatory and a large store room are placed in the basement, reached by a small stair from the banking room.

A hot water system of heating is used in the three buildings.

Surroundings of a Canadian House

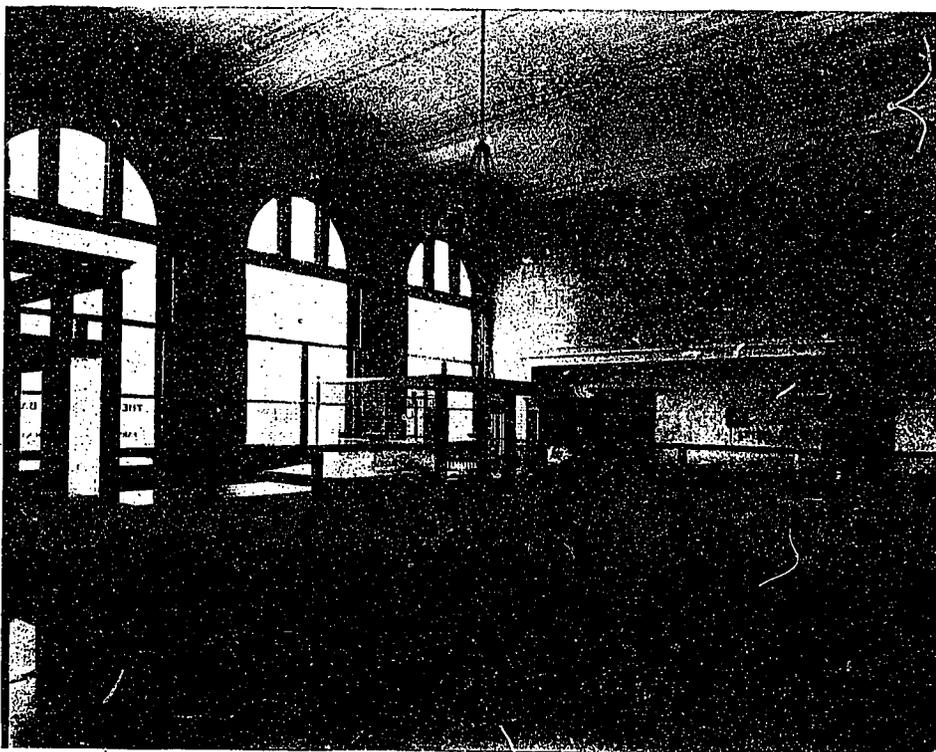
(Continued from page 383.)

want to say it is a Canadian style; we know the tradition that is behind it; we know the work

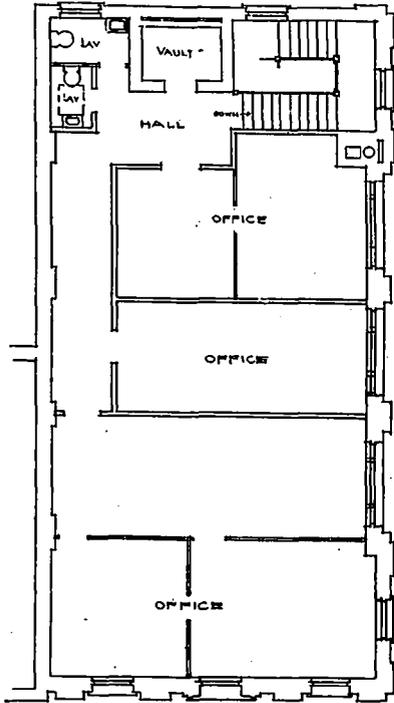
that it represents, the study that has brought it to that perfection. We have modified to a slight extent our buildings and our gardens to suit the climatic conditions, but beyond that it is better that the traditional should be followed than to attempt in one generation anything that is new.

Sometimes people say, "It is all very well to have formal gardens in Europe, but here in Canada where we have these vast forests almost at our doors, we should have a wilder kind of garden layout, a free and open style of garden-

ing." Now, to be consistent, these people should live in mud houses covered with turf. There is nothing in nature which can be imitated to form a house. A building is necessarily artificial, the handiwork of man. It can never be anything else. There is nothing in nature resembling a building. You can bring a garden into harmony with a house, but you cannot bring a house into harmony with a forest or with wild nature. It is, therefore, inconsistent to say, that while we are proud of the advance we have made in architecture, we must go back and have gardens without any design whatever, simply



BANKING ROOM, MERCHANTS BANK, COLLINGWOOD, ONT.



UPPER FLOOR PLAN.

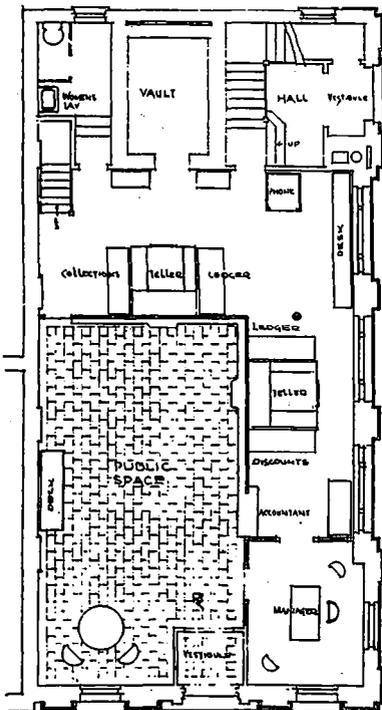


MERCHANTS BANK, PEMBROKE, ONT.

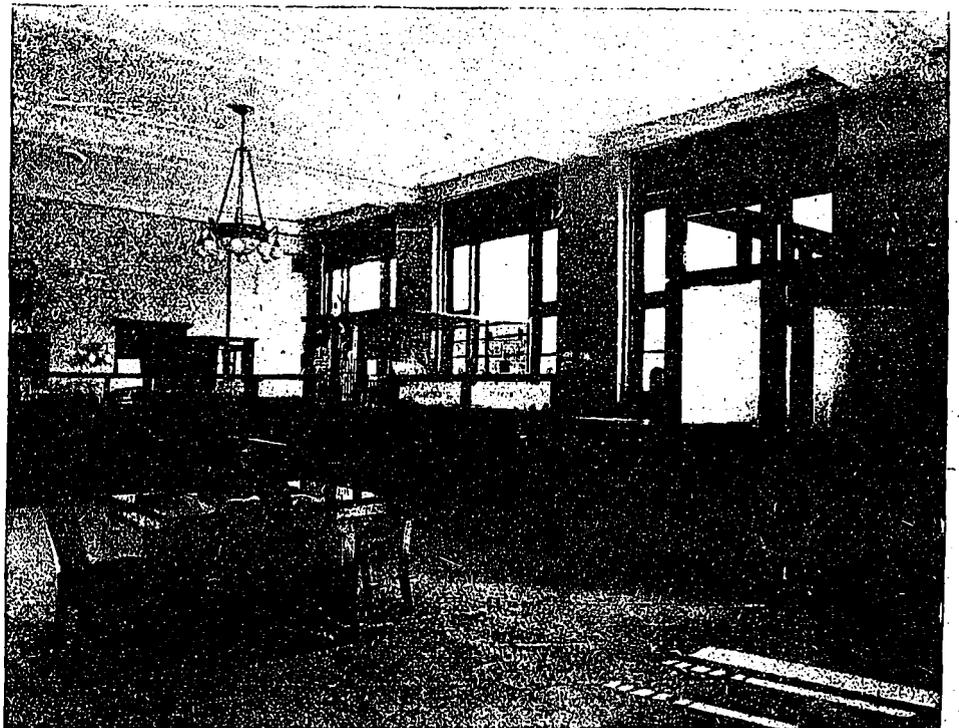
HOGLE & DAVIS, ARCHITECTS.

imitating a piece of Northern Ontario. I think we should agree that it is impossible to have, and undesirable to attempt, a distinctively Canadian style of gardening. We should be content to suit our gardens to the particular style of architecture that has been adopted; that is to

say, the Georgian house demands one kind of gardening, the Tudor another; the garden to be in keeping with the particular style of architecture adopted and conforming to the building rather than to the vast forests which characterize Ontario.



GROUND FLOOR PLAN.



BANKING ROOM: MERCHANTS BANK, PEMBROKE, ONT.

A Professional Fee for the Architect*

By R. Clipston Sturgis, Past President of the American Institute of Architects.

OF all the vexed questions connected with the practice of architecture, probably none has been so fruitful of trouble as the payments to the architect for his service. A commission, based on the cost of the work, is not only utterly unsuited for general application, but is open to the very real objection of the architect's financial interest in the cost of the work.

Attempts have been made to classify work according to its complexity and establish different rates of commission, and also to make sliding scales to obviate the inequalities of a commission as applied to works of greatly varying costs.

Recently both English and American architects have been faced with a new aspect of the problem, that is, work where the repetition of units makes a commission on the cost peculiarly inapplicable. This is not a problem wholly new to the American architect, because his lofty office buildings have floor after floor exact duplicates, but this is not quite the same as building a hundred houses all alike, which is the situation, developed by the war, in England and in the States.

The United States Housing Corporation, which was handling this work during the time when the United States was in the war, followed a method, which had but recently received the consideration and endorsement of the American Institute of Architects, of a fixed professional fee for the service of the architect, and then the payment of all cost of performing the professional service required.

A few architects had been using this method of charging for many years, and with such success, and such unflinching endorsement from clients, whether public or private, that some account of the way in which the method developed may be of interest to English architects.

The first step was based on the fact that the draughting of a job was a fair measure of its complexity, and that the fee should bear some relation to this. A study of the fees on completed work led to the conclusion that the average job netted the architect about one-half his commission. If he actually lost money on some small and complicated job, he made enough on the large and simple ones to even up, and the average job yielded half the gross fee as profit. It was also found that in offices of fair size, in large communities, the draughting pay-roll about equalled all other expenses—i.e., rent, light, heat, clerical assistance and supplies.

Therefore draughting times two was the actual cost, and a similar amount would give the architect his fee, so draughting times four was tried as the gross fee.

The first trial of this, some twenty years ago, proved that too much depended on the draughting pay-roll, and that this was as objectionable and as unfair as the commission basis. From this point the attempt was made to determine the fee irrespective of the draughting, leaving the draughting doubled to cover the cost. The first measure tried was the old commission basis, applied not to the final cost, but to the estimated cost of the work, and, as it was the professional fee only, it was half the commission. That is, with 6 per cent. on a \$100,000 job, 3 per cent. was the fee. This, however, was subject to all the old troubles of varying complexity and varying costs.

The next step, then, was to fix the fee tentatively on this half commission basis and then modify it by two other considerations, first, the complexity, and, second, the length of time of the service.

This sounds complicated, but is really fairly simple, because it so readily falls into terms of an annual salary, and a salary is the sort of thing that every one is used to and accustomed to measure by. An annual salary then, based on the character of the service, its length, and the approximate financial responsibility involved, seems to be the best way to determine the fee.

Incidentally, on this basis some of the huge fees which are encountered more often in the States than in England, are shown up as unreasonably large—an office building costing \$3,000,000, and carried through, from first drawings to completion, in two years would mean at 6 per cent. a fee of \$180,000; half of this at least clear profit, would mean a fee of \$90,000, or a salary of \$45,000 a year, and this generally for but part service of the architect, who undoubtedly would have other work. The average business man would at once question whether the service to be rendered by the architect was worth this, where he might not question the accepted rate of commission.

There are various advantages in this method which will be touched on later, but one, which influences the determination of the fee, may be mentioned here. Under this plan both the cost of the architect's force and the architect's fee are paid monthly from the start. Under the commission system an architect used to wait for

*Reprinted from The Journal of the Royal Institute of British Architects.

a first payment until a contract was signed. Theoretically this was because until the contract was signed there was no amount on which to base a commission. The older men know what a burden this was when work dragged and many changes multiplied drawings with no prospect of compensation for the redrawing unless the building cost in excess of the amount originally proposed. Then there came a time when the architect got a part payment when preliminary sketches were accepted, and this commission was based on an approximate estimate. Even this, however, was but a step toward the good business principle of paying as you go, and not making bargains which involve the furnishing of capital and interest on it.

Under the fee system payments are made monthly from the beginning of the work, a portion of the fee, and the whole cost of draughting to date. It is customary to reserve a fifth of the fee payable at the end and divide the remainder into monthly payments.

As examples of the application, assume two pieces of work, one a house estimated to cost \$100,000, and one an office building, of ten storeys of which eight are duplicates, estimated to cost \$500,000. The time for each being estimated at eighteen months, it may be fairly assumed that these two involve an equal amount of service on the part of the architect himself. The first costs but one-fifth of the second, but will require the constant personal attention of the architect, from the first sketches to the last finishing touches; while the second, once past the stages of study of plan and design, will be executed by the office with but little further attention from the head. The question, then, would be to determine a fair fee for the eighteen months' service, bearing in mind that the first involves more personal attention, and the second responsibility for a greater investment. In fixing the value of this service one will also bear in mind that the architect assumes no risk of having his profit eaten into by draughting, that he will not have to carry his office expense except month by month, and that he will receive a share of his fee each month. Assume that \$4,000 a year—that is, \$6,000 for a year and a half—would be a fair professional fee. Twenty per cent. reserved, \$1,200, would leave \$4,800 to be distributed in eighteen monthly payments, \$266 a month.

Compare this with the commission basis. As customary in the States, the house would be at least ten per cent. and the office building six per cent.—10 per cent. on \$100,000 is \$10,000 and the architect would be fortunate if his expenses did not run over half of this. Six per cent. of the \$500,000 would be \$30,000, and it is unlikely that the expenses would be even half this amount,

and the architect would net on the office building three times as much; but one is so used to thinking of service in percentages of cost that it is difficult to see this.

A somewhat extreme contrast is taken here merely to emphasize the comparison. Probably in practice one would be more influenced by the actual expenditure, and would place a somewhat lower fee than \$6,000 on the office building, but it is surely obvious that the service of the architect himself is not worth three times as much, or even twice as much, and that \$5,000 and \$8,000 would be a fairer ratio between the two.

The first great advantage of the professional fee, then, is the ready means of gauging it according to the character of the service to be rendered and the length of the service, in place of depending entirely on the cost of the work.

The second advantage is its ready adaptation to partial service. The reserved twenty per cent. is a convenient amount with which to terminate the work at any period. If but two months' work has been rendered and only the preliminary drawings are complete when the owner abandons the work, he pays the reserve, twenty per cent., and the two months' fee and expenses, and the whole matter is closed. At any stage of the work this is a fair settlement.

The fee applies also to work which is originally partial service—professional advice, a preliminary survey and report, consultation, judgments and arbitration. All of these would carry a fee based on the character of the service and its duration, and often there would be no expenditure at all on the part of the owner, and never any reason for basing the value of the professional service on the cost, even when there is any.

It applies also to work involving almost nothing except the architect's personal work. When an architect charges twenty-five per cent. for designing, detailing, and following the execution of a carved screen which costs but \$1,000, the percentage seems huge; but the payment of \$250 for such service is, if anything, small. If a design, involving no more service, is executed in a material that makes the screen cost \$5,000, it is absurd that the architect should receive five times as much for exactly the same service. If, however, he told the owner at the outset that for this personal intimate service, where design, details, and the supervision of models and execution were to be wholly his own, he proposed to charge \$500, the owner would compare it with the fee for an operation for appendicitis, and probably conclude that it was fair enough.

I append a form used in my own practice which is perhaps the best way of showing the application of the fee system, and I give the fol-

lowing examples of various pieces of work executed by my office on this system:—

(1) A Bank Building.

	Estimated.	Actual Cost.
Building	\$600,000	\$592,494.00
To take	24 months	24 months
Fee	16,000	16,000.00
Draughting	15,000	15,218.46
Engineers	2,700	2,680.32
Incidentals	2,700	496.50
Clerk	3,600	1,960.00
Models		414.00
Perspective by Guerin		520.50

(2) A Small Country House.

	Estimated.	Actual Cost.
Building	\$29,000	\$32,025.49
To take	9 months	12 months
Fee	1,800	*†2,100.00
Draughting	1,000	*1,501.42
Engineers	300	456.30
Incidentals	250	191.98

† The increase in fee represents three months' more service.

(3) An Institution for the Blind.

	Estimated.	Actual Cost.
Building	\$886,000	\$1,017,159.29
To take	2 to 3 years	32 months
Fee	18,000 to 25,000	*25,000.00
Draughting	25,000	*24,469.47
Engineers	9,000	9,910.99
Incidentals	500	1,118.72
Clerk of Works	4,000	10,627.50
Advice on grounds		889.35

(4) War Housing.

	Estimated.	Actual Cost.
Buildings	\$3,500,000	\$4,500,000.00
Fee		*13,000.00
Draughting		*23,941.75
Domestic Engineers	No	2,000.00
Incidentals	Estimate	10,031.74
Clerk of the Works	made	6,647.20
Advice on grounds		125.00

Note.—The Government employed and paid in addition a Landscape Architect and an Engineer for streets and utilities.

(5) A School.

	Estimated.	Actual Cost.
Building	\$91,327.50	\$91,516.78
To take	11 months	18 months
Fee	2,000.00	*2,000.00
Draughting	3,000.00	*3,357.77
Engineers	950.00	942.75
Incidentals	300.00	354.65
Clerk of the Works	500.00	471.35

(6) A Telephone Exchange.

	Estimated.	Actual Cost.
Building	\$370,192	†\$436,899.99
To take	15 months	20 months
Fee	8,000	*8,000.00
Draughting	9,000	*10,401.41
Engineers	4,500	5,925.99
Incidentals	500	362.23
Clerk of Works	2,600	4,000.00

(7) A Carved Wooden Doorway.

	Estimated.	Actual Cost.
The work	\$2,700	\$2,913.00
Fee		*450.00
Draughting		*49.26
Incidentals10

* Architect's gross commission.

† War-time contract accounts for increased cost.

In all these examples there are but two items which under the A.I.A. schedule, would be set against a commission, the fee and the draughting doubled; all other expenses the owner would pay anyway. No. 1 was 5 per cent.; No. 2, 10 per cent.; No. 3, 5 per cent.; No. 4, 03/4 per cent.; No. 5, 6 per cent.; No. 6, 41/2 per cent.; No. 7, 17 per cent. It will be seen, therefore, that in all the larger jobs the cost to the owner is lower than the commission customary here; that on the moderate cost school it is about the same, that on the carved doorway it is a very high per cent., and that on the housing it is a very low per cent. It is interesting to note that the Telephone Building, which cost \$66,000 more than the estimate, due to the wholly fortuitous accident of war, would have yielded the architect \$3,600 more on a commission basis when he had done nothing to earn it. In every case, however, the fee was net profit, it was a fee that was assured and without risk, and it was entirely satisfactory both to owner and architect. From the point of view of the architect there is the inestimable value of an assured income; each job carries its own expenses and pays its monthly fee. Study of plans made with a view to meeting more fully the needs of the owner and to assure the greatest economy is encouraged, and is, quite rightly, paid for by the owner. No owner will object to paying for a month's work of three draughtsmen, resulting in economies ten times the amount of their salaries. Both architect and owner are relieved to feel that the carelessness or indifference of the architect, which results in needless cost, is not rewarded, and that conscientious and careful study, resulting in economy, is not penalized. It is also very satisfactory both to architect and owner to feel that when a decision is to be made between materials or methods involving different expenditures, the decision will have no effect whatsoever on the fee. The exterior of a Town Hall was changed from brick ashlar to cut stone. \$10,000 was added to the cost of the work. The fee to the architect was unchanged. The interior of a Public Library was changed from plaster to marble, \$25,000 added to the contract, and the architect received 6 per cent. on this and frankly said that he was genuinely troubled at receiving \$1,500 and giving no service in return, for the design was unchanged.

No one who has ever tried this method would ever want to return to the commission basis, and in England, where the service of the quantity surveyor covers so much which is done here partly in the architect's office and partly by the contractor, it is especially applicable, because the architect's service is so clearly defined.

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CONTRIBUTIONS.—The Editor will be glad to consider contributions dealing with matters of general interest to the readers of this Journal. When payment is desired, this fact should be stated. We are always glad to receive the loan of photographs and plans of interesting Canadian work. The originals will be carefully preserved and returned.

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Vol. XII Toronto, Dec., 1919 No. 12

Toronto Builders Negotiating to Close Early Concurrent Agreements

The effort which is now being made in Toronto to sign up all building agreements by January 1st, if successful, will work a real benefit to all parties concerned. Negotiations towards this end are now being conducted by the Joint Industrial Council of the Building Trades industry, which comprises an equal representation of the various sections of the Builders' Exchange and the building trade unions. The object is to terminate all existing agreements with the current year, and to unify all new agreements so as to make them effective hereafter at the beginning of each year. If the proposal put forth is accepted it will mean an adjustment of differences at a season of the year when building work to a large extent is curtailed, and thus obviate mid-season delays and interruptions due to demands and tie-ups at a time when operations are in full swing. With trade agreements

renewed at this time of year, architects would be in a position to base their estimates on spring work with a more definite knowledge as to wages and labor conditions, and consequently developments would commence at an earlier date and spread over a far greater period. It is understood that several of the building trades have already consented to the new arrangement, and should the agreements be closed a season free from any interruption should be experienced. The efforts in this direction should not, however, be limited to Toronto alone, but should have a national application and opens a question which could well be considered by the Canadian Building and Construction Industries at the coming Ottawa conference. During the past year, in Montreal and other cities, a vast number of building projects were held up indefinitely owing to the uncertain labor conditions with the result of a heavy loss to both sides. With the Toronto recommendation applied in a general way and unanimously endorsed, a steadying and beneficial influence would soon be felt. In case of non-agreement between sections of the Exchange and men, the Joint Industrial Council recommends that the matters in dispute be submitted to an arbitration board, and in this manner all differences be speedily adjusted.

Proposed U. S. Building Loan Bank System

The Federation of Construction Industries in the United States is advocating the development of a modern system of long term banking, as a complement to the Federal Reserve System. A memorial recently presented to Congress in this connection also recommends the passage of a bill recently introduced in both the Senate and House of Representatives entitled, "A Bill to Encourage the Building of Homes by Providing for Exemption from Taxation of the Incomes from Mortgages on Real Estate."

The need of some remedial measure of this kind is said to be due to the tendency of the Federal Reserve System to promote the use of capital upon short term loans made through national and other banks, and which has resulted in the withdrawal of large sums of money from availability for loans on building and real estate. It is also pointed out that there is a need at present in the United States for from 600,000 to 1,000,000 new dwellings as homes for workmen and others and of many other buildings for business and other purposes.

In event of its passage, the Act would create a system of Federal Building Loan Banks operating under the general supervision of a Superintendent in the Department of the Treasury. It is provided that each such bank shall begin business with a paid-in cash capital of not less than one hundred thousand dollars in shares of

one thousand dollars each. Only building associations may purchase or hold stock of such banks. Each bank shall be managed by seven directors, selected by the member associations composing the bank. It is provided that such banks, when designated for the purpose by the Secretary of the Treasury, shall be depositories of public money, except receipts from customs, under such regulations as may be prescribed by the Secretary. No Government funds so deposited shall be invested in building loan bonds.

Any member of any Federal Building Loan Bank, desiring to obtain funds, shall file an application designating the amount needed and accompanied by a schedule containing a list and description of the first mortgage securities which the borrowing member proposes to offer as collateral for the advances required. According to the Senate Bill, such schedule shall exhibit no mortgage in excess of six thousand dollars; according to the House Bill, the limit is placed at five thousand dollars. The security thus taken upon a loan to a member association from the Federal Building Loan Bank shall be at least twenty-five per centum in excess of the loan asked for, and no advance shall be made to any member that shall exceed twenty times the par value of the stock of the Federal Building Loan Bank owned by said member. No mortgage shall be accepted as security for any advance unless it shall be a mortgage upon a dwelling house and no such mortgage shall be accepted as security where the balance unpaid thereon exceeds seventy per centum of the appraised value of said mortgaged property.

Vancouver Permits Show Substantial Gain

Permits issued for the present year up to the end of November at Vancouver, total \$2,152,958 as against \$1,358,731 in the corresponding period of 1918. This represents a gain of 58 per cent. and reflects generally the improvement in the building situation on the Pacific coast. Reports indicate that considerable work is being planned and that the coming year will witness the development of a large number of important projects.

Change of Address

The Toronto office, shop and warehouse of the Canadian Ice Machine Co., Limited, are now located in the company's new building at Villiers and Munitions (Eastern Harbour Terminals) where every facility is provided for giving architects and other customers "Cimco" service. The new telephone number is Main 7907. Other branches of the company are maintained at Montreal, Calgary and Winnipeg.

New Engineering Firm

Gore, Nasmith & Storrie have opened an office in the Confederation Life Building, Toronto, for practice as consulting engineers and public health specialists. The firm will devote its attention to water supply and purification, sewerage disposal, irrigation and drainage, reservoirs, foundations, investigations, trade wastes and factory hygiene, town planning, industrial housing, etc.

The members of the firm are William Gore, George G. Nasmith, C.M.G., formerly City Analyst, and William Storrie, all well known in engineering circles.

The Architect and His Work

(Continued from page 380.)

the same subordination of the part to the whole; and there is the hazard variant from which skill may make, or folly mar, success. The commander, like the architect, must work within the limitations of his Budget, though his expenditure is counted not, alas, in terms of his employer's money, but of his men's lives! Marshal Foch, indeed, pushes the parallel still closer. "The development of the art of war is like that of the art of architecture. The materials you use for your buildings may change; they may be wood, stone, steel. But the static principles on which your house must be built are permanent."

Those who know me will not misunderstand; will not hink me less enthusiastic for Art, that I have dwelt almost wholly upon Plan and Construction. Assuredly, I yield to none in my reverence for the sublime qualities of Painting, Music, Sculpture. But, among the fine arts, Architecture is unique in that it alone subserves utility. By reason of its very limitations—the intimacy of its relation to the needs of humanity, its incessant confrontation with cosmic fact, and the rigorous severity of its principles—its votaries are compelled to understand widely, to see quickly and well, to be eclectic and tolerant while holding unsullied their own artistic faith. It is more particularly upon these grounds that I have ventured to assert the value of our profession to the State.

It is not among those callings which bestow great wealth on those who practise it. Few Architects retire upon their earnings; fewer still leave riches at their death. Yet no art bestows greater fortune of pleasure upon those who give themselves wholly to its service; and what can money give besides?

To us, Architects, the immortal words which Carlyle puts in the mouth of Teufelsdröckh yield their fullest meaning. "Not what I have," said he, "but what I do is my kingdom."

Safety in Steel Erection

COL. E. A. GIBBS

The McClintic-Marshall Company, Pittsburgh, Pa.

STEEL erection, presents in general, the same problems regarding safety encountered in other field construction work.

Like other outside construction work, it is done under more different conditions than shop work, for the reason that the conditions are varied and continually changing, while in the shop many conditions affecting accidents are fixed. The weather plays a much more important part in the field than in the shop. The force of workmen is much less stable in the field than in the shop. With the field force constantly changing, it is much more difficult to educate the men to safety and to avoid getting men who are unsafe on the work.

There are, however, certain differences between steel erection and handled under more varying conditions at a greater distance from the ground. There is an element of risk in every lift. While the derrick may have been tested throughout and proven safe, an accident may be caused by a bridgeman making one careless hitch on a load of beams.

The appliances for erecting steelwork have been developed and increased greatly during the past twenty years and erection is relatively much more safe. Nevertheless, many new difficulties have arisen. The average weight of pieces to be handled has greatly increased while certain limiting features have remained unchanged, such as track clearances and gage. A girder may increase in weight but the derrick car that handles it must run on and be supported by the same track as previously. This increased weight has had one benefit. Heavy members cannot be juggled and handled in any manner that the foreman desires. The equipment can be designed to handle these in only a few ways and the foreman must be governed accordingly. Therefore, the work is likely to be done as the design of the equipment contemplates and with corresponding safety.

Accidents are divided into two classes: real and preventable. Real accidents are those which occur through no neglect on the part of the workmen or the employer which could reasonably be expected to be foreseen and prevented. Preventable accidents are those which could have been avoided, had either the men or those in authority over them exercised the proper amount of vigilance. It is conceded that well over half of all accidents are preventable and the proportion is probably higher.

We are, of course, concerned with both classes of accidents but particularly with those that can be prevented. There is no question about the desirability of preventing accidents. The problem is how to accomplish it.

Preventable accidents may be divided into three classes:

1. Accidents due to workmen themselves by reason of being physically incapacitated: ignorant, inexperienced, intemperate, careless or reckless, acting the fool, or actual disobedience.

2. Accidents due to foremen: Improper selection of men placed in charge of work or doing the work.

Inadequate instruction to workmen. Putting men or allowing them to go into dangerous places unnecessarily.

Lack of vigilance and orderliness on the work. Failure to investigate questions of safety made by workmen.

3. Accidents due to superiors: by reason of improper selection of foremen, safeguards, equipment for doing the work and instructions regarding its use.

It is believed that the greatest difficulty is with the men themselves. Construction companies long ago recognized the necessity of having proper equipment, and that phase of the situation is in relatively good shape.

The foremen, while still skeptical as to the value of certain expedients for safety can be educated more easily as they form a small class, and as their tenure of employment depends on the results they produce it isn't hard to impress them with the effect of accidents on their work. It isn't so easy to get them to enforce safety methods. The conditions on a job are changing rapidly and the foreman is crowded to make time. He cannot do everything and naturally devotes his time to things that speed the work and affect the direct cost. Only constant pressure on the question of safety, and using every accident to point out the neglect of foremen or men will bring results.

The workmen are by nature and training a daring class of men and instinctively feel that their courage and skill is questioned when they are asked to comply with many of the expedients for safety. However, they can and must be educated to take proper precautions to protect themselves and their fellow-workmen. Bulletins, notices, and placards of various kinds containing written and illustrated cautions and effects of neglect are very good. Our company, in 1910, issued a book to its foremen containing instructions and cautions for the prevention of accidents. We also started at that time to post a bulletin with certain of the most common faults of workmen and how to avoid them. A small copy of this bulletin is handed to each bridgeman whom we employ. It contains several short paragraphs as follows:

Don't be Reckless. More accidents occur through recklessness than any other cause. Don't walk on rods. Don't ride a load. Don't ride on a locomotive crane.

Don't Be Careless. Look where you step, and be sure that what you step on is safe and secure. Don't step on ends of loose plank. Don't start to slide down a line unless you are sure the ends are fastened.

Be Orderly. Do whatever you do in an orderly, careful manner. Pile material so that it cannot roll, fall, tumble, or be blown over. Don't let tools or equipment such as bolts, nuts, drift pins, blocks, dolly bars, etc., lie around so that they can be knocked off the work or so that any one can fall over them.

Unfit Condition. Don't go to work if you have been drinking or do not feel well. If you are lame or have any defect in hearing or eyesight you should not work at this business, as by so doing you endanger your own and fellow workmen's lives. If you are inexperienced in, or unsuited for the work to be done, don't undertake it.

Be Vigilant! Watch What You Are Doing. Don't stand or work under a load. Don't go in the "sight" of a line nor stand

in front of a snatch block. Don't work on or about a crane runway when the crane is in use unless there is a stop between you and the crane.

Don't Use Unfit Tools. Be sure the tools and equipment you use are in good working order. If they are not, don't use them.

DON'T WORK WITH MEN WHO DON'T OBSERVE THESE RULES

The first requirement for safety in erection is to have the proper equipment. Foremen and workmen cannot be expected to take the necessary precaution if they are not provided with proper equipment in first-class condition. And it is not enough to provide first-class equipment. It must be kept in good condition by constant attention on the job and by overhauling at the completion of the job if necessary.

Some of the principles observed by our company regarding equipment are:

1. Use no wooden travelers or derricks, except very light derricks and jinnyswinks.

2. All castings in erection equipment carrying any strain to be made of steel. We make all of our sheaves for cable blocks, except small blocks for 1/4-inch cable, of steel. All castings when bending strains are encountered are made of vanadium steel. Vanadium insures a more uniform casting and tends to eliminate blow holes.

3. Forgings of importance such as the headblock of a derrick car are made of nickel steel.

4. Use the very best manila lines.

5. Use cable slings, instead of chains. Very important.

6. Automatic brake in addition to mechanical brake on all electric hoists.

In the erection of ordinary work the equipment provided, if it is of the best quality, is amply strong for the purpose. It simply requires proper handling and reasonable care.

For the heavier classes of work, heavy and frequently special equipment must be used. This equipment requires good designing and the best materials. Good designing implies a thorough knowledge of how the equipment is to be used, and the provision for all reasonable uses to which it may be put. It is the duty of foremen, after being properly instructed, to see that the equipment is put to no uses for which it was not intended unless necessary, and then only after proper investigation by an engineer.

Erection equipment should be so designed as to make all stresses as determinate as possible. Even then the many positions in which a load can and will be handled will produce more varied strains and conditions than occur in bridges or other permanently fixed structures. Be sure that all stresses and combinations of stresses are fully cared for. Then, not only make the main members strong enough but pay especial attention to details. Most failures in erection equipment are primarily due to poor details. Booms, with light lacing or lacing improperly detailed are common. Poor detailing often produces very great bending stresses that are ignored.

Erection equipment should be most carefully inspected during its manufacture and test reports required for steel castings, all alloy metals, and steel cables. The assembling and erection of a traveler or heavy derrick should be carefully done to insure that no stresses are introduced by improper alignment. This is extremely important. Booms and traveler hoists should be tested, with gradually increasing loads before using them to full capacity. While in use they should be inspected frequently to see that no weaknesses have developed through wear or other means, and that the equipment is working as designed.

Instructions should be issued as to just how equipment on heavy work is to be used and nothing left to chance. A movement of a very short distance in the setting of a traveler or in the radius of a heavy boom may be perfectly safe as far as the equipment itself is concerned, but may endanger the falsework or the permanent structure.

In the erection of falsework, great care and an accurate knowledge of conditions is necessary. Timber should be carefully inspected and none but of good quality used. In case mudsills are used, examine the soil carefully and provide sufficient mudsills to support the load with ample safety.

The matter of bracing the falsework bents themselves, their connection by bracing and struts, and the fastening of the end bents to the piers or abutments so as to prevent any longitudinal movement of falsework, are all points where too much care cannot be exercised.

Following are some cautions that if followed will prevent many of the accidents in steel erection:

1. Select the proper man for the particular task in hand.

2. Do not order men to work in unnecessarily dangerous places, and be on the alert to see that they do not run unnecessary risks of their own volition.

3. Do not allow the men to work on corrugated iron roofs or steel when there is a coating of ice thereon.

4. Walking on rods, riding loads or locomotive cranes, sliding down lines without inspecting the fastening, standing in the light of a line or in front of a gate block, are all unnecessary risks and should not be permitted.

5. Do not permit men to work about crane runways without placing an effective stop between the men and the traveling crane, and see that the electric wires are properly insulated.

6. Require the rivet boss to inspect carefully all riveting scaffolds. Improperly hung scaffolds have caused many serious accidents. Only the best material should be employed. Clear spruce is the best.

7. Pipe used as needle beams should not be spliced.

8. All scaffold plank should have a stop bolt about 6 inches from each end to prevent it from slipping off the needle beam and if the scaffold is inclined it should have cleats nailed on the plank. All scaffold material should be tested for twice the load it is expected to carry. Even this care will not suffice unless the men are careful. This was demonstrated in a case where a riveting gang used their scaffold as a brace for an air buckup. The scaffold—amply strong for its purpose—broke under this sudden additional load and the men fell into the river.

9. On high bridge work, scaffolds should be provided with a railing. This is a requirement by law in some states.

10. Piling of material must be carefully watched, particularly with heavy work. Skids should be amply heavy and level, and the piles not too heavy. Poor piling of material is responsible for a large number of accidents.

11. When it is necessary for men to work above other men, put up a danger sign calling attention to the fact that men are working overhead.

12. Keeping small tools in condition will avoid many accidents.

13. Wearing of goggles while chipping is a necessary precaution but one the men dislike to follow.

14. In the use of cable slings, inspect them frequently and keep them properly oiled, and in handling heavy loads pad the sharp corners to prevent cutting the cable.

CONTRACTORS and SUB-CONTRACTORS

As Supplied by the Architects of Buildings
Featured in This Issue.

MERCHANTS BANK BUILDING, GALT, ONTARIO.

General Contractors, The Schuitz Brothers Co., Limited.
Structural Steel Work, McGregor & McIntyre.
Cut Stone Work, Kutchie Cut Stone Co.
Reinforcing materials, Trussed Concrete Steel Co.
Hollow Tile work, National Fireproofing Co.
Steel Casements, Trussed Concrete Steel Co.
Hollow metal windows, Douglas Brothers.
Ornamental Iron Works, Canada Iron & Wire Co.
Marble & Tile work, Kent, Garvin & Co.
Roof Covering & Sheet Metal Work, Turnbull & Cutcliffe.
Glass, Pilkington Brothers.
Painting, F. G. Roberts & Co.
Plastering, F. Charles.
Ornamental Plastering, H. E. Tompkins.
Plumbing, Heating and Electrical Work, Scott & Bennett.
Cork Tile Flooring, Can. David E. Kennedy Co.
Office Fittings, Can. Office & School Furniture Co.

THE MERCHANTS BANK OF CANADA, NIAGARA FALLS,

General Contractors, Archibald & Homes.
Structural Steel, Reid & Brown, Ltd.
Cut Stone, Geo. Oakley & Son, Ltd.
Roofing, McDermid Bros.
Painting, J. McCausland & Son, Ltd.
Plastering, E. A. Murby.
Plumbing, Adam Clark.
Electric Wiring, J. Everard Myers.
Fire doors, A. B. Ormsby Co., Ltd.
Heating, Adam Clark.
Bank Fittings & Furniture, Canadian Office & School Furniture Co., Ltd.
Metal Store Fronts, H. J. St. Clair Co., Ltd.
Electric Fixtures, F. C. Henderson.
Vault Doors, J. & J. Taylor, Ltd.
Finishing Hardware, Canada Hardware, Ltd.
Linoleum, Blinds and Hangings, The Robt. Simpson Co., Ltd.
Consulting Engineers, Ewart & Jacobs.

THE MERCHANTS BANK OF CANADA, GEORGETOWN, ONT.

General Contractors, J. Robert Page.
Cut Stone, Geo. Oakley & Son, Ltd.
Roofing, A. Matthews, Ltd.
Plastering, R. C. Dancy.
Plumbing, J. W. Kennedy.
Painting, J. McCausland & Son, Ltd.
Electric Wiring, J. Everard Myers.
Steel Sash & Fire Doors, A. B. Ormsby Co., Ltd.
Heating, J. W. Kennedy.
Bank Fittings and Furniture, The Canadian Office & School Furniture Co.
Electric Fixtures, F. C. Henderson.
Vault Doors, J. & J. Taylor.
Finishing Hardware, Canada Hardware, Ltd.
Linoleum, Blinds, Bedroom Furnishings, The Robt. Simpson Co., Ltd.
Consulting Engineers, Ewart & Jacob.

BANK OF HAMILTON BUILDING, WINNIPEG.

Electric Clocks, Henry Birks & Son.
Electric Work, Levvy Electrical Company.
Electric Fixtures, Levvy Electrical Company.
Electric Fixtures, E. F. Caldwell & Company.
Fireproof Doors, R. Y. Kilbert & Company.
Furnishings, Hudson Bay Company.
Foundation Work, Foundation Company.
General Contractors, Hazelton & Walkin, Limited.
Heating, Cotter Bros.
Interior Decoration, J. E. Dolan.
Marble Work, Marble & Tile Company.
Modelling, W. C. Metzger.
Mill Work, Acme Sash & Door Company.
Plastering, Thomas Edwards.
Plumbing, Cotter Bros.
Pneumatic Tubes, Willis Wilson Danley.
Roofing, Fonesca Roofing & Sheet Metal Company.
Sprinklers, Cotter Bros.
Steel Work, Dominion Bridge Company.
Stone, Tyndall Quarry Company.
Stone, W. C. Metzger.
Temperature Regulators, Johns Temperature Regulator Company.

MERCHANTS BANK, COLLINGWOOD, ONT.

Brick, Don Valley Brick Works.
Electric Fixtures, McDonald & Wilson.
Office Furniture, Canadian Office & School Furniture Co.
General Contractor, Dickie Construction Company.
Plastering, F. Charles.
Vault Doors, J. & J. Taylor.

Eastern Lumber Commissioner for B.C.

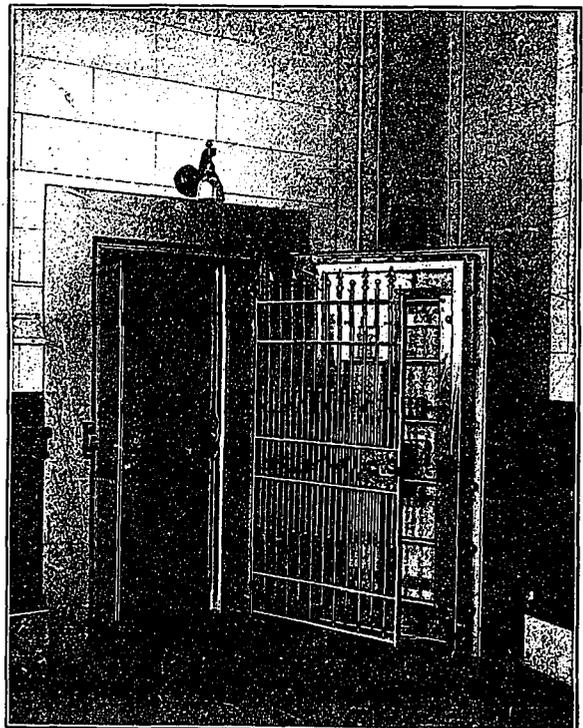
Major James Brechin, B. C. Lumber Commissioner in Ontario, has resigned his position and has been succeeded by William Robertson, a well-known official of the Trade Extension Department, who has already gone east and assumed for the time being at least the duties thus vacated.

Mr. Robertson was formerly manager of the Rat Portage Lumber Company both at Kenora and subsequently at Vancouver, and it's well known among Canadian lumbermen. He returned about a year ago after service overseas.

Major Brechin was appointed to the position which he now vacates in April of this year, his duties being to conduct an aggressive campaign to aid in the consumption of British Columbia lumber in eastern Canada.

Opens Toronto Office

Abell & Menke, equipment experts, have opened an office at 59 Yonge Street, Toronto. This firm specializes as consultants to architects in planning electrical work and furniture equipment, and has an experience covering a large number of important undertakings, including the Dominion Bank Building, Toronto; Sun Life Building, Montreal; and the new Parliament Buildings at Ottawa, now in course of completion. They are eminently qualified to advise and co-operate in planning and installing work in either of the branches mentioned.



One of Two Similar Vaults Installed by the Goldie & McCulloch Co. in the Merchants Bank, Galt, Ont.



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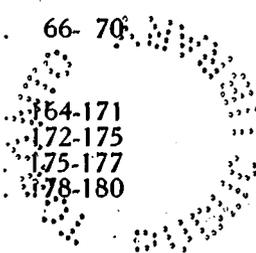
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