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APRIL 22, 1899.



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AN illustration of the way in which politics affect the interests of simple people is to be found in the dispute over Canadian reciprocity. It appears that the Legislature of the Province of Ontario, some time ago, yielding to the absurd cry that the United States was absorbing (in exchange for cash) the forest wealth of the Province, prohibited the exportation of Ontario lumber across the Lakes into the United States, even where it was cut from land owned by citizens of the United States. This high-handed proceeding has, naturally, suggested retaliation, and the Government of the United States is said to think seriously of prohibiting all importation of Canadian lumber. If the Canadian forests were owned wholly by Canadians there would be a certain reasonableness in this idea; but, as a matter of fact, they are in great part owned by Americans, upon whom the proposed legislation would inflict heavy loss. This is, however, not the end of their troubles. There are also in Canada extensive pulp-mills, which produce wood-pulp in immense quantities, mainly for paper-mills in the United States. Almost all these pulp-mills are owned by Americans, and the Canadian Government is said to have its plans laid, if the authorities at Washington prohibit the importation of Canadian lumber, to prohibit the exportation of wood-pulp. This would ruin the American owners of the pulp-mills, and, it is to be presumed, the international thirst for revenge would be satisfied. Meanwhile, it may be remarked that the Legislature of Ontario, which saw fit, by its prohibitory law, to destroy, without compensation, the business and property of foreigners who bought lands in the Province in good faith, has inflicted upon the Province a blow from which it will not recover in a generation. Public spoliation and injustice are the worst of all investments for the population of any country, and, whether the United States attempts retaliation or not, Canada will long repent having given reason for the impression that private property is not safe from confiscation there.

THE Annual Report of the Supervising Architect of the Treasury Department for 1898 is an unusually attractive one. Under the laws at present in force, much of the designing for Government buildings is done by private architects, and the designs for these buildings form an interesting feature of the book; while the official architecture of the Treasury Department, as shown in the designs for the more modest sort of public buildings, is far superior to that which prevailed a few years ago. The best of the official designs shown seems to us to be that for the post-office at Brockton, Mass., a small, but very pretty building; while the palm among the non-official designs, should, we think, be awarded to Messrs. Wyatt & Nölting, for their post-office at Norfolk, Va. The perspective drawings with which the volume is illustrated owe much of their charm to the skilful touch of Mr. C. D. Maginnis, and are

models in their way. Before another year's report is issued we hope that the Department will consider the propriety of publishing plans, as well as perspective views. The floor-plans of foreign public buildings are always published, and the opportunity afforded architects in this way of studying and comparing them must be of great value in securing constant improvement.

It is sometimes necessary to correct statements in the daily papers which are likely to mislead the public in building matters, particularly where, as is apt to be the case, the statements are made, often quite innocently, in the interest of some special manufacture. Not long ago, an article on fire-proof building appeared in one of the New York papers, in which it was explained that steel structural members ought not to be enclosed in solid brick, for the reason that "There are to-day on the market a good many bricks which during a fire will heat red-hot. The iron structure which they enclose is safe enough until the stream from the hose strikes them. Then there is a sudden contraction of the material, which cracks, and, under the tremendous force of the solid column of water hurled at it, 'peels off,' as we say." In consequence of this peculiarity of the variety of bricks which "heats red-hot" in a fire, the speaker advocated the use of porous bricks, which, as he said, would "resist sudden contraction without breaking." Now, as a matter of fact, while porous bricks are useful, and even indispensable under certain circumstances, architects are obliged to use them with discretion, on account of their lack of strength, and it is to be regretted that a friend of some manufacturer should try indirectly to cast an imputation on those architects who understand their profession well enough to use solid bricks where they are needed for support, and porous materials where strength is of less importance than lightness and fire-resisting quality. No doubt, a porous brick heats more slowly than a solid one, but it is a great mistake to say that porous bricks will not "peel" when strongly heated, and then suddenly cooled. In actual fires, the conditions vary to infinity, and the average porous casings of beams and columns, if properly secured, do not often suffer, but casings of solid bricks also generally remain intact under the same conditions. Practically the essential thing is to provide adequate means for holding the protecting covering to the metal. If this is done, solid brick and porous brick will stay in place under any but extraordinary conditions, and if it is not done, the character of the brick used has little influence on the result.

An interesting test was made a few days ago of the stand-pipes in the Manhattan Life Building, in New York. This building is three hundred and forty feet high, to the top of the dome, and is surmounted by a flagstaff thirty feet high. By pumping through the stand-pipes with which the building is provided, with a maximum pressure of two hundred and seventy pounds, water was sent by a single engine, through a two-inch nozzle, held by a man standing on the dome, ten or fifteen feet higher than the top of the flagstaff. It is needless to say that a stream from a hose held at the street level could have been thrown only to a fraction of this height, and the test demonstrates once more the extreme importance of the stand-pipe system in high buildings. Of course the stand-pipes must be good, and the joints strong, to resist the hydrostatic pressure of a column of water nearly four hundred feet high, but there is no difficulty whatever in having them so.

THE Cornell Alumni News gives an interesting description of the Architectural Department of the University as at present reorganized. As our readers know, since the retirement of Professors Babcock and Osborne the Department has been under the direction of very young men, Professor Trowbridge, at present in charge, being barely thirty, while Professor Van Pelt, who directs the work in planning and design, is only twenty-five. Both of them, however, have received excellent training, Professor Trowbridge, after graduating from Cornell, having spent two years in the School of Fine-Arts, in Paris, while Professor Van Pelt, after a short term in the Paris School of Decorative Art, entered the School of Fine-Arts, and pursued a brilliant career, gaining the Government diploma in less than five years after passing the entrance-examination. It is often to be noticed that the architects who have been longest in the School of Fine-Arts, and

have gained most distinction there, are the least wedded to its traditions, and Professors Trowbridge and Van Pelt, while adopting for Cornell many of the French methods, seem to encourage a certain freedom in design, which is full of promise for the future. As every one who has instructed students in architecture knows, it is necessary at first to be strict in repressing the vagaries of ignorant designers; but when greater knowledge has qualified the student to appreciate the principles on which beauty depends in every style, his development as an artist can be promoted by encouraging him in a certain amount of originality. To give this encouragement in the proper way requires the greatest knowledge and sympathy on the part of the instructor, and the higher the artistic capacity of the student, the more sensitive he is likely to be, and the more easily crushed under dull routine. In other arts, great genius is likely, sooner or later, to assert itself, but in architectural practice, first in the interpretation of other people's ideas, and afterwards, under the cares and limitations of business, there is little chance for the development of the æsthetic part of the mind. This must, therefore, be cared for, so far as possible, in the school, and it is a pleasure to think that Cornell seems to be admirably qualified for this great work.

SOME young architect, with a little leisure, and a taste for chemistry, might do the world a service by devising ways for utilizing aluminium as a material of construction. At present prices, it is cheaper than copper for many purposes, and has advantages that copper does not possess. It has also some disadvantages, but a man of scientific turn of mind should find pleasure in utilizing its peculiar qualities in such a way as to compensate its defects. Hitherto, it has been treated, in building, too much as a precious and costly material, suited to replace silver. Some time ago, a great deal of money was spent in producing ornamental hardware, such as knobs and handles, in aluminium, with very unfortunate results. The metal being, like copper, hard to cast without blow-holes, it is necessary to use expensive apparatus to compact it in the moulds; and, after the work is finished, the aluminium soon assumes a leaden color, diversified with white specks, while it blackens gloves and clothing almost as badly as lead; so that its use for hardware to be handled is not advisable, unless, perhaps, as an ingredient in some alloy not yet described. There are, however, other purposes for which it is well adapted. When copper was cheap, it was occasionally used for smoke-pipes of stoves, and aluminium should be equally serviceable, where it is not to be exposed to a heat great enough to melt it. Tubing of aluminium might also, it would seem, be used for open plumbing. Although it would slowly tarnish, it could be readily cleaned, and, at the worst, it would never assume the unpleasant appearance of neglected nickel-plating. For flashings, it seems as if a pure, soft aluminium might be very useful, being stiffer than lead, cheaper than copper, and less easily corroded than zinc; and the same qualities would adapt it for rain-water conductors, and perhaps for gutters.

DR. J. D. EMMET, of New York, has done a public service by calling attention in the newspapers to the importance of having the medical profession properly recognized in the National Government. As he points out, the office of Surgeon-General of the Army is the only one which pretends to have any connection with medical science, and this is practically only a political "plum," while its incumbent is simply an appendage to the Adjutant-General's Department, having no authority to enforce his recommendations, even where they relate to the army. Dr. Emmet says that he has not heard of a single instance in which the selection even of a site for a camp was referred to the Surgeon-General, and yet, as every one knows, hundreds of lives were sacrificed last year to the ignorance, or worse, of those who made the selection, while the only staff-officer who was really competent to judge of such matters was kept in the Adjutant-General's office at Washington, ordering the shipment of drugs and medical appliances to brigade commanders, who could receive them or not, and dispose of them as they chose. Meanwhile, what may be called the medical administration of the country is in a state of absolute barbarism. The appearance of an epidemic in any part of the country is the signal for the establishment of what is called a "quarantine," which consists in the patrolling of the roads leading from the place by armed men, instructed by the panic-stricken populace of the uninfected districts to shoot down all persons attempting to pass through; and, while the local

physicians in infected districts work nobly, and most intelligently, in struggling with the disease, their efforts to prevent its spread must be to a great extent neutralized by the wild alarm which prevails in the uninstructed and uncontrolled community around them. As it has pleased our rulers to annex to this country an incalculable mass of yellow fever, cholera, plague and leprosy, it is certainly time to put an end to what was, even before the Spanish War, a crying disgrace, and establish a rational system of inter-State health-regulation, not only to prevent Hawaiian and West Indian leprosy from getting a permanent foothold in New York, but to circumscribe and control the epidemics which are sure to be imported from our new possessions, without cruelty to the sufferers, and without exposing the well to demoralizing and fatal panics. Dr. Emmet observes that there is a movement on foot for the establishment of a Cabinet office, devoted to the authoritative control of matters of public health, and he points out that the incumbent of such an office, as Surgeon-General of the United States, while working in harmony with State Boards of Health, could not only suggest measures, but, by his paramount authority, could secure a uniformity of action which is imperatively necessary.

THE pamphlet issued by the Commissioner of the United States for the Paris Exposition of 1900 contains information for intending exhibitors. The section of Fine-Arts includes architecture and drawings. Photographs and models of completed buildings, either public or private, will be received, as well as designs for buildings, and restorations from ruins or from descriptions. All drawings shown must be framed, and no artist is allowed to exhibit more than ten works. Applications must be made by foreign exhibitors to the Commissioner of their own country, and on his recommendation, which is made after such selection as he may prescribe, the works which he presents are received by the French Commissioner. Exhibitors are entitled to a card giving them free admission to the Exposition, and the works that they show are entitled to consideration by the jury of award in their class, and, if found deserving, to diplomas, which are classified in five grades, the highest being the Grand Prize; the second the Gold Medal Diploma; the third the Silver Medal Diploma; the fourth the Bronze Medal Diploma, and the fifth the Diploma of Honorable Mention. Further particulars may be obtained from the Commissioner-General of the United States, Mr. Ferdinand W. Peck, at his offices in New York, Chicago or Paris. It may be observed that no charge is made for space in the Exposition, and that all arrangements are of the most liberal character, the French Exposition authorities desiring to secure the best that each nation has to show.

MOST persons know something of the Chardonnet process for making artificial silk out of cellulose, which is already in use in several important factories. Recently, an experimenter, remembering that the true silk is a form of gelatine, has succeeded in forming gelatine fibres very nearly resembling silk, by a process much simpler than that required for the cellulose silk manufacture. This experimenter, Mr. Millar, takes two parts by weight of pure gelatine, and one part of water, and by heating and stirring obtains a uniform solution. The liquid is put in a brass cylinder, with numerous outlets, a quarter of a millimetre in diameter, covered with a cap, fitting air-tight. Air is forced in, under the cap, and the gelatine issues from the outlets in fine threads, which are received on an endless band of cloth. The threads dry in less than a minute, and are wound on bobbins, fumigated with formaldehyde, to make them insoluble in water, and are then ready for spinning and weaving. The fineness of the thread may be regulated both by changing the speed of the cloth band, and varying the pressure of the air over the gelatine. Made in this way, the artificial silk is far less strong than the natural product, especially when wet, and, as the fibres are uniform, instead of being irregular and branched, like the natural silk, the cloth made from them is less soft and rich in appearance. Inasmuch as the silkworm is able to make a strong gelatine thread, it seems as if science might show us how to imitate it; but all gelatine now manufactured is brittle, and it remains for some inventor to find the way of changing its quality. That it is possible to do so, the humble silkworm shows us, and it is certain that the one who is first able to produce a tough gelatine, competing in tenacity with celluloid, will reap a rich reward.

SWISS ARCHITECTURE.

IT was, doubtless, unusual ignorance on my part that always led me to think of Switzerland as a country almost devoid of interest to the architectural student. I had mentally pictured it as one great mountain view, of the colored-photograph order, liberally besprinkled with toy-like chalets ornamented with jig-saw decorations. These I knew possessed no special architectural merit, and yet I imagined them as representing the sum total of Swiss architecture. In the light of a fuller knowledge gained by almost a year's travel abroad, I can only say that Switzerland was the greatest architectural surprise to me of all countries that I visited. Of course, it is not a land of great or imposing buildings; its old towns furnish few examples of purity of style. "Interesting" and "picturesque" are the adjectives to apply to the architecture of Switzerland; and then to me there was always that charming quality of surprise at finding so much where I had expected so little.

It is in the old walled villages of German Switzerland that the wanderer with pencil or brush finds most to claim his attention. It was our lot to spend a considerable portion of our time in the ancient town of Freyburg, famous throughout the world because of its grand organ. Most Swiss towns have the advantage of picturesque settings, and this is the case with Freyburg in a marked degree. It hangs on the side of a hill, it sweeps down into the valley. The rushing River Sarine curves round it. On one side we see the dark entrance to that gloomy gorge, the Pas de Gotteron. Across the south stretches the white and jagged wall of the Alps. Many of the streets of the town are too steep for horses; they are simply flights of stone steps, reminding one of the "stairs" in the dear little town of Clovelly in far-off Devonshire. I have rarely seen so fantastically built a place. The elder Dumas in speaking of it says, "Altogether Freyburg looks like the result of a wager made by some whimsical architect after a copious dinner. It is the most hump-backed city that I know of." Since his day suspension-bridges have been swung across the chasm cut by the river, so that the inhabitants may now reach with ease the fertile country to the south and east, which of old could only be gained by a most laborious descent and ascent. The architecture is varied, — in some instances possessing real merit — while the picturesque quality is everywhere in evidence.

Charming old fountains stand in the middle of the streets, where the women come for water and do washing.

I especially remember one at the foot of the hill with a carved column surmounted by a knight in armor. The gayly-dressed children clatter about it in their games on the rough cobbles of the street that comes steeply down the hill. At the top is the town wall with a gallery running along it. A little chapel is perched tipsily on a point of the cliff, while towers and spires show themselves above the wall as they rise up out of the town beyond. Up near the station is the Tour de Henri, an admirable specimen of fourteenth-century military architecture, while at intervals along the wall and on the neighboring hills stand these picturesque old watch-towers with their high, pointed, red tile roofs. They are open on the city side, so that if the enemy succeeded in capturing them they would still be unprotected to a great extent and therefore the more easily dislodged.

The wrought-iron work in Freyburg used to please me greatly: the old window-grilles were admirable in the sharpness and crispness of their lines; the swinging signs and lanterns over the pavements were hung on brackets of admirable grace and strength, and in some instances the broad, overhanging eaves of the houses were supported by picturesque wrought-iron standards of vigorous lines that were thrust out from the wall below.

The neighboring capital of Berne is a rather uninteresting place,

architecturally speaking. Thun is somewhat better, with the charming old château crowning the hill that flanks the town, and two or three enticing views up and down the principal street that curves through the length thereof. Interlaken lies at the lower end of the Lake of Thun, and it is for the most part a painful assemblage of modern hotels, redeemed to some extent, however, by an interesting old monastery down at the end of the town. The village of Unterseen, lying close to Interlaken, is a very picturesque assemblage of

dirty, old, wooden houses leaning pathetically against one another. In this village is an open square which frequently proves irresistible to the ever-susceptible sketcher in water-colors.

The Lake of Brienz is farther on in the same valley. Meiningen is charmingly situated near the end of the valley, but bears a distressing resemblance to a "boom town" of our Far West. It is really sad that many such places have of recent years sprung up in Switzerland as temporary resting-places for the ubiquitous tourist.

From Meiningen we may go up over the Brüning Pass, with its stupendously grand scenery, and then down,

down, down to where the mediæval-looking old town of Lucerne lies guarding the outlet of its deep blue lake. All Switzerland, like Ancient Gaul, may be divided into three parts, which may be denominated as German, French and Italian Switzerland, the different parts being, of course, affected in language, customs and architecture by their contact with those countries.

Lucerne is decidedly German in feeling, although it is here that you embark for Italy, via the St. Gothard. Two old quaint and crooked covered bridges span the swift stream of the River Reuss where it sweeps away from the lake and curves through the town, while a third bridge, which is open, and quite modern in appearance, lies between the old ones. The under sides of the roofs of the ancient bridges are decorated with interesting paintings. In one, scenes from the lives of St. Leodegar and St. Mauritius are depicted; in the other are a series of representations of the "Dance of Death."

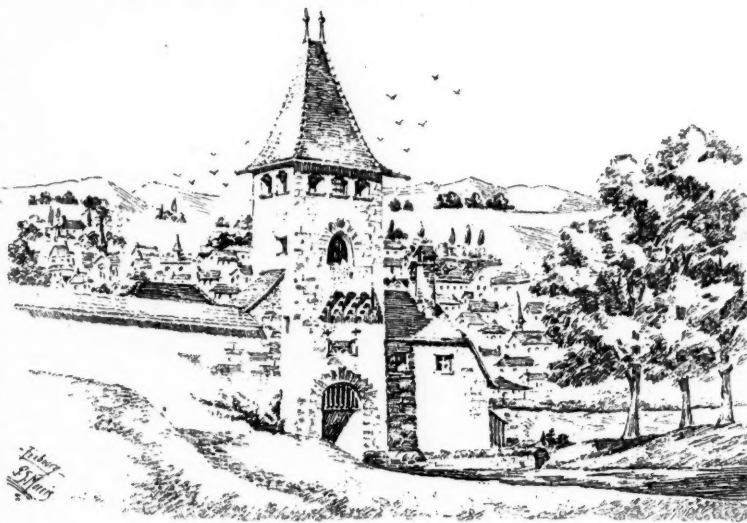
A strong old tower, octagonal in shape, the Wasserthurm, stands in midstream by the side of the bridge nearest the lake.

The wrought-iron work of Lucerne also is very interesting, especially some of the old swinging signs that overhang the street. An ancient wall, surmounted by well-preserved and picturesque watch-towers, rambles along the hillside above the town, giving a rather imposing appearance to the place.

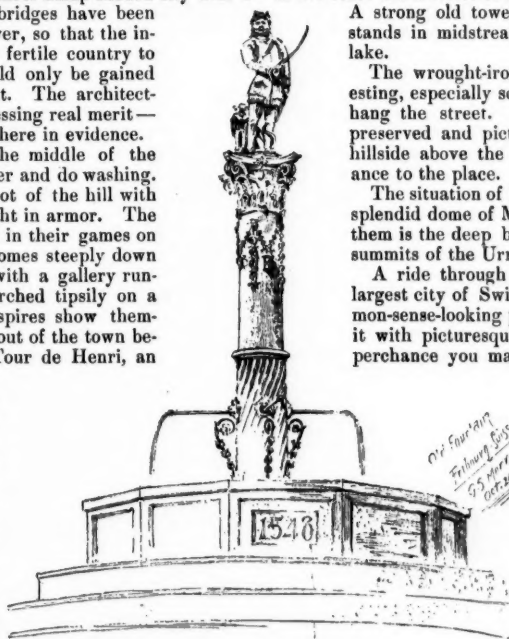
The situation of Lucerne is charming: to the right lies the splendid dome of Mt. Pilatus, to the left is the Rigi, between them is the deep blue lake, and out beyond are the snowy summits of the Urner and Engleberger Alps.

A ride through the low country brings us to Zurich, the largest city of Switzerland, for the most part a plain, common-sense-looking place; but there is an ancient quarter in it with picturesque gables and a big gray church, where perchance you may need your pencil and block. Zurich stands at the end of a lake, just as do Lucerne, and Thun and Geneva. A river spanned by many bridges runs through the town. At night the scenes along its shores are almost Venetian in brightness. But the wandering student need not allow much time for Zurich, unless he wishes to study the modern university and hospital buildings.

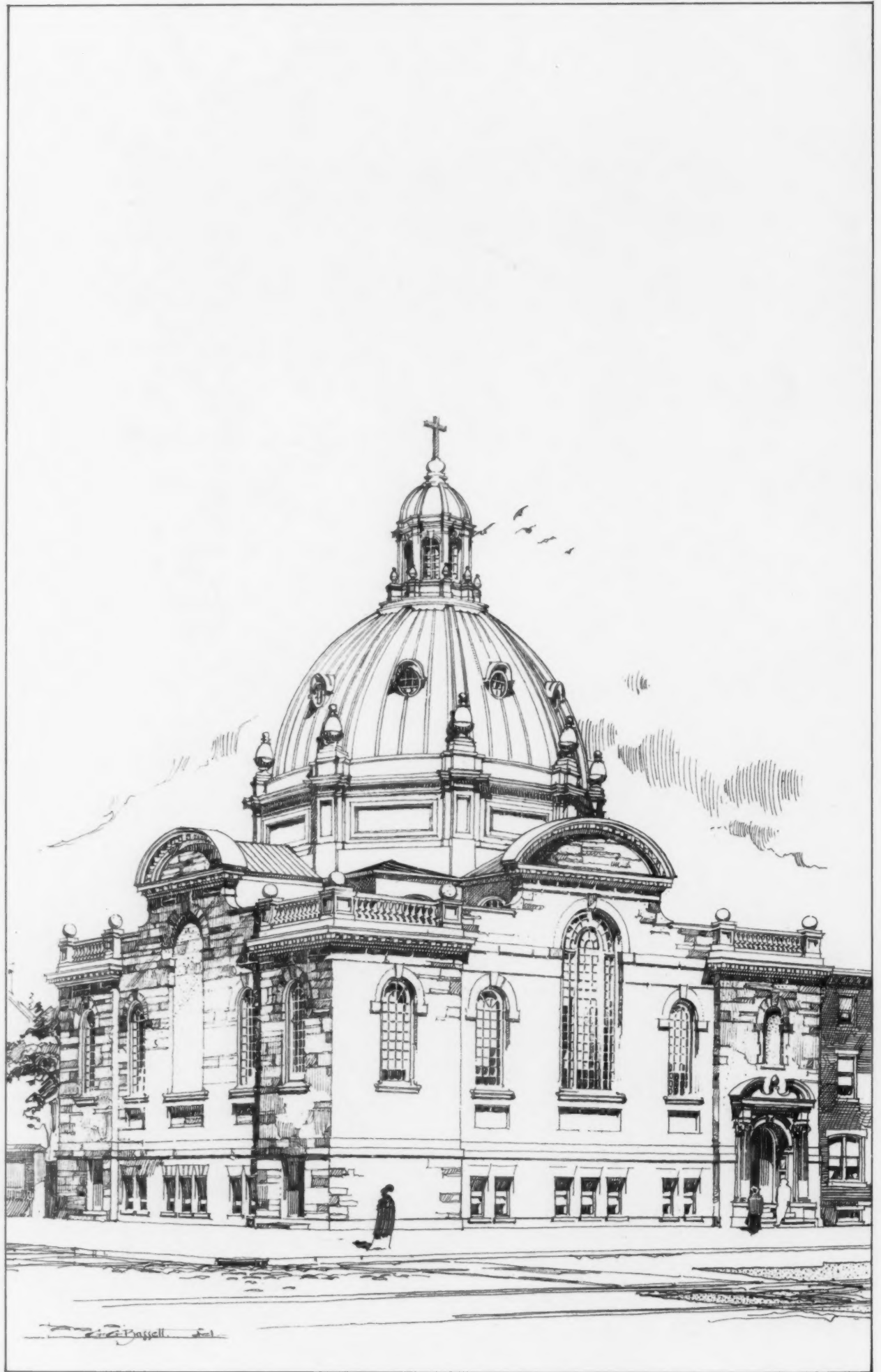
So let us be moving away from German Switzerland, with its guttural speech and bulky forms of architecture, and let us come over into the sunny valleys of French Switzerland, where grow the grapes on terraced slopes, and where a lighter vein, with something more of grace and beauty, seems to run through the language, the architecture and even the natural scenery of the country. It is an interesting ride from Zurich across to the Lake of Geneva. You pass through some charming old towns, such as Solothurn and Bienne,



Freyburg.



Old Fountain, Freyburg.



CHURCH OF ST. JOHN CHRYSOSTOM, PHILADELPHIA, PA.

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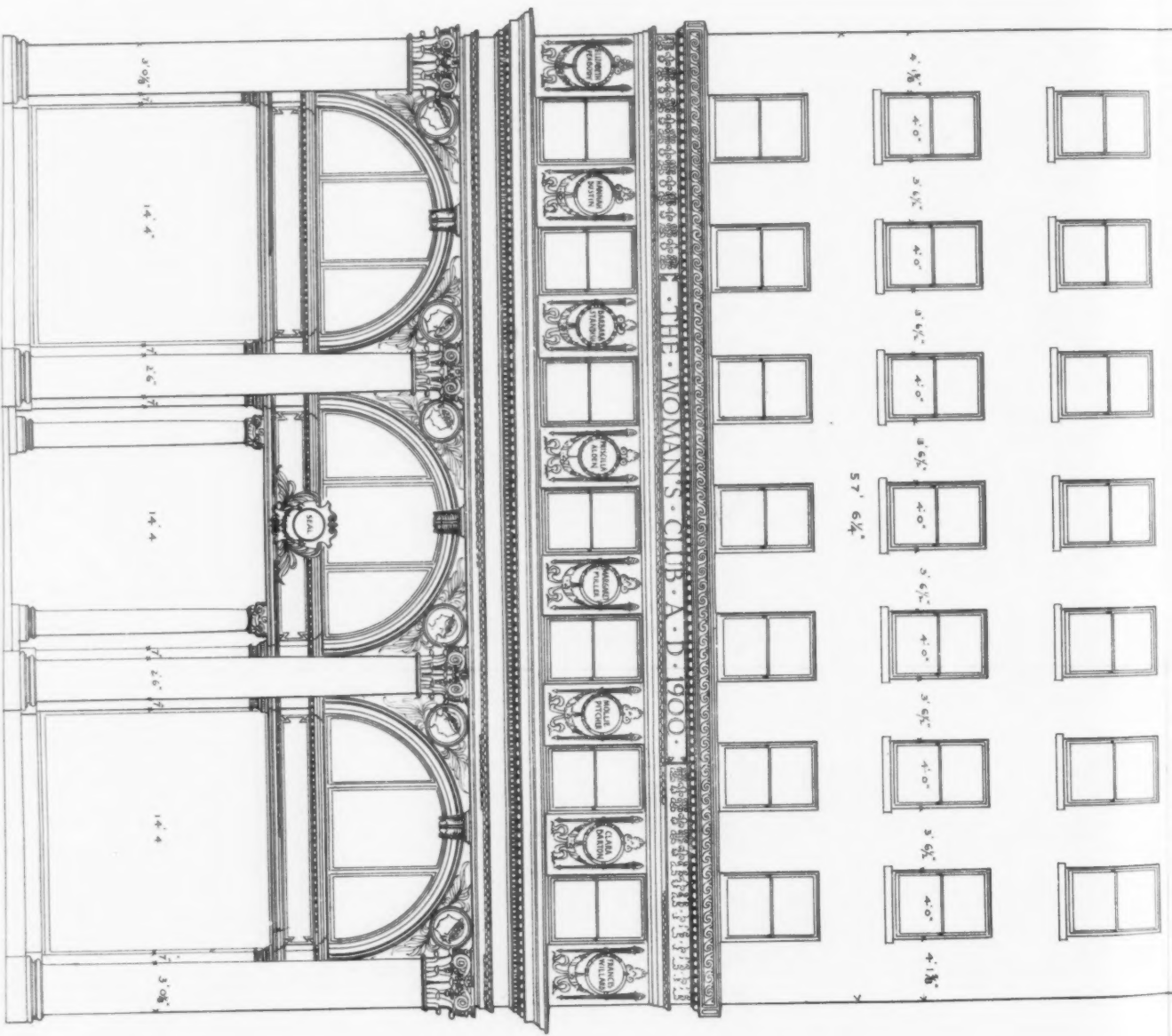
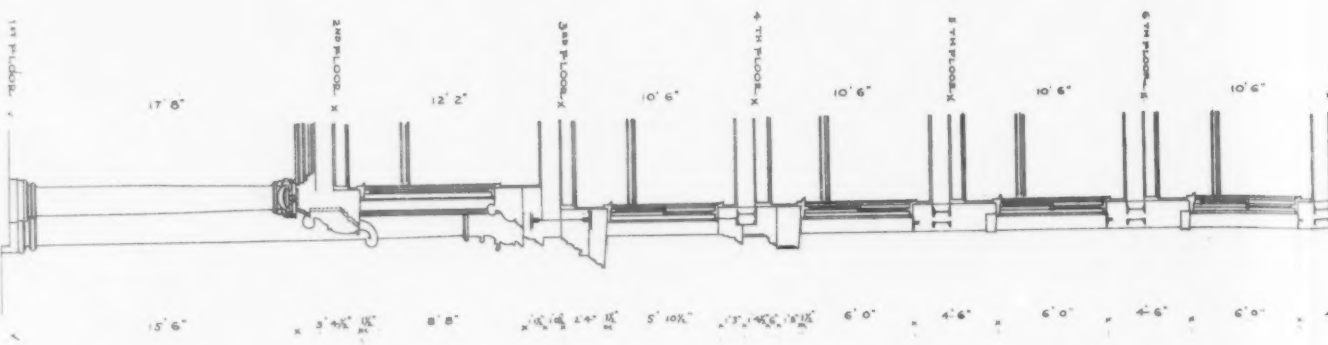
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INTERIOR OF CHURCH OF ST. JOHN CHRYSOSTOM, PHILADELPHIA, PA.

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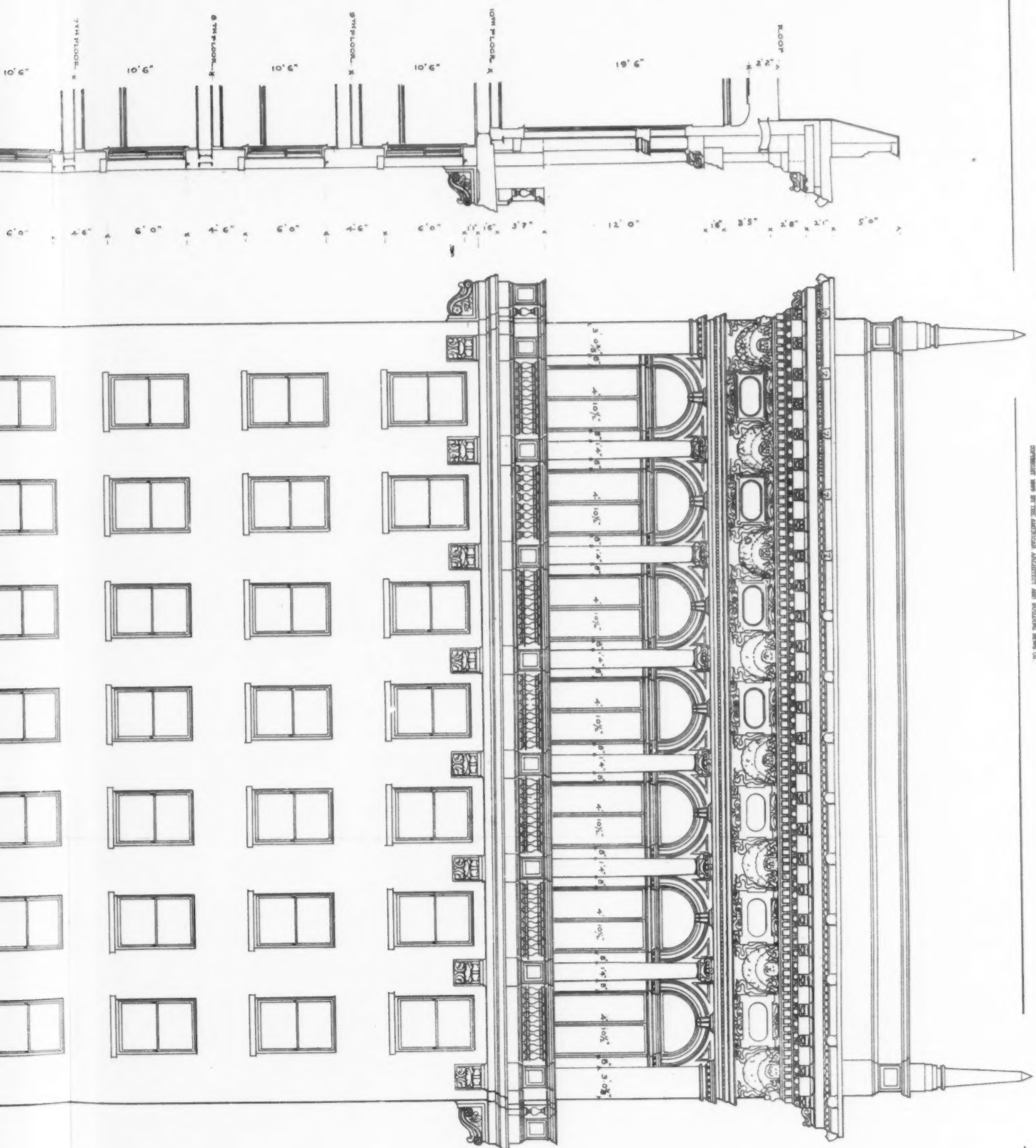


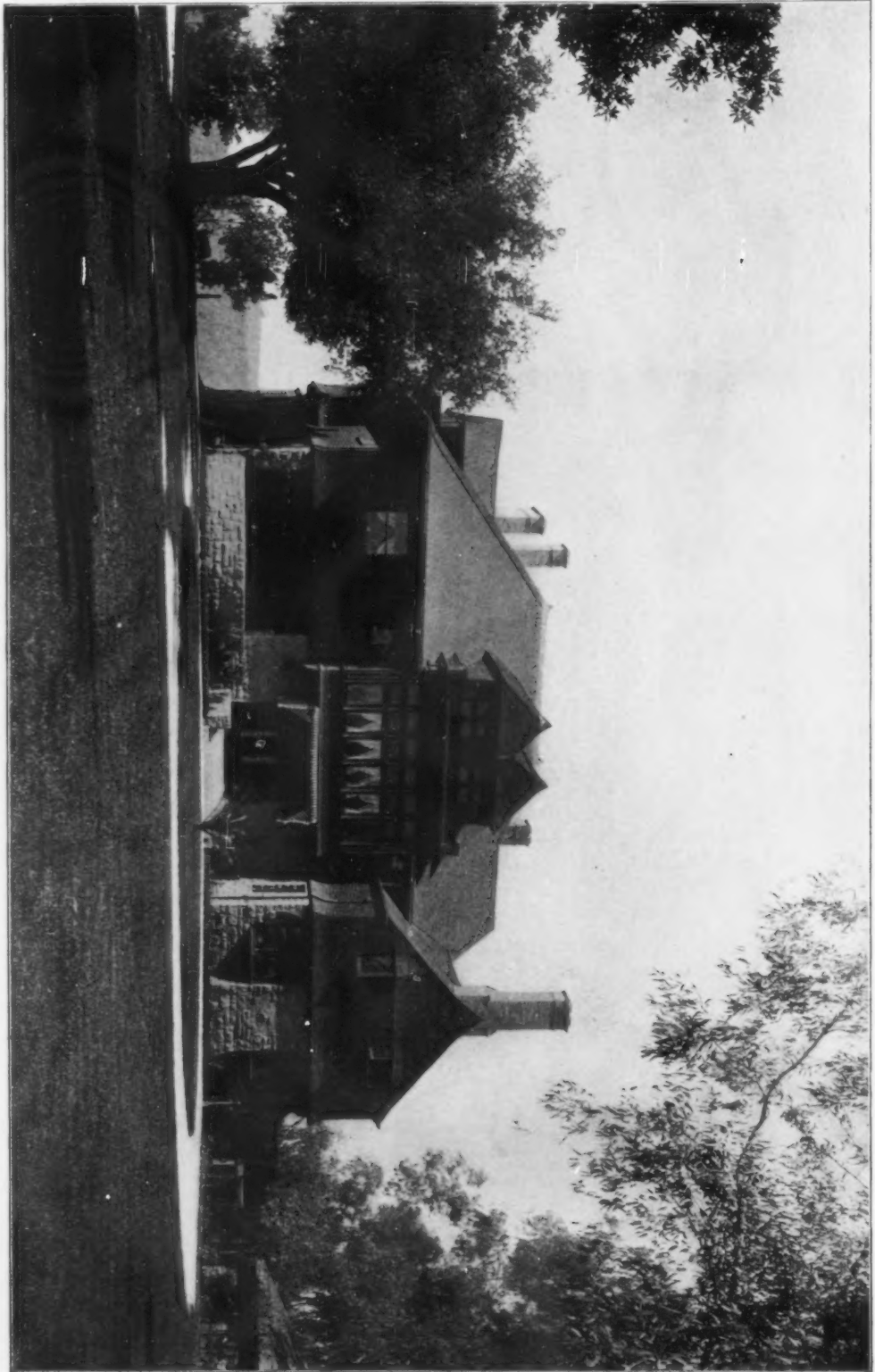
THE WOMAN'S CLUB, BEACON STREET, BOSTON, MASS.
C. H. BLACKALL AND JOSEPHINE WRIGHT CHAPMAN, ARCHITECTS.

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HOUSE OF B. FRANK WOOD, ESQ., PASADENA, CAL.
H. RIDGEWAY, ARCHITECT.

The ever-present lake lies down at the end of the latter town. The Jura Mountains stretch away to north and west; their lower slopes are clothed with vineyards. The charming old château of Nidau is down on the lake-side by the mouth of the little River Zihl. Tall Lombardy poplars, straight and strong, stand round it. The high, pointed roof rises picturesquely from among them. Nidau is a finely proportioned old pile, and an admirable example of an ancient feudal fortress.

I shall long remember the two days' journey from Zurich over to Montreux. It was autumn and all the landscape glowed with golden light, that died away in purple shadows. The foliage, to my surprise, was as bright as that of America. We were far away from the Alps, though at times we had splendid distant views of the Bernese Oberland, tossed in white fantastic shapes against the sky. To the right of our course lay lofty hills or low mountains, reminding us of the Berkshire hills of Massachusetts or the lower Alleghanies of Pennsylvania. But such illusions would quickly vanish when on looking up along some rocky hillside we would see a grim castle frowning out across the valley, or when our train would glide past some ancient village with round towers and pointed roofs rising up out of it and surrounded by a great stone wall pierced here and there by arching gateways. The low mountains by which we travelled were really the Jura range. Often they were rocky and precipitous, again they were forest clad, and in some places they were clothed almost to their summits with vineyards, while little villages nestled in the sun at their feet.

The leaves of the vine at this season turn a rich golden yellow, giving a splendid glow to all the hills on which it climbs. We skirted the northern shores of the Lake of Bièvre and of Lake Neuchâtel, the blue water dancing close beside us and the glorious Bernese Oberland glittering in the distance. We rode on for an

the hillside, above the quaint villages that nestled down by the banks of the lake, until at length we alighted at Montreux. This is far from being the most interesting place, architecturally, along the shores of Lake Geneva, but it is charmingly situated, and with it as a centre you may well explore the lovely Canton Vaud, with all its treasures of beauty and romance.

The villages of Clarens, Vernex, Glion, Territet, etc., are collectively known as Montreux. The division which a stranger would make on first coming into the district would be simply to separate the whole into the old and new towns. The latter lies along the shores of the lake, and is made up of shops and great hotels. The former straggles up the hillside, quaint, crooked, picturesque and dirty. Farther on along the curving lake-shore stands a strong old castle, almost in the water. A square tower rises out of the centre, and round towers are at the corners—but all the world knows Chillon: it needs no description.

The old parish church stands alone upon the

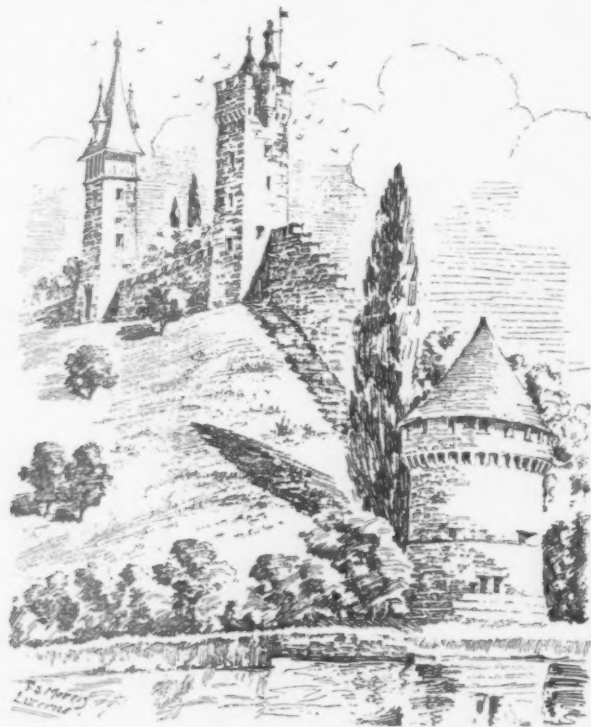
hillside, a little apart from the village. Around it runs a shady terrace. I remember sitting there the first evening that I was in Montreux. The view before me was superb. The lake was steely-blue, like the neck of a pigeon, with here and there patches of green and purple. The great mountains of gray rock soared into the sky from the opposite shore. A little snow lay in their crevices near the top. Farther to the left rose still higher the snow-covered crags of the giant Dents du Midi. Out on the lake strangely shaped, picturesque boats were drifting about: they had high thin sails and looked like gulls stretching up their wings, as they do just after they alight. There is scarcely any winter down here under the lee of the Alps. The scent of roses was in the air. Little birds twittered and chirped up and down the hillside, the twilight settled on the lake, the lower parts of the mountains grew dim, though color still clung to their summits. Lights came out one by one in the town below, and there was the singing of peasants as they went home along the hillside from their work in the neighboring vineyards.

Back among the hills are several charming old châteaux, such as Blonay and Chatelard. The latter is close to Montreux, on the summit of a cone-shaped hill that rises to the north of the town. The slopes of the hill are ribbed with vine-clad terraces. The old château is yellow in color. The bulk of the building is almost square, with a high, steeply-sloping roof. A lower wing with a pointed tower on the end straggles back along the hilltop. I sat in the orchard at the foot of the hill while I sketched the building, the golden colored old castle, perched on the summit of its pointed hill, seeming to fairly glow against the deep blue of the sky beyond it.

The pleasant town of Vevey lies but a short distance to the west of Montreux, where there are several pretty and picturesque bits. In the other direction, over beyond Chillon, is the ancient and half-



Old Chateau, Vevey.



Lucerne.

hour or more through a sparsely settled hill country, and then the railroad took a sudden turn and the Lake of Geneva burst upon our view, while we looked out across the roofs and towers of the old town of Lausanne; then on, along the lake-shore, riding high on



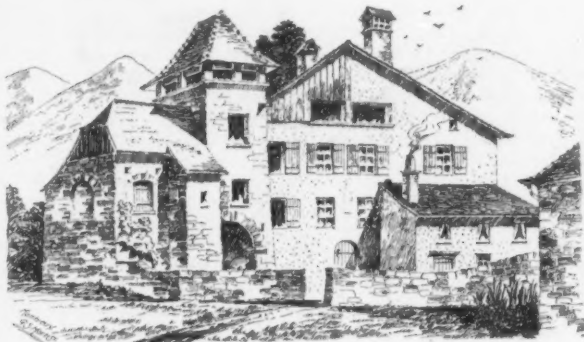
Villeneuve.

deserted town of Villeneuve, with grass-grown streets and many sketching possibilities.

The trolley-cars run out as far as Chillon now. The very thought makes one shudder; but, having made your proper protest, and held

up your hands in horror at this violation of sacred soil, you straightway get into the accursed but most convenient thing and ride out to the old castle, and even enjoy the view on the way thither.

About eight miles to the west of Montreux lies the old town of Lutry. I went there one afternoon in the little steamboat that plies up and down along the lake-shore—a flat little tub of a boat that came sidling up to the landings, tooting its whistle and ringing its bell and noisily slapping the water with its wooden paddles. We curved away along the shore and rounded the point towards Vevey. It was

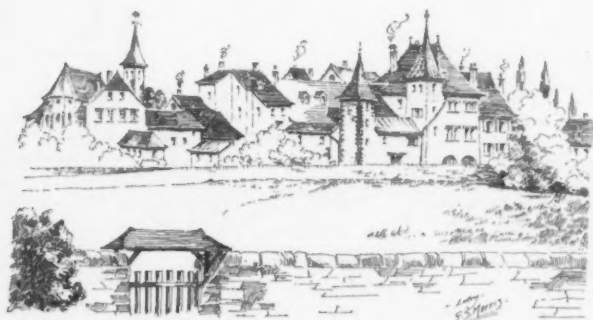


Montreux.

a lovely afternoon. The water was smooth like glass but with a sort of silky shimmer to it. We sailed along under the vine-clad hills. Here and there beautiful streams came plunging and galloping down into the lake. Clumsy carts, drawn by slow-stepping oxen, crept along the hillside roads. We could see men and women working in among the vineyards; there were bits of scarlet and yellow in their dress and they had high, pointed baskets strapped upon their backs. We passed picturesque villages nestled down at the foot of the hills. I especially remember the little town called Cully. There was a level grassy place between the houses and the lake, shaded with tall trees. Some sort of a fair was being conducted there and the peasants were out in full force, all dressed in their gayest and best. The children romped here and there over the grass; old people sat chatting under the trees; off to one side young men and women were dancing to the sound of a fiddle. I have rarely seen a happier, more contented-looking lot of people. It was all as ideally pretty as some Arcadian scene.

At length we glided up to the little dock of Lutry, one of the most picturesque of places. It stands on the side of a hill. The houses look as though they were digging their toes into the ground to keep from slipping down into the lake. The streets are narrow and crooked, overhung by balconies full of flowers. Casement-sashes stand open to the sun; pretty faces lean out from them. The colors of brick and stone are rich and warm. Green wooden shutters lie back against the walls. Quaint gables break the sky-line, and strong old towers with high, tiled roofs rise up all through the town.

Space forbids me to write more of the beauties and charms of this most attractive corner of Switzerland. For the same reason I must entirely leave out Italian Switzerland; a most unfair omission on the part of one who is attempting to write of the varied architecture of the little republic. One is apt to forget that the Italian Lakes, so called, with their accompanying towns, lie to a great extent within the Swiss borders. I remember it surprised me almost as much to



Lutry.

find that Lugano was in Switzerland as to learn that Mt. Blanc was in France.

Switzerland is a country of many surprises and of endless variety. It bears close study, but is often neglected by the architectural student, and you soon come to love with all your heart this dear little country with its big mountains and deep valleys, its placid lakes, quaint villages and picturesque châteaux.

GEORGE SPENCER MORRIS.

ARTS AND CRAFTS EXHIBITION, BOSTON.

AS we turned into the *impasse* in which Copley Hall opens, the scattered pairs and trios of listless men and yawning women we met gave all the proof that was needed that Boston was holding one more exhibition, so we passed the doorway of the Arts and Crafts Exhibition with the expectation of undergoing the same penance that had to be borne two years ago, and so rather braced ourselves for the shock of the first glimpse and made a vow to remember the mental phrasing of this first impression. This phrasing proved to be "More like a museum, less like a shop, not at all like a bazaar," and the instant record of the first glance called for no change after a closer inspection of what has been truly a very interesting but, in some ways, not very instructive show. The exhibition of two years ago was as far removed in quality from this one as this is from the exhibition that as we feel, mistakenly very possibly, should be brought together by an Arts and Crafts Society. The exhibition this year is distinctly a museum exhibit, conceived and arranged on museum principles, and in reality is nothing more than a small section of South Kensington brought into close juxtaposition with a still smaller section of the Hôtel Cluny, both sections admirably arranged for ease of inspection and so judiciously classified that neighboring exhibits do not clash one with another. The openness of the arrangement, due to the fact that the committee showed unwonted determination to allow no doubtful work a place that could on any fair excuse be denied, adds greatly to the pleasure of the visitor, even when there are few to incommode him as he turns from one thing to another or steps backwards to take in something higher on the wall. There are some vacant spaces on floor and wall which the committee could unquestionably have filled over and over again, and the fact that they chose to leave them unfilled has done as much to give "tone" to the undertaking as anything could have done, since these vacant spaces attest to the public the good faith of the committee towards their ideal and a willingness to stand or fall under the weight of evidence that here supports their judgment.

While there is nothing that suggests the bazaar and while there is much that suggests the museum, there is still far too much that recalls the high-grade retail-shop and almost nothing at all that recalls the work-shop, and it is at this point that we take issue with the exhibition or with the Society itself. We confess that we hardly know what an Arts and Crafts Exhibition should undertake to show—the English name is bipartite and possibly its parts are not intended to be equal and coördinate. What is the proper function of such an exhibition, and what its proper constituent parts, and how do they differ from an exhibition of industrial art, a mechanics' fair, or an exhibition of decorative art, and how entirely must the fine arts be excluded?

If we understand the object of the movement of the Arts and Crafts Society, it is to encourage the individual craftsman and artist-artisan by letting him understand that there are people who appreciate him as an individual and can pick out his handiwork from others of its kind through recognizing his touch, and are willing, perhaps, to pay more for his work because it is his, in the same way that they pay more for picture or statue signed by a well-known name. With this in some degree, doubtless, mixed the intention of educating the craftsman and stimulating his ambition by bringing together in museum cases specimens of excellent handiwork that have been made by his fellows working in other shops in other towns.

To us the first aim seems to be the more important one to achieve. The museum factor can be and is capably taken care of by the museums proper and by those widely distributed and ever-varying museums, the retail-shops, with their attractive show-windows open to inspection and study without charge, and it is this prime object, as we look at it, which has received rather inadequate attention as yet by this Society. Besides this the public has another interest, and a legitimate one: it desires, or should desire, not only to be amused and interested but to be instructed. It wishes, or should wish, not only to know who the man is and what he has accomplished but just how he has accomplished it. The finished results, polished, varnished, gilded, lacquered, or however else, can be seen in the shops, behind just as polished glass, in just such cases and just as artistically arranged; but in the shops the public can learn nothing of the method, nothing of the progressive steps in the process, nothing of the hours of patient labor required to accomplish seemingly trivial results.

To us the one exhibit at this show that was more nearly in line with the sort of exhibit that should find a place there was the beautiful unfinished carved screen and mirror frames exhibited by Samuel Haywood, although we are in doubt whether Mr. Haywood himself actually did the carving or whether some unknown artisan has been deprived of his proper glory. The cleanness of the stroke, the crispness of the line and angle have a value, to those who understand, in this unfinished form that they cannot have after the wood has been gilded and burnished, and come to look as if it might be stucco-work of some kind cast in a gelatine mould. In the almost equally interesting carving by Mr. Joseph Zwink there is not that doubt of real authorship that exists in the case of the Haywood frames. These two exhibits are really almost the only things in the room that suggest the answer to the universal question, "How is the thing done?" It is the desire to get an answer to this question which in part accounts for the attractiveness of the loan collection in the neighboring room, for here in very many cases the wear and tear of time has answered the question by showing where joints are, what

are the under layers to the surface finishes of various kinds, what sort of a web is the proper foundation of such a stitch, what dye is likely to hold its tone and shade and what forms are to be avoided if one's labor output is to stand the test of time and use. Of course we cannot know who these old workmen were and we cannot respect them by name as we would, but we can respect and know by name the individual workmen of our own time, and we ought to; it is a distinct pleasure to know that Signor Tito Conti, for instance, is a workman who knows how to model with admirable refinement certain architectural forms that in the shape of brickwork are put on the market by Fiske, Homes & Co., and Signor Conti and his employers will probably find it to their benefit to have it known that there is one man at least who can do such admirable work.

The work turned out by the Dedham Pottery is so generally understood to be Mr. Robertson's own work that it may be fair to credit him with the actual handiwork of the beautiful vases, with their great range of lustrous glazes, in this exhibit. But is there not by this time some skilled workman in his employ whose name should begin to find a place in catalogue or on label in such an exhibition as this? And when we look at the very attractive forms and soothing biscuit enamel of the pots, vases and platters turned out by the Grueby Faience Company are we to understand that besides designing them Mr. Kendrick's own hand actually threw and modelled them? If not, then in this place, we think, there should be joined with his the name of the craftsman whose skill, as it surely might have marred so it as certainly, has supplemented Mr. Kendrick's design, and hence deserves acknowledgment.

To a very considerable degree the name of the individual worker is given in the catalogue, but it is not always given on the label in actual connection with the exhibit, and in the catalogue the type does not attempt to differentiate between the actual executing craftsman and the employer, who for these purposes is an altogether inferior creature, so much so that we are indignant to find so much of the ironwork labelled with the names of business firms—and with their own trade business cards at that! The Hecla Ironworks, for instance, who appear to claim all the merit for a large bronze door which the catalogue tells us was designed by Baldwin & Pennington, architects, of Baltimore, but does not tell the name of the workman who translated their design into the needed full-size mould.

The presence of a pillow-lace worker and a rug-weaver on the platform shows that the committee realize that there is interest and instruction to be had in watching the nimble work of skilled fingers, and it is probable that with more space at command they would have expanded in this direction; but unfortunately most of the handicrafts are the cause of a good deal of litter and more or less noise and so, perhaps, hardly a fit component of what is largely—too largely—a mere "social function" which the leisure and cultivated classes like to take a part in. But it seems as if one trade at a time might be shown in working operation at each succeeding exhibition to much real advantage and at not too great a cost of dirt and noise. For instance, if next time, taking the cue from the admirable displays of silverware—both the loan exhibits and those designed by Mr. Barton P. Jenks—more of a feature should be made of silverware, and the Gorham Manufacturing Company or some other firm of silversmiths should be asked to set up a few stalls where could be carried on the work of chasing, embossing, engraving, spinning, and so on, we fancy it would be one of the most attractive as well as instructive features of the display.

In the main the American portion of the exhibition was of extraordinarily even quality throughout, and there was practically very little in the room which ought to have been excluded. Most of the things of this nature, things which one would like to have avoided seeing were the work of amateurs who, it may not be unfair to assume, may have had some more or less direct family connection either with some member of the Society or of the Committee itself. It seems to us that a committee cannot be too careful in excluding the work of the amateur from such an exhibition as this, and it is not going too far, perhaps, to say that the work of no amateur should be admitted unless in those cases where the amateur is really leading, and either inventing a new process in art industry or else, as in the case of the Misses Ware, is reviving an old industry. For the work done by the Misses Ware in the way of leather hangings after the Spanish fashion, while we admit that we have not the least admiration for or sympathy with the product, we nevertheless readily admit that there are many people who do admire work of the kind, and the specimens shown by these ladies are certainly good of their kind, and interesting. The kind of leather-work which more particularly appeals to our taste is that connected with the binding of books, and the show-cases contain several very interesting examples of tooled-leather binding—the work of amateurs; and once more we note that Mr. George R. Shaw is occupying his spare time in this direction, and even finds amusement in such trivialities as working, with a very perfect workmanship, a small leather snake. But, for the work of the amateur who simply practises the methods (as he or she understands them) of the professional artist-artisan, we think that such an exhibition as this is not the place.

The *favrile* glass-work of the Tiffany Company is interesting and attractive, but not particularly instructive, and is, moreover, purely a museum or shop exhibit. In fact the same criticism, if it is worthy of the name, can be made of a very large portion of the exhibits, including the admirable exhibits of cut-glass ware and not excluding even the best of the silverware.

Two of the sections, and in some ways the two most interesting of all, are very closely related to the fine-arts themselves, and these two sections are the ones devoted to photography and the extraordinary collection of drawings, engravings and paintings exhibited by the Century Company and the Scribners. There is not a drawing or engraving which is not worthy of close attention, and it is a matter of much regret that Miss Caroline A. Powell's extraordinary wood-engravings were not placed higher on the line, where they could be better seen. There seemed to be no good reason for this, as this corner of the room is the one where there is most vacant space to be found. The photographic exhibit is very interesting, but the subjects selected by the exhibitors, or by the committee, have too much of a sameness in subject-matter to make a really interesting show, and it was a relief to discover on the lower line some extremely interesting photographs of ancient tombstones in various parts of New England which have been discovered and photographed in a very artistic manner by Mr. Howland S. Chandler.

In the loan collection the exhibit which, perhaps, attracted most careful consideration was the collection of swords and rapiers, loaned by Mr. F. Gair Macomber, which were not only casually interesting to almost anybody who would look at them, but made a very instructive exhibit because of the admirable manner in which the exhibit had been catalogued; and when it is perceived how much the notes which describe and illuminate this exhibit add to the interest and enjoyment of the visitor who inspects the collection, it would seem as if the succeeding exhibition-committees would take the hint and incorporate in future catalogues a little more of the South Kensington handbook character, and so give to their catalogues a permanent worth which until now (in common with other exhibition catalogues) they have distinctly lacked. In a general way we have nothing but praise to give to the catalogue itself. It is openly printed in clear type, but it would have been better if the printer had used a greater variety of type so as to better discriminate between groups and classes and the individual exhibits under them. We think, too, that the method of numbering by groups is a mistake unless it is supplemented by a secondary enumeration continuing in regular sequence throughout the entire series of exhibits, for numerical sequence has the same meaning to the common mind as the alphabetical arrangement in indices, and is one which is understood by everybody, while, small as this exhibition is, the observer is not a little puzzled at times to discover which of the few groups given in the index is the one which is most likely to contain the exhibit before him which bears a number that he cannot find. There is another point in which the catalogue is worthy of praise—in that it contains merely a legitimate amount of advertising matter. Evidently, just enough advertisements have been taken to somewhat lighten the cost of the catalogue itself without attempting to turn the catalogue into a money-making affair, with the result that the unhappy visitor has to carry round several pounds' weight of irrelevant matter which he does not care for, while the presence of this unneeded matter prevents his readily turning to the few pages of the catalogue proper in which lies his real interest.

In a general way this exhibition fairly deserves a more generous meed of applause than we may seem to have given. It is certainly one of the most interesting exhibits in its way that has ever been held in Boston, but we cannot help feeling that it might have been made a much more instructive one.

THE COMPRESSIVE STRENGTH OF CONCRETE.¹

CONCRETE, especially in the construction of piers and foundations, is coming every year into more extensive use. It is, therefore, desirable to determine its strength, and more particularly the resistance to crushing, as it is to a compressive force that it is most often subjected. The results of very few tests with this end in view are given in any of the treatises on concrete or building-materials, or in the engineering journals. A few results may be found, but they are scattered and very irregular, and little information obtained from them.

During the past three years a few tests have been carried on by the students of Civil Engineering at McGill University. The first series, two years ago, was to determine the effect of different percentages of water upon the strength, and the best percentage to use. This was found to be about 20 per cent of the sand and cement. Last year tests were made comparing the strengths of concretes made respectively from an English Portland and a German one. This year tests were made upon sand-cement, in order to compare it with the Portlands, and also to determine the best proportions in which to mix it in making concretes.

This cement was "Cathedral" brand sand-cement, made by the St. Lawrence Portland Cement Co., of Montreal. It is made of equal parts of Portland cement and kiln-dried pump-sand. These are run together into a revolving cylinder half full of flint pebbles, where they are thoroughly mixed and ground to an impalpable powder.

The conditions under which the tests were made this year were the same as those of the first series (published in paper No. 117, Trans. Can. Soc. C. E.), except that the blocks were made 9" x 9" x 12" instead of 12-inch cubes, as the cubes were found, in some cases, to be too strong for the testing-machine to break. The blocks

¹ A paper, by W. B. Anderson, Stud. Can. Soc. C. E., read before the Canadian Society of Civil Engineers Thursday, March 16, 1899, as determined by tests made at McGill University.

were tested with their long edges vertical, and resting on a steel plate which was on a ball-and-socket joint, the plate above the block being fixed. Sheets of rubber were inserted above and below the block to give a more uniform distribution of the load. The blocks were allowed to stand in the moulds for about two days, and were then removed and placed in water, where they were kept until the time of testing.

The results of all the tests made in 1898, and the more striking ones of other years, are here presented in tabular form :—

RESULTS OF EXPERIMENTS ON THE COMPRESSIVE STRENGTH OF CONCRETE.

No. of Test.	Date of Test.	Brand of Cement.	Mixture.			Percentage of Water.	Weight in lbs. per Cubic Ft.	Breaking Load, lbs. per sq. in.			Proportion of Mortar to Broken Stone.	Relative Amounts of Cement.	Relative Costs.	
			Cement.	Sand.	Broken Stone.			One Week.	Four Weeks.	Two Months.			First Assumption.	Second Assumption.
1	1896	German Portland "Hemmoor" Brand.	1	2	4	20	139.5	746	626	507	60-80	157	174	126
2	"		1	2	5	"	"	"	703	"	-100	137	152	121
3	"		1	2	6	"	"	"	728	"	-120	122	135	116
4	1897		1	1	1	22	142.3	"	"	"	60-30	367	407	206
5	"		1	1	2	22	146.7	1,037	"	"	-60	275	305	175
6	"		1	1	3	3	148.0	"	"	"	-90	220	244	155
7	"		1	1	4	4	153.3	"	"	"	-120	183	204	144
8	"		1	1	5	5	151.2	"	"	"	-150	157	174	135
9	"	English Portland "Anchor" Brand.	1	2	2	20	143.5	494	565	"	60-40	220	259	150
10	"		1	2	3	20	146.0	611	555	"	-60	183	216	139
11	"		1	2	4	20	148.5	819	613	"	-80	157	185	131
12	"		1	2	5	20	150.5	581	640	"	-100	137	162	124
13	"		1	2	6	20	150.0	500	698	"	-120	122	143	120
14	"		1	3	3	3	139.5	333	205	"	60-45	157	185	122
15	"		1	3	4	4	139.0	"	366	"	-60	137	162	117
16	"		1	3	5	5	143.0	"	386	"	-75	122	143	113
17	"	1	3	6	6	147.0	"	357	"	-90	110	129	110	
18	1898	Sand-cement "Cathedral" Brand.	1	3	5	5	146.5	144	274	400	-75	122	122	104
19	"		1	3	6	6	146.4	110	182	218	-90	110	110	102
20	"		1	3	7	7	150.3	210	322	"	-105	100	100	100
21	"		1	2	4	4	150.6	316	441	"	60-80	157	137	119
22	"		1	2	5	22	148.5	275	477	494	-100	137	137	114
23	"		1	2	6	20	154.0	521	639	670	-120	122	122	111
24	"		1	1	3	3	149.8	412	490	"	60-72	200	200	134
25	"		1	1	4	4	151.5	446	679	"	-96	169	169	126
26	"	1	1	4	4	153.5	536	741	"	-108	157	157	123	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Blocks marked thus (X) remained unbroken under a load of 1,050 pounds per square inch.

Column 13 shows the relative quantities of cement in the different mixtures, and some attempt has been made to estimate the cost of the different mixtures on this basis. The relative costs are compared on the following two different assumptions :—

First assumption.—Column 14 shows the relative costs if it is assumed that the sand and stone can be secured on the spot and their cost ignored. The cost of different brands of cement is taken as below.

Second assumption.—Column 15 shows the relative costs of the different mixtures and brands on the following assumed costs per cubic foot of materials :—

English Portland.....	53 cents.
German Portland.....	50 "
Sand-cement.....	45 "
Broken stone.....	8 "
Sand.....	2 "

The cost of labor is not taken into account, as it will be the same in every case, and these costs can at best be only a rough approximation.

The main requisite for an economic and good concrete is to have just enough cement to completely surround every grain of sand, and just enough of this mortar to fill every interstice between stones. Column 12 gives the proportion of mortar to stone, and it will be seen that with each different mortar the strength increases as the proportion of stone increases, or as the volume of interstices between the stones decreases, because the mortar is not so strong as the stone. The strength also increases with the richness of the mortar in cement, so that the strongest concrete will be one with very little sand and a great deal of stone. Those with the 1 1 mixtures of mortar are very much stronger, though, also, more expensive, than the others. The sand-cements are found to be weaker than similar mixtures of Portland by from 12 per cent to 40 per cent. The manufacturers claim that with a mortar, such as a 1-10, with a great deal of sand, this cement is stronger than the Portland. This remains to be determined.

If the concrete is desired to have very great strength, a Portland cement and a rich mortar might be used, but if weight is the main consideration, with only moderate strength required, a concrete of sand-cement will be much cheaper and quite efficient. Of course, much cheaper mixtures than the ones tested can be made, but they will be weaker accordingly after a certain limit is passed, which

limit has not been reached in these experiments. One of the cheapest and a fairly strong concrete is No. 23. This mixture would seem to be the best one to use if excessive strength were not required.

The loads given in the table are the actual crushing loads. The blocks showed cracks or signs of failure before this load was reached, but it was thought better to make the comparison on this basis. For purposes of comparison it is best to take the results of the four-week tests, as the concretes then show more uniform results than at one week, and the two-month tests are not complete.

These tests are still very incomplete, and it might be profitable to make further tests with concretes containing more stone. The strongest of the sand-cement mixtures is No. 26, and with this rich mortar it looks as if it would stand a good deal more stone, thus increasing both the strength and weight, and reducing the cost. Tests of this nature will likely be carried out at McGill University in future years.



[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

CHURCH OF THE DIVINE PATERNITY, W. 76TH ST. AND WEST CENTRAL PARK, NEW YORK, N. Y. MR. W. A. POTTER, ARCHITECT, NEW YORK, N. Y.

[Gelatine Print, issued with the International and Imperial Editions only.]

BUSINESS BLOCK AND PUBLIC HALL, MADISON, N. J. MESSRS. CHARLES BRIGHAM AND WILLARD P. ADDEN, ARCHITECT, BOSTON, MASS.

THE STERLING ARMS, PINEAPPLE STREET, BROOKLYN, N. Y. MESSRS. J. G. GLOVER & H. C. CARREL, ARCHITECTS, BROOKLYN, N. Y.

THE CHURCH OF ST. PIERRE, CAEN, FRANCE.

THE CHURCH AT FOLGOET, BRITTANY, FRANCE.

This church was begun in 1409 and consecrated ten years later.

[The following named illustration may be found by reference to our advertising pages.]

SAMPLES OF SWISS WROUGHT-IRON WORK. SKETCHED BY MR. GEORGE SPENCER MORRIS.

SEE article elsewhere in this issue.

[Additional Illustrations in the International Edition.]

ENTRANCES TO THE CHURCH OF THE DIVINE PATERNITY, NEW YORK, N. Y. MR. W. A. POTTER, ARCHITECT, NEW YORK, N. Y.

[Gelatine Print.]

OLD TOWN-HALL, GOSLAR, PRUSSIA: FROM THE EAST.

[Gelatine Print.]

ACCORDING to an old chronicle, the Goslar Town-hall, which stands on the market-square of the old imperial city, in close proximity to the quaint Kaiserworth building (guild-hall), illustrated in an earlier issue (see *American Architect* No. 1187), and also visible in one of our present plates, was built during the reign of Lothar von Supplinburg, who was German emperor from A. D. 1125 to 1137, although the building itself bears no marks of so early an origin. It is more likely, however, that the structure was erected some time in the thirteenth century. The pile is composed of three distinct parts, the principal part fronting east on the square, the so-called chapel-building (because it was reared over a chapel, or sepulchral vault), occupying the southeast corner of the site, both built of massive stone, and the annex, a half-timbered structure, on a stone basement, erected much later, in 1560, on the north side. The tract connecting the town-hall proper with the chapel-building is a modern addition. During the last five years the exterior of the interesting building on which the tooth of time had left its marks has been subjected to a repairing and rejuvenating process, by which the plaster-covering was removed from the old Gothic façades, and many ill-advised alterations and additions wrought by ignorant craftsmen were torn out, and the structure made to appear, as nearly as possible, in its old-time character. At the north end of the open arcade, in front of the small coupled window, there was formerly the pillory, or whipping-post, on a raised platform. The little niches, with pointed arches, between the large arches, were probably used, in times long gone by, for holding lanterns to light up the market-square. The second story of the chapel-building contains a fine room having

richly frescoed walls and ceiling, the work of Hans Raphon, an ancient master. The old wood-carvings of the panels of the half-timbered north-wing, also the painting of the rough-cast portions, have been neatly restored to their original appearance. An old curiosity of the town is the alms-asking angel, a statue having its place in front of the north pillar of the arcade, where it has sat for centuries, receiving in a strong-box the alms deposited by the citizens. This figure may be seen in our second plate.

VIEW OF THE SAME FROM THE NORTH.

[Gelatine Print.]

NETHERCOURT," FINCHLEY, ENG. MR. PERCY G. STONE, ARCHITECT.



[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

ARTISANS' HOMES IN NEW ORLEANS.

NEW ORLEANS, LA., April 14, 1899.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—If I had known that I was to be honored with an editorial mention in so prominent a journal as the *American Architect* I would have gladly furnished more information about my suggestions for artisans' homes here, alluded to in your editorial of April 8th.

An improved practice in New Orleans, now common, for laying floors in brick stores and raised cottages, so called, on the ground surface, is to nail the flooring-boards to small string-pieces which are saturated with creosote or similar material and imbedded in a composition of tar and cinders rolled compactly on the surface of the earth.

The raised, or basement-cottages (so called because the reception-rooms are placed on the upper floor and reached by outside steps also, and the dining-room is placed on ground-level) was chosen by me as the type of artisans' homes for this section mainly because the kitchen, laundry and dining-room do very well with nine-foot ceilings, when the openings are ample, and this makes the stair so much easier than for the usual twelve or fourteen foot ceilings for both floors.

The ceilings for reception-rooms and chambers are found to be rightly placed at eleven feet when the openings reach nearly to the ceiling, although the result is a different architectural treatment from the very high-ceiling rooms. The dining-room below should have a timbered ceiling.

The above, however, is not the commonest form of residences having more than one floor. The two-story houses, so called, are built upon brick piers or perforated walls about three feet from the ground and have joists under both floors, like houses over cellars. This space under is to give ventilation, but does not seem indispensable, since sealing the ground surface has been practised, and proves a much greater benefit to plumbers than was expected, since the recent zero weather split the water-pipes throughout the city.

A large proportion of the hot-water heating systems in New Orleans were ruined by freezing.

The cisterns, which must, by law, be furnished residences for rent, to supply rain-water, are made of best seasoned cypress lumber one and one-half or two inches thick and are placed at back of the houses on brick foundations, the one for the second story being placed on the top of the lower, and sometimes a third above these to supply the flush-closets.

A magnificent system of drainage for city rainfall, costing many millions of dollars, is well advanced. As the city is enclosed by earth levees, this will take also the seepage through them at high water.

The pumps to lift the water to Gulf-level are run by electric power from a central plant.

A new water-supply and a complete system of sewerage is planned for the near future, giving free water to flush the closets and reduced water-rates for other purposes. The question of a two-mill tax to make this possible goes to the taxpayers' vote in a few weeks with very strong petitions from leading citizens.

Very truly yours,

WILLIAM WOODWARD.



HEATING HOUSES IN KOREA.—Every now and then there are opportunities for learning how immeasurably better than we the ancients did some things which are now supposedly done in excellent ways; and even at the present time, in quarters remote from highly developed civilization, results of various kinds are sometimes obtained by ways

and means which are admirably suggestive of the fact that it behooves us to be modest in our claims to superior accomplishments, says *Cassier's Magazine*. In a recent United States consular report, for example, made by Mr. Horace N. Allen, of Seoul, in Korea, an account is given of the Korean method of heating dwellings, which, in point of principle at least, is much ahead of any of the heating systems in every-day use all over Europe and America. In building their houses, the Koreans lay down a system of flues where the floor is to be. These flues begin at a fireplace, which is usually placed in an outer shed or connecting closed alleyway. From this fireplace the flues extend in a more or less curved direction, like the ribs of a round fan, to a trench at the rear of the room, which in turn opens into a chimney, usually located some distance from the house. Flat flagstones are then placed carefully over these flues, and the whole is cemented over, and finally covered with the thick oil-paper for which Korea is noted. This paper keeps smoke from entering the room, and a little straw or brushwood, used in the fireplace for cooking the rice, serves to heat the stone floor, and give an agreeable warmth, which lasts till the time of the next meal. Two heatings daily serve to give a comfortably warm floor, upon which the inmates sit in the daytime and sleep at night. The fuel burned is a mixture of fine coal-dust and wet, red clay, made into balls by hand. These balls, when dry, are used by foreigners in their stoves, the latter having been retained in preference to the native system, chiefly because the paper floors would not stand the wear of foreign shoes and furniture.—*Boston Transcript*.

KENSINGTON PALACE.—King William III purchased the property. The Dutchman wanted a suburban mansion, and became much attached to Kensington, though he was also fond of living in Hampton Court, where he went for recreation and hunting on Saturdays. He added so largely to the house that as a palace it bore only the remotest resemblance to the home of the "black funeral Finches," though that quality of unpretentious solidarity which had at first attracted his eye he retained. It is this air that still characterizes Kensington Palace: one that apparently so completely dominated it that in sympathy each sovereign owner who enlarged the mansion did so in keeping with the original intentions of the King's architects, Wren and Hawksmoor. Kensington Palace is indeed so plain, and even pathetically simple, that its dignity is lost upon the vulgar beholder. "Call that a palace?" observed a poor man, who was much disappointed when his search for the magnificent erection he expected to find resolved itself into a sight of the mellow-bricked square residence so commonplace in his eyes: "I should say this was Kensington Workhouse, and Kensington Workhouse the palace." Nevertheless in this house—"a palace to drink tea in," as Leigh Hunt called it—was born our gracious Queen.—*Pall Mall Magazine*.

A GREAT ENGINEERING WORK.—One of the grandest engineering works ever conceived has just been inaugurated by the laying of the foundation-stone, at Assouan on the Nile, of a vast granite dam, which is destined to hold the waters of the historic river in check. This huge wall will be more than a mile in length, 76 feet high in places, and 30 or 40 feet in width, so that it will form a bridge across the river as well as a dam to conserve its waters. The effect of this obstruction will be the formation of a reservoir with an area of about 670 square miles, holding 1,000,000,000 tons of water; and it is estimated that this mighty volume will be the means of bringing 2,500 square miles of desert land under cultivation. The so-called cataracts, which are in reality rapids, will disappear, and a lock at each end of the granite wall will form gates for the passage of vessels up and down stream. The work has been planned by Sir Benjamin Baker, and will be undertaken by Mr. Aird, and will probably be completed in about four years' time. It is regarded as the greatest engineering enterprise undertaken in the land of the Pharaohs since the building of the Pyramids.—*Chambers's Journal*.

WINDFALLS FOR THE LOUVRE AND CLUNY.—Art lovers who intend spending their Easter holidays at Paris will probably have opportunities of inspecting some most interesting additions to the treasures of the collections at the Louvre and the Cluny Museum. M. Desmottes, one of the wealthiest and best-known of French collectors, who owned some of the finest old ivories and bronzes in existence, has left twenty-five pieces to the Louvre and seventy-five to Cluny, to be chosen by the authorities of these palaces of art. It is to be hoped that the Louvre will seize this occasion of labelling with the name of the giver the various objects of art, for surely it adds to the interest of a collection to know that some of their greatest prizes were presented by public spirited men like M. Desmottes and others.—*Westminster Gazette*.

THE LARGEST TREES IN THE WORLD.—The largest tree in the world is to be seen at Mascali, near the foot of Mount Etna, and is called "The Chestnut Tree of a Hundred Horses." Its name rose from the report that Queen Jane of Aragon, with her principal nobility, took refuge from a violent storm under its branches. The trunk is 204 feet in circumference. The largest tree in the United States, it is said, stands near Bear Creek, on the north fork of the Tule River, in California. It measures 140 feet in circumference. The giant red-wood tree in Nevada is 119 feet in circumference.—*Ladies' Home Journal*.

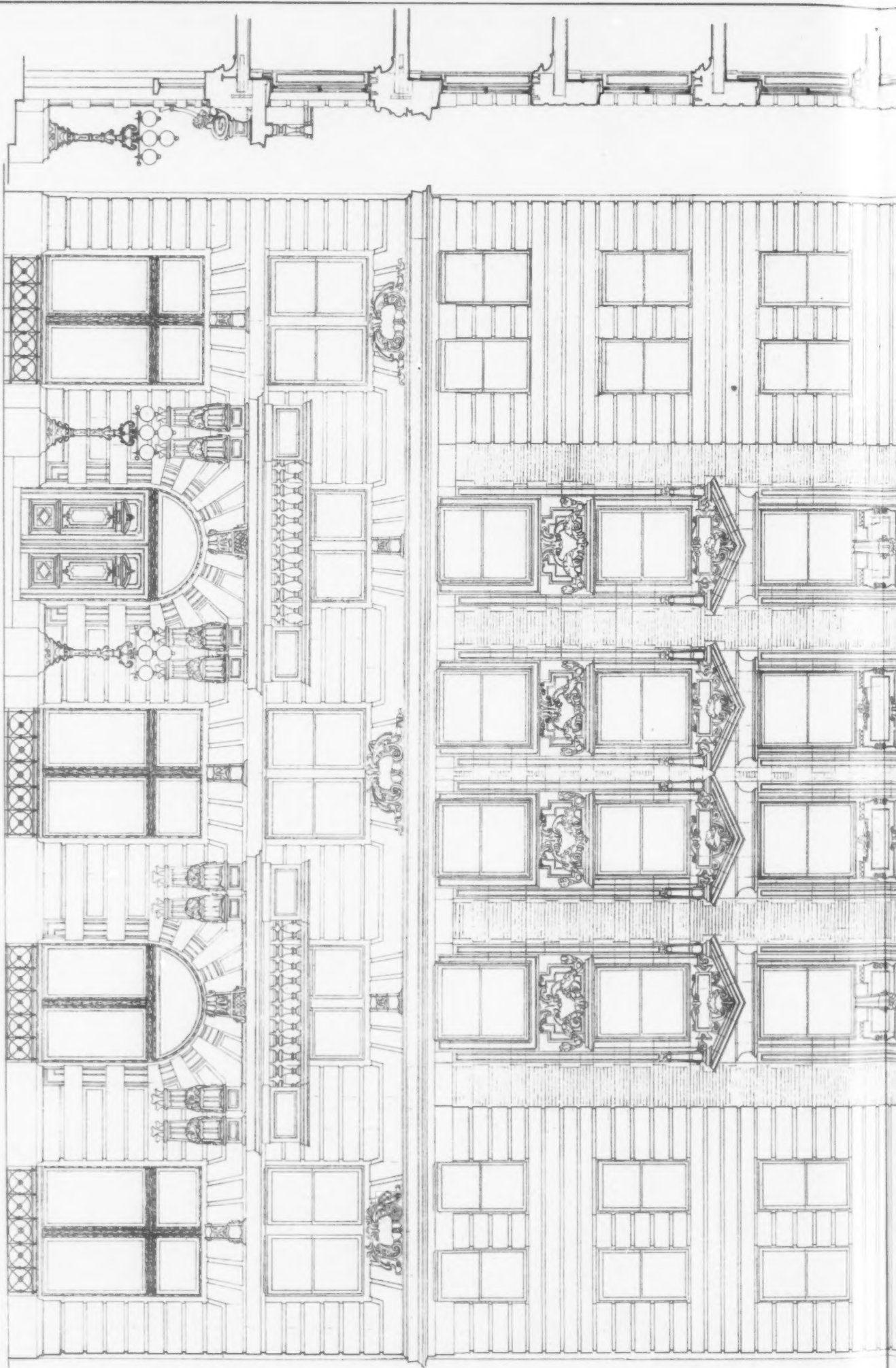
DISCOVERIES IN MEXICO.—Prof. William Niven, a New York archaeologist, who is making explorations in the remote mountain districts of the State of Guerrero, has made many interesting discoveries. He says: "I found many prehistoric ruins that I had not observed before. Near Villaxochitl there is a hill called Maztranza, fully 300 feet high and about one-and-a-half miles in circumference. About 200 feet from the summit are the remains of a wall which nearly encircles the hill, and near the top are the remains of fifteen different buildings. I dug a few feet and found plaster painted a bright vermilion, samples of which I selected."—*Boston Transcript*.



ST. PIERRE, CAEN, FRANCE.



THE CHURCH AT FOLGOËT, BRITTANY, FRANCE.



"THE STIRLING ARMS," PINEAPPLE STREET, BROOKLYN, N. Y.

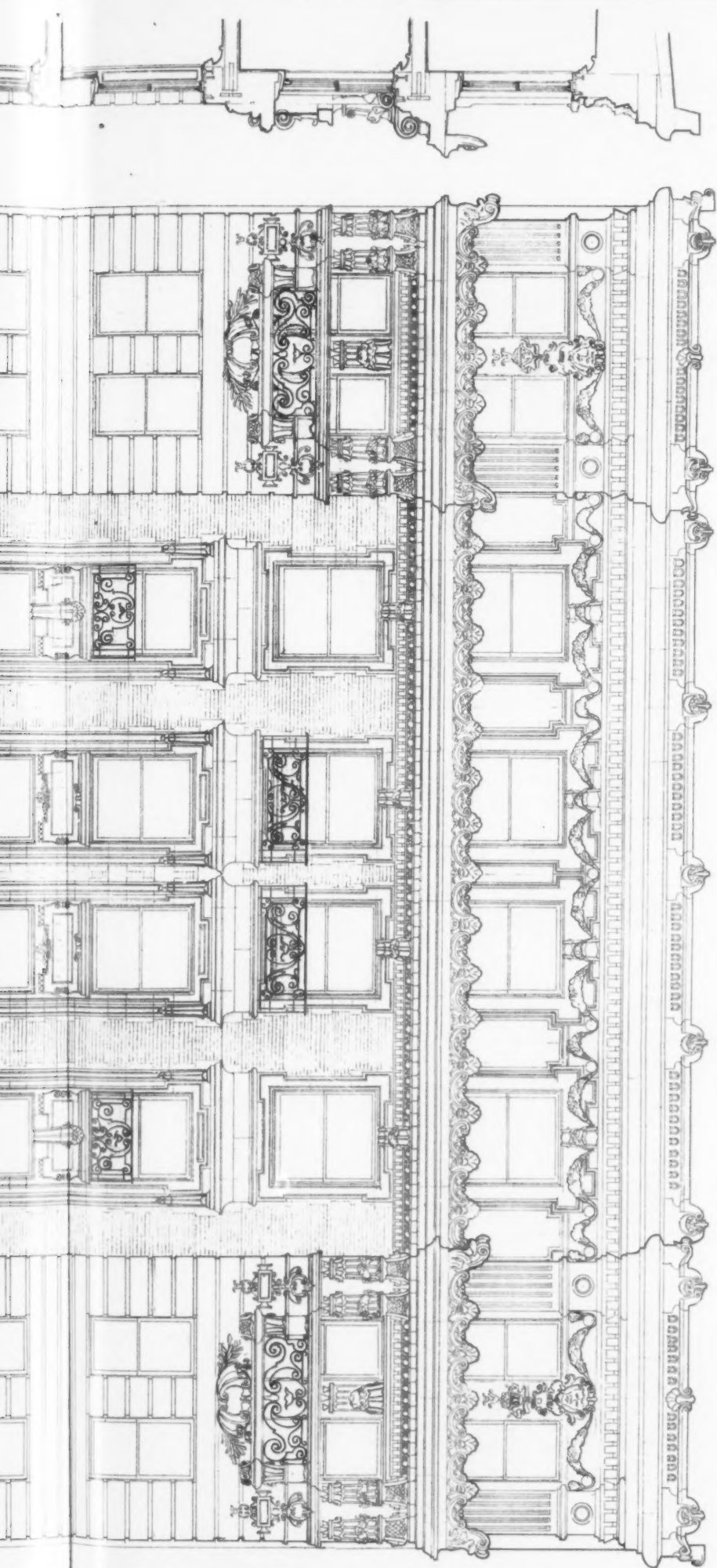
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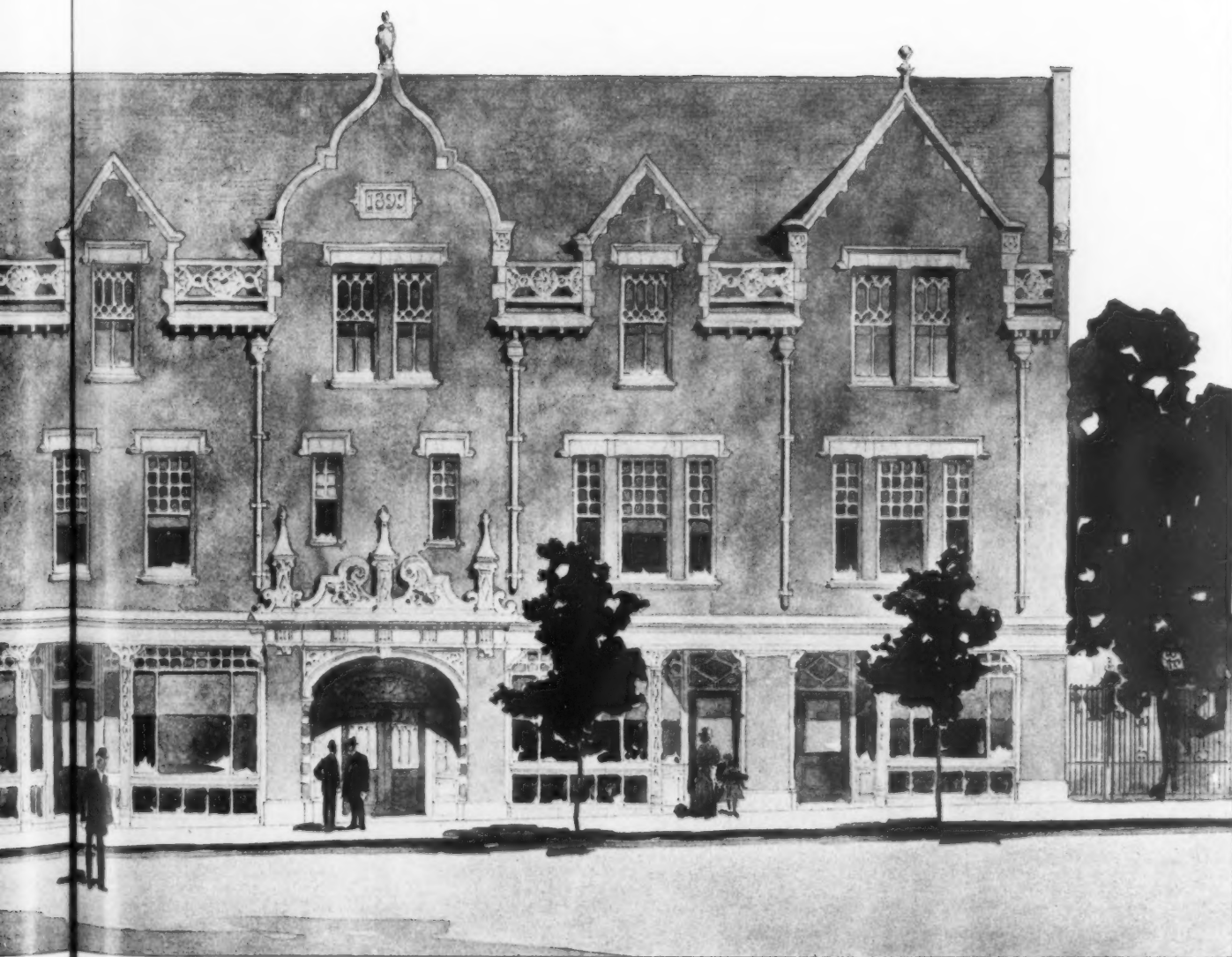
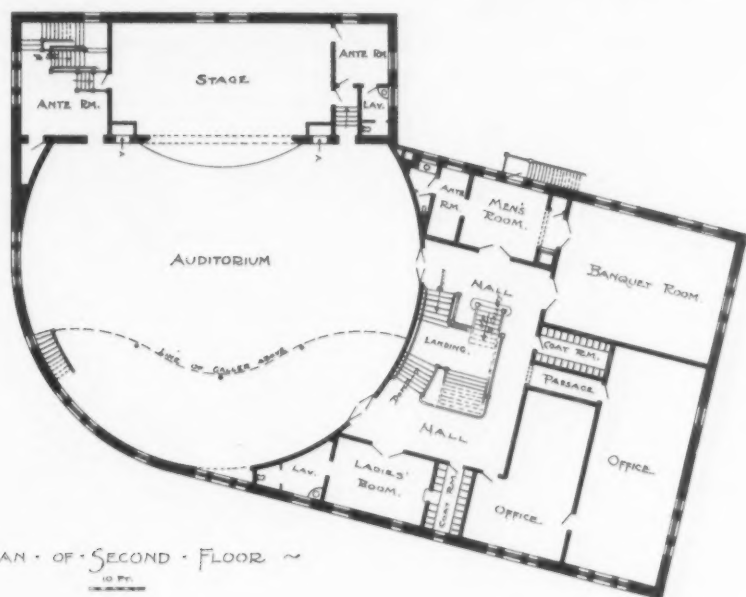
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