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A BILL is pending in Congress which, if passed, would do much to check the frightful waste of timber in this country through forest fires. This bill, which is introduced in the House of Representatives, with the sanction of the Committee on Public Lands, provides that the Secretary of the Interior shall be authorized to survey and mark, through all public forests which are liable to destruction by fire, avenues, one thousand feet in width, and five or ten miles apart, running in such directions as will make them most effective in preventing the spread of fire. The timber now standing in these avenues, or ways, is to be offered for sale at public auction, each purchaser binding himself to clear the tract for its entire width, so far as his purchase extends; and, when no bidders appear, the work of clearing the avenues is to be done by contract. The proposed bill is approved by the American Forestry Association, and would probably be passed without difficulty, were it not for the fact that the work of clearing the avenues, in the forests too far from railroad transportation to make the timber valuable, would involve an expense of, at least, half a million dollars, and Congress is not now in the mood for making appropriations which can be postponed.

ONE trouble about such a law would seem to be that, as it is made no one's interest to see to keeping the avenues, or "ways," clear of brushwood, it would be necessary to repeat the clearing operation every three years, at least, in order to make them effective as barriers against fire; and, as no one would pay anything for the brushwood, the whole expense of the clearings, after the first, would have to come out of the public treasury. Perhaps our public forests are too far from civilization to be treated like those in Europe, but it seems as if it might be possible to gain, at least for some of them, reasonable protection in exchange for certain rights, without calling on the National Treasury to make up the deficiency. We remember spending a day once in the New Forest, in England, which covers seventy-six thousand acres, and yields a net revenue of something like two dollars an acre per year. Speaking about danger from fire, we were reminded that there is no underbrush in the New Forest, and that forest fires cannot start without underbrush; and we were told that the New Forest is kept free from this source of danger, in the simplest manner, by merely authorizing the people who live in the Forest, which, it must be remembered, contains many villages and hamlets, to help themselves to all the brushwood that they need. Of course, the Crown officers determine what shall be considered brushwood, so that there is no danger of interference with the young trees of the valuable sorts; but, apart from these, the ground is free from the inflammable mass of twigs and shrubs which chokes the edges and cleared portions of all our forests, and fires are practically unknown, although the roads through it are mere narrow lanes, which would not check a regular forest conflagration for a moment. As the New Forest is Crown property, all the people who live within its limits are tenants of the Crown, and are thus to a certain extent under the control of the forest officials; and it seems not unreasonable to suppose that a somewhat similar system might be applied to our great forests, both public and private. Instead of cutting up the public forests by enormously wide avenues, which must be kept clear at a vast annual expense, and would needlessly sacrifice a very large part of the land, it might, for example, be possible to lay out roads of ordinary width, and, after cutting and selling the timber from a strip five hundred feet wide on each side, to lease this strip to tenants, at a low rent, for cultivation, and allowing them the privilege of gathering brushwood for fuel in the forest beyond, under the supervision of the forest guardians. Of course, some of our forest land is so poor and sandy that it would be worthless for cultivation, even if cleared, but much of it is quite rich enough to attract tenants on such terms, and it is hardly necessary to say that a strip of cultivated land is quite as effective for checking conflagrations as a similar strip overgrown with ferns and brushwood; while the fact that the lives of the tenants of the strip might be sacrificed in case of forest fires in the neighborhood would give them a special interest in seconding the efforts of the forest wardens to remove sources of danger.

IN many respects, our Western communities are much more civilized than the older Eastern States. A new statute in Utah, known as the "Horticultural Act," provides that every owner of an orchard or vineyard, even if he owns only a single vine or fruit-tree, shall annually clear away and destroy by fire all dead leaves and rubbish which may harbor insects, or injuriously affect the ground. This piece of legislation, although it will cause, no doubt, grumbling enough among the lazy and shiftless farmers, simply applies, vigorously and effectively, the ancient principle of the Roman law, that a man must use his own property so as not to injure that of another, — and it ought to be imitated everywhere. In the East, for instance, orchards are now practically ruined every year by the tent-moth caterpillars. These insects would be more readily exterminated than almost any other, for the eggs from which they are produced are always laid in conspicuous bands around twigs, while the colonies of young larvæ begin their career by spinning nests, in which they can be destroyed by wholesale with petroleum, or Paris green, or any other insecticide. Moreover, they always choose, if possible, to lay their eggs and build their nests in the wild-cherry tree. The better class of farmers and gardeners, for this reason, cut away the wild-cherry trees within their territory, and destroy the bands of eggs laid by the moths, but swarms of caterpillars born and bred on the estate of some neighbor who never troubles the moths soon invade their farms, and the next year all the work must be done over again. It has often been proposed in Massachusetts to fine persons who permit a wild-cherry tree to exist on their ground; but it would be still better to go to the root of the matter, and impose a fine upon the owners of any lot on which a ring of tent-moths' eggs is found. The fine need not be a heavy one, but if the statute were strictly carried out, the tent-moth, instead of increasing rapidly in destructiveness, would soon disappear.

A VERY interesting discussion took place not long ago before the Technical Society of the Pacific Coast, which is composed mainly of engineers, on the relationship of engineers to each other and to their clients. The discussion was opened by the reading of a paper on the subject by Mr. George W. Dickie, a member of the Society, and the paper and the discussion are both reported in the *Journal of the Association of Engineering Societies*. Mr. Dickie, who is a

contracting mechanical engineer, gave a picture of the consulting engineer, of a certain type, which many architects will recognize. The true consulting engineer, as Mr. Dickie well says, is a man of the highest value to the community. On his judgment often depend great interests, affecting, in many cases, whole communities, and he should not only be perfectly familiar with the best and latest practice in the matters on which he is consulted, but he should be qualified not only to advise upon the design and materials to be adopted but to guide his clients in the choice of the contractors to carry out the work. This latter duty is, naturally, not an agreeable one. As Mr. Dickie says, out of all the contracting engineers who would like to be employed by his clients only one will approve his choice, while the others are quite likely to solace themselves for having been passed over by accusing him of ignorance, if not of something worse. Nevertheless, it is a duty that must be performed, and performed with care and judgment, for no one knows better than an engineer, particularly a mechanical engineer, that to secure a given result, especially in difficult cases, it is necessary to employ certain contractors, who, whatever their rivals may say, alone possess the special skill, the special appliances, or, more frequently, the trained body of workmen, needed to produce the result desired.

CONTRASTED with this sort of professional adviser is the consulting engineer who takes up that department of professional practice solely for the sake of the large fees which he supposes that he will be able to charge. This individual, according to Mr. Dickie, when he secures a client, runs about among the contracting engineers, getting an idea or suggestion from each, and then goes home and patches up a specification out of these suggestions, often completing his specification, and protecting himself by stipulating that the contractor shall warrant the plant, carried out in accordance with the specifications, to perform certain functions, under certain conditions, with a specified minimum economy. Architects will find a certain novelty in the idea of specifying certain dimensions and materials for a structure, and then requiring the contractor to guarantee that it shall have a certain minimum strength; but Mr. Dickie says that he has actually seen a contract and specification for barges, drawn up by the consulting engineer for a Russian company, which, after giving the plans and dimensions of the barges and specifying the weight of material, required the contractor to guarantee that the said barges would carry five hundred tons on three and one-half feet of fresh water; that is, that the displacement due to this load, added to the weight of the barge, should not, with the specified form and dimensions, sink the barge more than three and one-half feet in fresh water. If any liberty were given the contractor in regard to the power to be adopted there would be some reason in such a requirement; but, as Mr. Dickie remarks, to add this stipulation to a detailed contract and specifications simply makes the contractor warrant that the engineer's design will accomplish what he claims for it; or, in other words, makes the contractor guarantee that the engineer has not made a mistake.

IN regard to the inspecting engineer, Mr. Dickie and the other engineers who took part in the discussion had also something to say, and they agreed in one thing, in which they will be supported by architects, that the better fitted an inspector is for his duties, the pleasanter, as a rule, will be his relations with the contractor. If a contractor means to be dishonest, he will look upon any inspector, especially an efficient one, as an enemy; but the great majority of contractors are honest, and such contractors like an inspector who condemns what he does not approve with a decision which cannot be shaken, while he is willing to give reasonable consideration to the inevitable occurrence of flaws and errors, and, if he find it necessary to condemn work on account of them, to explain how the work is so injured by them that it cannot be accepted. Every contractor, in a word, is interested in doing his contract work well. If he can look upon the inspector as a person equally interested, and with superior knowledge, he will, if the latter is decently considerate, generally be pleased to accept and follow his suggestions, even at some expense to himself; while the ignorant and fussy inspector, who is not certain of his own opinion, and thinks that he is earning his pay by making every one else miserable, is not only a torment to contractors but a burden to his employers, on whom the contractor retaliates for the annoyance that he suffers from their representative. An old engine-builder in San Francisco once took a contract to fit up a tow-boat. He was "dead sure," as he said, "at the beginning to clear five thousand dollars on the job, but they hired a man to prevent him from making that five thousand dollars," a duty which he carried out so faithfully that before the engines were finished the engine-builder was bankrupt and his shop in the hands of the sheriff.

THE *Deutsche Bauzeitung* gives an interesting and dispassionate account of the recent Russian advance in Asia. Some distinguished diplomat has said that the twentieth century will belong to the Slavic race, and Russia, as the head of this race, seems determined to give reason for the prediction. Not only is the Trans-Siberian railway in full process of construction, but the Russian Government has concluded a treaty with China by which a branch from this railway, which now in its eastern portion skirts along the Chinese frontier to its Pacific terminus at Vladivostock, is to leave the main line at Nertchinsk, and, crossing the frontier, is to extend southerly, through Chinese territory, to the Chinese harbor of Port Arthur, which Russia is to have the right to use for a naval station; and a branch from this Nertchinsk-Port Arthur division is to extend northerly to Vladivostock, putting the latter into direct communication with Port Arthur. The harbor of Vladivostock, although it is in the same latitude as Florence, is closed with ice for half the year, and the advantage of controlling the additional harbor of Port Arthur, which is always open, is obvious. It is not to be supposed that Japan, which has its reasons for not wishing to make nearer acquaintance with the Russians, or England, which now monopolizes six-sevenths of the Chinese foreign trade, will see with satisfaction the practical appropriation of a Chinese province, and a great seaport, by Russia, but the treaty is made, and the Russian engineers are already on the ground. Meanwhile the main line of the great railway is so far advanced that, with certain breaks, the road can already be traversed. Originally, the date for the probable completion of the road was set in 1907. Recently, the date has been changed to 1901; and, owing to the impetus given to military operations in Asia by the events of the past year or two, it is probable that the actual completion will be still earlier. The principal interval not yet provided for is that in the Baikal region, from Irkutsk to Myssowskaja, a distance of about two hundred miles. This territory is the most broken and mountainous on the route, and it has been deemed best to postpone the solution of the engineering difficulties that it presents until the completion of the other divisions. The eastern division, extending from Nertchinsk to Vladivostock, a distance of about a thousand miles, is already well under way. Three hundred miles of the road have been completed westward from Vladivostock, and the interval between this part and the rails extending easterly from Nertchinsk is rapidly lessening. Fifty-five million dollars have been appropriated for building this section of the road alone, and the government engineers, on favorable ground, have often built two miles of track a day. The cost of the whole work is estimated at nearly two hundred million dollars. There will be about two hundred stations, and two thousand locomotives will be required for its operation. A large part of the line is already in use, and the Russian Goverment hopes to be in a measure repaid for its great outlay by the development of the natural resources of Siberia which will follow the opening of the road, and the consequent settlement of the country.

THE Massachusetts Institute of Technology, in memory of the late Arthur Rotch, who was a generous friend and benefactor of the Architectural Department, has decided to attach his name to the chair of Architectural Design, now held by Professor Despradelle, by the creation of the Arthur Rotch Professorship of Architectural Design. It is pleasant to see the name of one so sincerely devoted to the promotion of the art of architecture thus connectnd with the study of that art in his own Alma Mater, and the memory of Mr. Rotch as thus recalled will, we hope, serve as an inspiration for many generations of young architects, who could hardly find a better example than in his conscientious and painstaking career as a student.

THE TEMPLE OF IYEMITSU.

Fig. 4. Wind God, Iyemitsu.

IT is not too much to say that nearly all misunderstanding among foreigners concerning Japanese art has arisen from one cause, namely, *a difference in the habit of mind.*

Art with us means, to a large extent, a development and adaptation of classic ideals, in which form and outline have, until recently, played a very important rôle.

But with the Japanese this is not the case. As a nation they are essentially impressionists. No people can portray a fugitive thought more triumphantly with a single sweep of the brush than they, or evoke more beauty from chaotic blotches; and, like our own impressionists, their power lies more in *color* than in *outline.*

The average young student of architecture, fresh from the École des Beaux-Arts or other school, with his Vignola at his fingers' ends, and his head well stocked with Viollet-le-Duc for Gothic purposes, is usually as incapable of appreciating Japanese building-art as though he had never seen the inside of academic walls. What does he know of impressionism, save from the technical jargon of his brother students of the other departments who paint? Yet this impressionism permeates and pervades all Japanese art, even architecture, and dominates its composition.

Thus the Temple of Iyemitsu is not so much a combination of beautiful contours symmetrically distributed, as a series of exquisite splashes of warm color down a mountain side, which, on closer inspection, materialize into lacquered temples smothered in green foliage of cryptomerias.

Indeed, so important a factor is the surrounding landscape and color-scheme in Japanese building-art that an architect will sometimes refuse to build a house if the site does not admit sufficient opportunity for color-effect.

From this somewhat impractical conduct alone, it will be readily seen what a gulf separates us in feeling from the dwellers in the far East; and, from the appearance of Iyemitsu, suggested above, it may be surmised, that to judge a Japanese temple by the same canons of art as a palace on the Palatine would be like testing the work of Monet and Whistler by the rules which governed David, Guérin, Gros, and Gérard.

In its absolute uniqueness, the Japanese Buddhist Temple has something in common with the Greek. For, notwithstanding the fact that the style was originally imported from India, Burmah, and China, *via* Corea, its 1,250 years' residence on Japanese soil has given it an impress as distinctly native as the coins stamped with the dragon-crest of Nippon, and in no case more markedly than in the Temple of Iyemitsu and its neighbors at Nikko.

With this slight caution as to criticism, let us approach the Iyemitsu memorial *sans rancune.*

To enter the first court one passes through a gateway, or Japanese propylæa (See Illustrations, Fig. 1), built of heavy wooden beams arranged to form a central doorway and two adjacent niches. The verticals are bound together by horizontal joists, and a graceful roof (sheathed in copper, as are all the roofs of the mausoleum) surmounts the whole. On the ridge and rafter-ends appear the crests of the Tokugawa Clan, of which Iyemitsu was prince and chief, and the niches are adorned with colossal figures whose faces, grotesquely painted, the one a varicose red, the other a livid green, stand as the Gog and Magog of the East.

To these prayers are offered by writing requests on bits of tissue paper, chewing up the same, and spitting them at the idols.

Within the court one might expect a large oratory, kiosk, or temple; but that would be entirely contrary to all Oriental custom. For majesty and dignity is never expressed in the far East by size, but by a multiplicity of approaches leading from one enclosure into another, like a nest of Chinese boxes, in which the most precious thing is placed in the smallest and last.

Hence the first court leads but to another gateway, called *Niten-mon,* and contains nothing of interest save the gracefully roofed water-basin (Fig. 2), a gift of the Princes of Nabeshima, and in which the faithful wash their mouths and hands before raising either to God.

The *Niten-mon* (Fig. 3) is of the two-storied type, such as precedes all residences of high officials in Corea.

The upper story, being open on four sides to the air, affords an admirable vantage-ground from which to study the hurrying, laughing human tide below, and hence has become the favorite *mise-en-scène* in all Corean novels. Here the hero of romance, who is occasionally a lover, but always a student, philosophizes upon the good and evil of the world, meantime weaving into his discourse as much of Confucius as he dares, without absolute plagiarism; and here, too, musicians ply their trade when the lord of the manor can afford such luxuries.

In the case of the *Niten-mon* however, the sides of this upper gallery are webbed with a filigree of dainty lattice-work, delicate as Bulgarian embroidery; and the roof (gabled into festoons) curves upward from a profusion of complicated corbelling.

Of the lower portion, which is richly carved and lacquered, as well as embossed with metal *repoussé* work, the most striking features are four niches containing grotesques. Two of these represent the Gods of Thunder and the Wind (Fig. 4), probably the most fantastically ugly specimens of sculpture in the world. The perfection of the anatomy, however, is eloquent of the school of *Hidari Jingoro,* the Japanese Phidias, or rather Pygmalion (since the legends tell of his statues coming to life after completion); while the playful hideousness in both announces the influence of the Chinese artistic craze, which swept over the land in the fifteenth century.

A court-yard, or *plaisance,* and three more flights of steps bring the visitor to the Demon Gate (Fig. 8), which, though of one story, greatly resembles *Niten-mon,* and is adorned with statues of a corpulency to delight the heart of Rubens. And then at last, straight before, rises the great fabled mountain of Hotoké, dark green shot with crimson and gold, like the gilded gardens of the Sun at Ispahan, or the storied treasures of Istakhr.

Such magnificence and splendor of effect, such anarchy of color, such undisciplined invention and charm of chance riot recklessly throughout, that it seems as though the architect had composed the whole with fiery masses of sunlight, using the spectrum as a palette.

On the other hand, it must be acknowledged that there are none of those delicate and fastidious combinations of light and shade, nor refined flexures of outline, which mark the "white ideals" of the Greek Acropolis. Symphonies of color take the place of the first, while beauty of outline is so consistently ignored (save in roofs) that one almost ceases to wish for it.

A fourth gate, executed in red, black and gold, and simple in construction, leads the worshipper into the cloistered court containing the Temple proper (Fig. 6), where litanies are forever chanted for the soul of the great Shogun. Before the gate stand some fine specimens of the bronze lanterns presented by the *daimios,* or peers of the realm, in token of remorse for sins committed (Fig. 7). So great is the number of these lanterns scattered through temple grounds that repentance may justly be termed a powerful factor in the decorative art of Japan.

Hitherto we have only referred to the approaches, and to the approaches as they appear on ordinary peaceful occasions. But during the *matsuri,* or religious festivals, all is changed.

At night the great masses and tiers of lacquer, bronze, and pigments seem ablaze with light from thousands on thousands of gay

Fig. 7. Lanterns, Iyemitsu.

lanterns bobbing hither and thither, while, at a distance, the mossy mountain-side seems jewelled with emeralds, rubies, and blue diamonds.

During the day, temporary tea-houses are thrown up, flags wave,

drums beat; conjurors, performing monkeys, jesters, jugglers, acrobats, pleasure-seekers, and priests all mingle in a gay throng of moving color, giving life and animation to the stately avenue of approach. Within the first enclosures chattering children, laughing girls, talkative women tricked out in bright carnival attire swarm up the mountain-side, and fat jolly babies with huge butterfly sashes on their backs go staggering and tumbling about with all the attractive lumpy awkwardness of puppyhood. Tea-house girls toddle about upon their stilted shoes, smiling at all comers with bewitchingly effective effrontery, serving hot *saki* with dainty hands, and leading a life of epigrams and bonbons. Gods and men, life-size, are sometimes created out of chrysanthemums,[1] *geishas* sing, *michos* dance, and all is jovial, jocose, and Japanese.

But once within the sacred cloister of the Temple proper, the atmosphere changes, and the Buddhist spirit of contemplation gradually seizes upon the crowd. Not for long, it is true, but long enough in which to mutter a few short prayers and feel the solemn spirit of beauty, which there reigns supreme.

Beautiful as is this exquisite corner of nature, with its giant cryptomerias, and garlands of iris, lotus, or chrysanthemum, the presiding and all-pervading genius of the place is the Temple (Fig. 6).

Like most Buddhist fanes, it consists of a *Haiden*, or oratory, and a *Honden*, or chapel, united by a gallery. Gabled roofs festooned "like jewelled mantles" fall gracefully over all, and a tropical luxuriance of ornament involving carved goddesses, fruits, flowers, birds, beasts, dragons, monsters, and all living things in and out of nature appear in the pediments, gables, and soffits of the doorways.

Most of this work is wrought upon camphor-wood and is of the sort known as *pierced carving*, *i. e.*, it can be viewed as well from the inside as from the outside, and so acquires a certain naturalness, which is further enhanced by color. Thus, in fruit an expression of

Fig. 9. Burial Place of Tokugawa Shogun.

ripeness is effected by a touch of vermilion on one side, while the tones of green among the foliage are varied to an extent worthy of Corot. The prevailing color throughout the whole, however, is what is called in China "the color of religion," *i. e.*, red, since it is used on all the sacred buildings of the Flowery Kingdom. All the smooth surfaces of the chapel and oratory, with but few exceptions, are lacquered in this color, which lacquer, being of the polished species, resists the wet weather of the Nikko district very successfully.

The extreme usefulness of lacquer in a country liable to frequent rains may be somewhat understood from the statement, that the writer has seen a number of lacquered curios taken from a wreck which, having been under water for ten years, showed no signs of their long submersion either in color or in polish; and here it may be as well to say a word concerning this imponderable enamel of the Japanese.

All lacquer is made from the white sap of the *rhus vernicifera*, called commercially the lacquer-tree, which grows most luxuriantly in the Province of Echizen. The moment the sap comes in contact with the atmosphere it turns black; but if properly treated with pigments it may assume nearly any tint in the spectrum except violet, the making of which latter is now a lost art.

During the *Hojo* Period, or thirteenth century, violet lacquer was successfully made and very plentiful and popular; but the specimens now remaining are almost priceless, and adorn the collections of Royalty and the Church.

The lacquer being once prepared, the article to be enamelled is usually first covered with a layer of powdered hemp and glue, and then with a film of sap; after which, the whole is wrapped in fine hempen cloth, and layer on layer of the liquid (tinctured the proper shade) is smeared upon the surface and allowed to dry. In the case of small and very valuable articles, the second ground-work is formed of the finest silk instead of hempen cloth.

This latter process, notwithstanding its costliness, is said to have been the one employed on the Temple of Iyemitsu; and the exquisite polish which appears throughout the shrine is effected by means of a powder of calcined deer's horn.

The interior of the Temple of Iyemitsu is, perhaps, not so elaborate as that of Iyeyasu, its neighbor. Nevertheless there are lacquered walls encrusted with precious metals, and coffered ceilings with gilt enrichments; to which must be added all the furniture, finery, and insignia of the Buddhist cult, a very apocalypse of golden splendor, with *Amida* in the midst, Amida "the abstraction," Amida "the Ideal of Boundless Light."

But grand as all this splendor seems, there is a lack, as in all Eastern temple-interiors, whether Buddhist, Confucian, or Shinto, of that *dignity* and *aspiration* which the Western mind unconsciously craves in all places of worship; qualities best achieved (to borrow the poet's simile)

> "By pointed aisle and shafted stalk,
> The arcades of an alley'd walk,
> To emulate in stone."

All of which is so admirably combined in the French Gothic architecture of the thirteenth century.

To seek this dignity at Iyemitsu, one must again pass out into the air and look upward.

Far away to the right and cresting many flights of steps rises the last grand gateway barring approach to the tomb of the great Third Shogun and Tycoon (Fig. 8). This gate, *unlike* all others, is of dead-white color, as are also the bas-reliefs flanking it. To understand this choice of tint, or, rather, lack of tint, one must descend again to the foot of the hill and look up, when immediately the reason becomes clear. For gazing upward thus, the oratory still stands out beautiful and sharp to the average vision, but objects at a greater distance grow filmy and indistinct. Hence, in order that this gate should contribute its share to the general effect and be seen, a sharp falsetto note of color was required, a high light needed to penetrate the purple atmosphere and reach the critical beholder. Red was not sufficiently powerful, and so white was adopted as reflecting more light.

In this last gate the complex bracketing of the roof has been overdone, for not only does the latter *appear* top-heavy, but it *is* top-heavy, and has to be shored up for safety, though it conceals its decrepitude by using very light bamboo supports.

The doors, like all Japanese details, are prodigies of patient workmanship and are composed of lacquer and bronze, in which the three *asarum* leaves of the Tokugawa crest play an important decorative part.

Turning round and looking back over the clustering roofs pouring their color and shadows down over the mountain-side, the first impression is that of an enormous encampment belonging to some great Eastern generalissimo; and those who still disbelieve the Hope theory and distrust that the architecture of Eastern Asia was developed to a very large extent from the Tartar tent [2] should come to this spot and gaze over the gates, temples, and pavilions of Iyemitsu. For, notwithstanding that the Buddhist style in Japan is a refinement of that in Corea, that the Corean is a modification of the same style among the Chinese, and that the temple architecture of the Flowery Kingdom was somewhat affected by Burmah and India, the tent prototype is still triumphantly apparent, and as strongly marked as certain racial and facial attributes among the Jewish race.

Passing through the final gate, the visitor reaches the last and most revered object in all this Chinese nest of boxes, namely, the simple bronze tomb containing the bones of Iyemitsu (Fig. 9).

It is the most perfect expression of good taste throughout the whole mausoleum, the very acme of simplicity and dignity combined. After the exuberant splendor of the approaches, any attempt at climax would have been sheer folly, and failure would have been almost a certainty; but this sudden transition from magnificence to purity of design forms a contrast which appeals to every one, and as the tomb rises upon its granite terrace, guarded by the storks, or emblems of eternity, it seems a perfect epitome of that rest and contemplation for which the Buddhists pray, and of which they know so little.

The name of the architect of this great series of achievements has not come down to us. Probably it was Honda Kadzusa no Suke, whom Iyemitsu employed upon another occasion for the mausoleum of his grandfather. But in any case the world owes much to Iyemitsu for the manner in which he encouraged art. For his *homio*, or posthumous title of "Illustrious *Enterprise*," not only was well deserved, but might also apply to any of the great works of art performed under his patronage. True, it was Iyemitsu who exiled the Christians and practically closed the gates of Japan to foreign art and commerce for three hundred years; but had the missionaries

[1] At Asakusa.

[2] This theory, of course, excepts the Aino huts and Shinto temples of Japan, which were practically unknown in Mr. Hope's day, the doors of the Mikado's Empire being shut to foreign commerce.

not attempted to scrape their acquaintance with the sword, nor instilled their doctrines by force of arms, all this had not occurred; and the cross would have reared its head to-day above the crags of Hotoké.

C. T. MATHEWS, F. A. I. A.

PROPOSED EXPERIMENTAL RESEARCH IN ACOUSTICS.

IN the discussion of the paper, by Mr. H. W. Burrows [*A*], on "Sound in its Relation to Buildings," published in the second volume of the present series of the *Journal*,[1] Prof. Roger Smith urged that experiments should be made on the subject and the results recorded. To some extent, said the Professor, every building was more or less an experiment. If the Science Committee would secure a collection of observations upon interiors, their dimensions, their materials, whether they were successful for music, whether they were successful for speaking, etc., such observations, if tabulated with regard to a considerable number of known buildings, would throw light upon what was undoubtedly an obscure subject when applied to practice. Prof. Banister Fletcher supported the suggestion, and other speakers who joined in the discussion urged the desirability of making further inquiries and tabulating facts. This the Science Standing Committee, with the concurrence of the Council, now propose to undertake, and they have draughted, for the purpose, the following questions: —

1. *Plan.* — Give a general plan, with elevations and sections, of the *interior* of the building.
2. *Materials.* — Describe the materials of which the building is constructed, carefully noting the finish of the interior surfaces and the disposition of carpets, hangings, or other similar fabrics.
3. *Construction.* —The construction of the building should be described as fully as possible.
4. *Seating.* — Illustrate the method of seating by plan and section.
5. *Speakers, etc.* — Show position of speakers or musicians in relation to the audience.
6. *Effect of Audience.* — The effect of an audience should be carefully noted. State if the room is better when partially or entirely filled.
7. *Ventilation.* — Describe in some detail the system of ventilation. If possible, note the mean and extreme temperatures and the effect of the variation produced by it and changes in direction of the ventilation. State the position in which the thermometers are placed. (For full explanation as to the value of these observations, see "Sound in its Relation to Buildings," *Journal* of the Royal Institute of British Architects, Vol. II, Third Series, p. 353.)
8. *Key-note.* — If the key-note of the building is known, state it, and say whether or not, if the voice is pitched in this key, any improvement in sound is noticeable.
9. *Quality of Sound.* — (*a*) State what is the general reputation of the building for (1) Music; (2) Speaking.
(*b*) State what the quality of the sound is — full and resonant, etc., and note any peculiarity of effect, such as echoes and the like.
(*c*) If defective, state the nature of the defect as carefully as possible.
10. *Remedies.* — If remedies have been tried to obviate defects, state them, and the results obtained. The precise nature of the remedy should be fully detailed.
11. *Additional Particulars.* — Add any particulars not above scheduled which may be considered necessary or desirable, and state age of building.
12. *References.* — Give reference (if any) to published descriptions of the building, especially those dealing with acoustic properties.
13. *Authority.* — Give the names of the experimenters and date of experiments.

The Science Committee ask members to reply to the above questions, and for purposes of classification request that their observations may be written on separate sheets of paper, headed with the name of the building experimented upon, and the subjects treated of. — *Journal of the R. I. B. A.*

CONTRACTS.

Contracts corrected by the Courts. — Mistakes will happen, even in the best-regulated affairs of life. Contracts arise out of various negotiations, where propositions *pro* and *con* have passed; are written out by inapt hands; or verbal directions given to attorneys; and parties sign documents, only to find that if a fulfilment be required to the letter of the bond it will be ruinous, contrary, of course, to the intention of the one, and perhaps originally to that of the other. The correction, re-formation, restriction, or even annulment of such instruments is one of the matters that come before those courts of conscience, which are variously termed "Courts sitting in Chancery," or "Courts having Jurisdiction in Equity." Under what circumstances can reformation be had? is a question that may arise at any moment in the management of commercial and other affairs.

The Supreme Court of the United States has said, that where an instrument is drawn and executed which professes, or is intended to carry into execution an agreement which is in memoranda, or which may be shown by parol, previously made between the parties, but which by mistake of the draughtsman, either as to fact or law, does not fulfil, or which violates, the manifest intention of the parties to the agreement, equity will correct the mistake, so as to produce a conformity of the instrument with the agreement; the reason of the rule being that the execution of agreements fairly and legally made is one of the peculiar branches of equity jurisprudence, and if the instrument intended to execute the agreement be, from any cause, insufficient for that purpose, the agreement remains as much unexecuted as if the party refused altogether to comply with his engagement, and such court will afford relief in one case as well as the other, to effectuate the manifest intention of the parties.

It will be seen that a legal instrument is a proper subject for re-formation or re-execution whenever the instrument itself does not reproduce the actual contract of the parties; and it is only possible to re-form a contract when the parties have actually made a contract which is different in its terms from the one which has been reduced to writing. In other words, in order that an instrument may be reformed, the error or mistake which has been committed in reducing the agreement to writing must be either a mistake mutual to the parties, or it must be a mistake on the part of one, accompanied by fraud on the part of the other.

The rule is that, in an action to re-form a written instrument, the complainant must set forth the terms of the original agreement, and the agreement as reduced to writing, and point out with clearness wherein there was a mistake. To contract, concurrence of minds is essential, and no substitution of an amended contract can be made without showing that the parties concurred in the original agreement, as expressed in the amended form. On proof of mistake by one party, rescission may be decreed; but rectification cannot be had without proving that both parties had originally agreed as to the terms to be inserted, and that the mistake was bilateral. Courts cannot correct an instrument except upon a clear mistake common to all.

Almost a century ago, a writer said: It has long been an established rule that when a contract has, by reason of a mistake common to the contracting parties, been drawn up to an effect militating against the intentions of both, the Court will rectify the instrument, so as to carry out such intentions. It is essential that the extent of the rectification should be clearly ascertained and defined by evidence contemporaneous with or anterior to the instrument. It is necessary for the complainant to show that there was an actually concluded contract which is inaccurately represented by the instrument in question. Courts do not rectify contracts; they may and do rectify instruments purporting to have been made in pursuance of the terms of a contract.

When a document has been signed as an agreement, in a common mistake as to its contents, and it appears that no real agreement was arrived at by the parties, according to which it might be rectified, the Court will set it aside; for it is only where neither party is in error as to the matters in respect to which there is an actually concluded contract, and there is an error common to both parties, in the reduction of the agreement to writing, that the Court interferes for the purpose of re-forming the contract. It must be a mistake in reducing the actual agreement to writing. It follows from the nature of the jurisdiction, and there can be no rectification where there is not a prior actually existing contract by which to rectify the written one.

In every case it must clearly and satisfactorily appear that the precise terms of the contract had been orally, or otherwise, agreed on, and that the writing afterwards signed fails to be, as it was intended, an execution of the previous agreement, but, on the contrary, expresses a different contract, and that this is the result of mutual mistake. For if there had been misunderstandings, during the negotiations, and the parties understood the terms differently, yet neither made known to the other his construction of it, and it was afterwards reduced to writing and duly executed, they are both bound in equity, as well as at law, by the terms of the written instrument.

The one alleging the mistake holds the affirmative, and must satisfy the court beyond a reasonable doubt that the agreement, as he asserts it to have been made, was in fact made, and that the mistake occurred in reducing such agreement to writing.

Construction of Contract as to Alterations. — A contract provided that the builder should forfeit $10 for each day that the building remain unfinished after the time fixed, by the agreement, for its completion. It also provided that any change in the plans, "either in quantity or quality of the work," should be executed by the builder, "without holding the contract as violated or void in any other respect." During the progress of the work a change was made in the material for the front of the building, from brick and granite to Indiana stone, with carved panels and frieze. The difficulty in procuring a prompt delivery of the stone caused delay in finishing the building, and the owners claimed to recoup the stipulated forfeit and set off the loss of rents. By the agreement, the owners reserved the right at any time during the progress of the work to make any alterations in the plans and specifications, and it became the duty of the builder to carry them into effect. The provision that the changed plans should be executed without holding the contract as violated or void in any other respect should be read in connection with this reserved right.

The words "in any other respect" exclude the implication of any change in terms except such as would result from the alteration of the plans, but not such changes as would be the necessary consequence thereof. Alterations calling for more work and materials might, of necessity, require more time for the completion of the building. They might be directed so near the end of the work as

[1] Republished in the *American Architect* for May 18 and 25, 1895.

to make it impossible to complete the building within the time stipulated. In this case the building was located where the material fixed for the front by the contract could be purchased in an open market and delivered ready for use in one day. The stone required by the alteration could be procured only at the quarries in Indiana, where an order had to await its turn; and, after delivery, it required weeks of skilled labor to fit it for use in the building. For such delay in the completion of the building as was the necessary consequence of the change of plans by the owners the builder was not answerable, and for it no forfeiture could be exacted.

[Lily *vs.* Person (Supreme Court of Pennsylvania), 32 *At. Rep.* 23.]

Construction of Contract. — Whether a sum named in a contract is to be regarded as liquidated damages or as a penalty depends on the intention of the parties as it appears from the nature of the contract, the situation of the parties and surrounding circumstances, and not merely on the language of the contract.

[Sanford *vs.* First National Bank of Belle Plaine (Supreme Court of Iowa), 63 *N. W. Rep.* 459.]

A building contract contained the following provisions: "The contractors shall make no claim for additional work, unless the same shall be done in pursuance of an order from the architects and notice of all claims shall be made to the architects, in writing, within ten days of the beginning of such work." The Supreme Court of Minnesota held, that this provision is not an effectual limitation upon the legal competency of the parties to the contract, or their authorized agents, to modify or waive any of the terms of the contract, except in the particular manner stipulated.

[Michaud *vs.* McGregor, 63 *N. W. Rep.* 479.]

SOCIETIES

NEW YORK CHAPTER, A. I. A.—HIGH BUILDING LIMIT.

A SPECIAL meeting was held in the Chapter Quarters, 156 Fifth Avenue, on Monday, March 30, 1896, to consider the Bill, then before the New York State Legislature, relating to the limitation of the height of buildings in the City of New York.

The Secretary, in view of some apparent misapprehension on the subject, thought it ought to be understood that neither the Chapter as a body, nor any of its officers, had ever expressed any opposition to the restriction of the height of buildings. The question had not been formally introduced at any Chapter meeting since the current legislative action on the question.

He then produced several printed documents on the subject, and read "An Act to regulate the height of buildings in the City of New York," being No. 523 (Int. 468) in Senate of the State of New York, February 12, 1896, "introduced by Mr. Pavey — read twice and ordered printed, and when printed to be committed to the Committee on Affairs of Cities."

Mr. Post said: I have built many of the high buildings in New York, and have on my table, at the present time, plans for several proposed new buildings in which my clients demand that they should be, in my opinion, abnormally high. I, nevertheless, believe it my duty as a citizen, and as one represented in the advancement of architecture in our country as a fine art, and the best interests of the City of New York, to advocate as strongly as possible the passage of a law restricting the height of buildings. I believe that it is necessary to the interests of the city, on account of its insular position and great length in proportion to its width, which necessitates to a large extent the concentration of trade, that our buildings should be made taller than would be justified by purely æsthetic principles, and, therefore, in drawing the Act known as the Pavey Bill, I so arranged it that the height of the buildings would be about that of our tall structures before the introduction of steel-cage construction. The height of these buildings was limited by the amount of space occupied by the basement piers. With steel-cage construction it is limited by the amount of space which can be devoted to the necessary elevator plant. I have found by experience that one elevator will supply an adequate service for about fifty offices of an average size.

The objections to very tall buildings are serious. If their construction could be limited to one in each block, occupying, we will say, one quarter of its area, they might be considered as a necessary evil, but discriminatory legislation in favor of certain pieces of property in the same section would be impossible. It is a fact which is proved by the practice of all of our architects that the tendency is to make all new buildings extremely high. This can be stopped now by legislation before the city is irreparably damaged. If it is not stopped the consequence must be disastrous, and redress will be almost impossible. The results of bacteriological investigation show that the evil microbes flourish and increase in damp, dark places, but that sunlight destroys their life. Our narrow streets, when lined with tall structures, will become unhealthy alleys, with an inadequate capacity for the passage of the crowds which will flow from these tall buildings if occupied, for the capacity of the streets is already severely taxed at certain times of the day, in the crowded districts, by the tenants of the buildings; but when our streets are so lined, the lower stories of the buildings will be no longer valuable for office or living purposes and will be only fit for storage.

The first effect of a law limiting the height of buildings would be, doubtless, to somewhat decrease the value of a relatively small number of large plats, but, in my opinion, it would increase the value of small holdings, and the ultimate result would be to increase largely the average value of property throughout the city, by preventing the extreme concentration of trade and business in one or two localities.

In an artistic point of view, the gain to the city by the passage of such a law cannot be disputed, for, even if the principal façades of a building towering above the surrounding houses may be handsome, its plain brick masonry on ends and rear will always form a hideous mass. It can only be beautiful if treated as a tower, but such a façade would necessarily entirely lose its effect if connected continuously with another façade of approximately the same height. The filing of plans to enclose the American Surety Company tower on two sides by a building twenty-two stories high forms the best possible illustration of this last statement.

Incidentally, Mr. Post confirmed, from his own experience, the fact that, in the case of high buildings, tenants prefer the upper floors to the lower ones.

Mr. Howard Constable concurred in Mr. Post's remarks as to the unwholesome conditions engendered in damp, dark, crowded places, tendency to typhoid and other fevers, and, worse still, to consumption, from which there are more deaths than from all the fevers combined. He said that the sewer-system of the city would soon be overcrowded should excessively high buildings continue to increase as rapidly as within the past year or two. The same is true of the mains of the water-supply system. The capacity of the Fire Department is only up to the height of about 125 feet; therefore, unless a building is strictly fireproof (of which there are but few at present), there is considerable risk of suffocation from smoke and from stampede, as the means of access in many buildings is very limited for such emergencies, and many of the stairways are cramped and steep and adjoin the elevator-shafts. But a direct limit of height impresses many as a direct infringement of constitutional rights, whereas, if buildings over the limit of the capacity of the Fire Department were restricted to the conditions of absolute fireproof construction in every way, and stairs separated from the elevator-shafts, and special wind-bracing and some other points provided for, it would make a feasible and practical cure for the whole matter, as there would only be occasional buildings built where money was no object, and there would be magnificent towers, ornaments to the city; but if a fixed limit of height must be made, I certainly think it should be based on the width of the street and with a graded ratio, such as has been suggested by Mr. Post, for two reasons: —

First. — Because the narrow streets are in the lower district, and the island is very narrow at this point, and, therefore, the circulation of air is better and the sewers of shorter lengths.

Second. — Because such great prices have been paid for property it would be reasonable the ratio should be changed so as to allow some higher buildings than now proposed, that is to say, 150 feet on Broadway to the level of the top floor, instead of 125 feet.

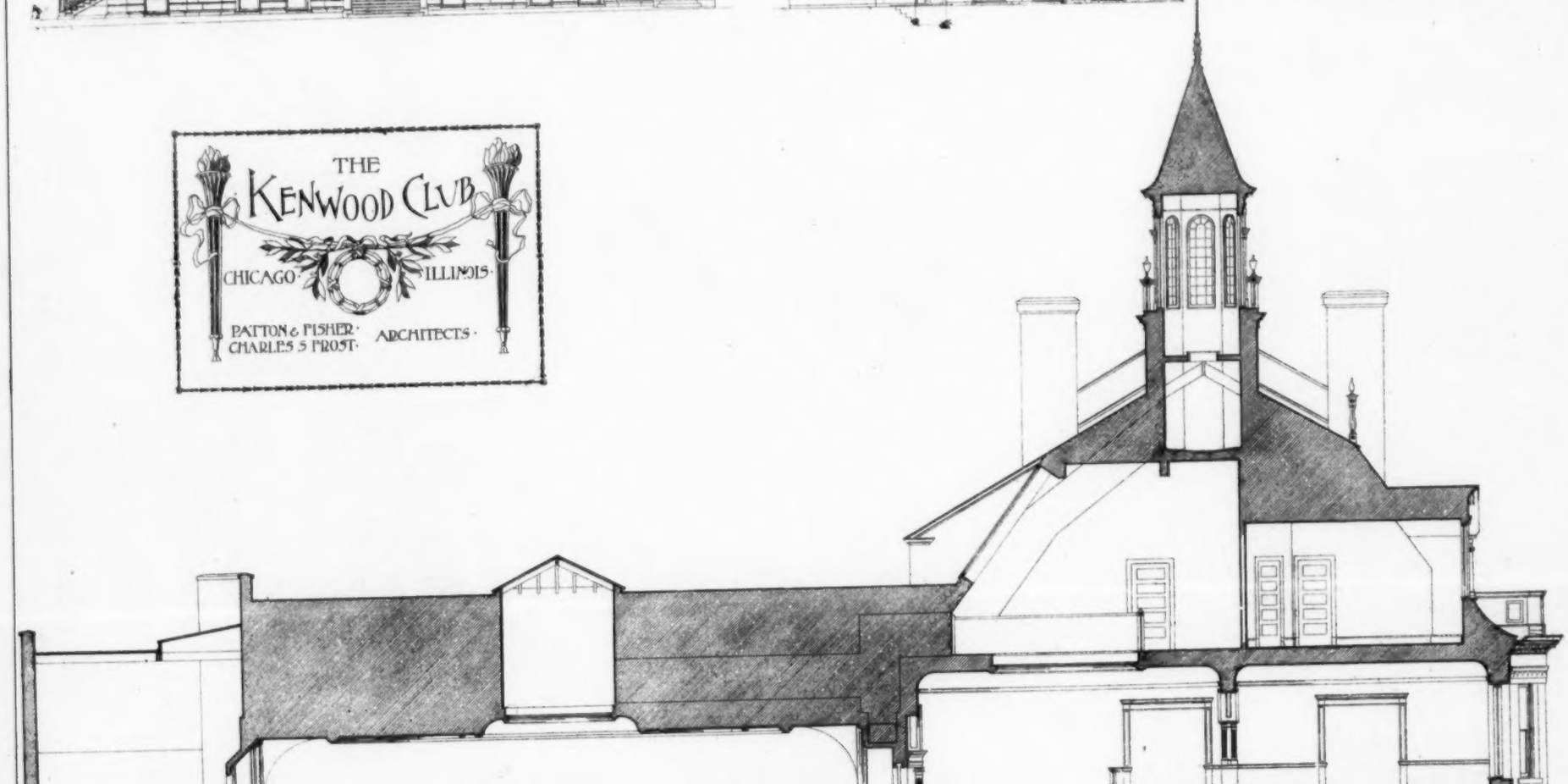
Mr. Carrère said: As an investment, high buildings do not justify their construction, and are mainly built as advertisements, by corporations. Though the Bill may injure a few property-owners, it will eventually benefit the entire city, by scattering the tenants horizontally instead of piling them up vertically; but my main argument is that we, as architects, are not concerned with such matters of detail as the result of the Bill or the methods established by the Bill, but that the whole question is whether or not the height of a building should have any relation to the width of a street. Every man, in building for himself on a large area, necessitating courts, light-shafts, etc., will regulate the height of his building, the size of his courts, etc., so as to obtain the best results as to light, air, ventilation, and rental, and it seems to me that what every sensible man would naturally do for himself he should be compelled to do for his neighbor; the streets being practically public courts, the height of the buildings should, therefore, be regulated by a public Act, so as to make the courts healthy, beautiful, and useful.

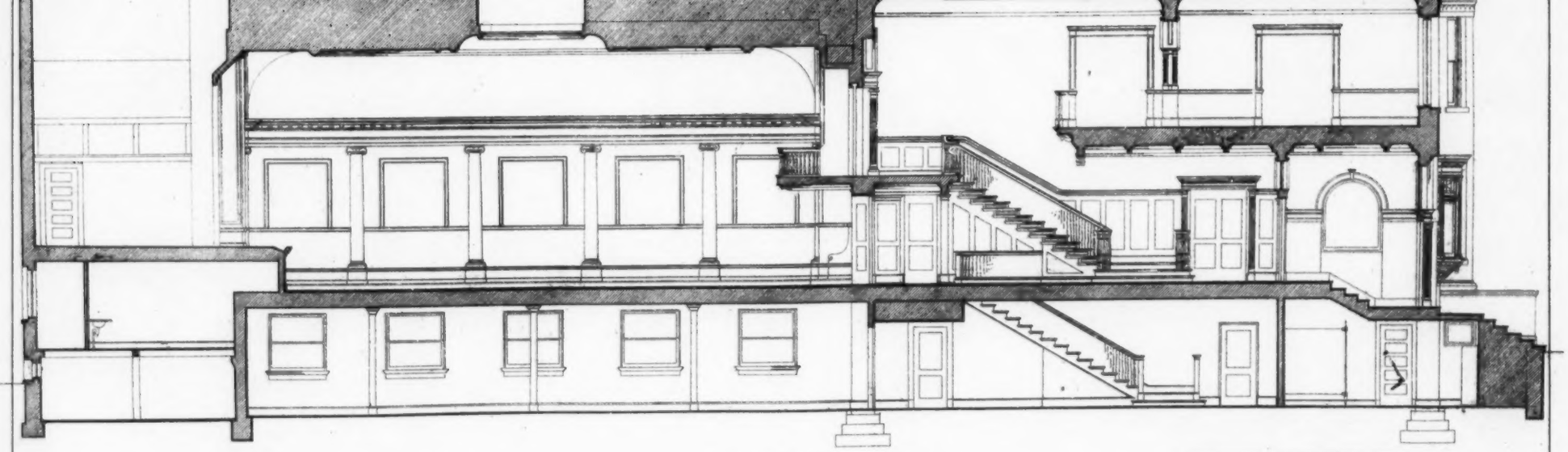
Mr. Cook said: The area in the lower part of the city now occupied by offices is very small, and the result of a large number of high buildings would be to contract it still more; so that we should have a small space occupied by gigantic structures, surrounded by outlying streets filled with buildings neither beautiful nor desirable from sanitary and other standpoints. The enactment of the proposed law would remedy, to some extent, this condition by making it necessary to spread the offices over a larger portion of the city, including many streets where it is most desirable that the existing buildings should disappear; and in this way we could hope not only to improve a considerable part of the city as regards health and beauty, but to increase the value of a great amount of real estate near the financial centres.

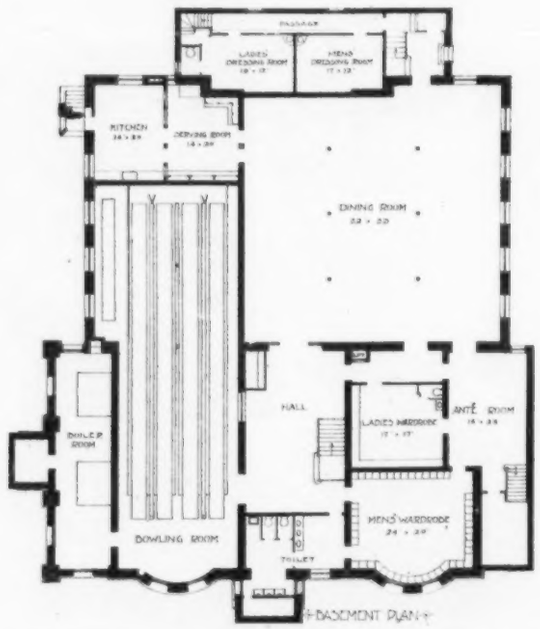
Mr. Hastings concurred in this view. Limitation of height would undoubtedly tend to improve the property for a few hundred feet on each side of lower Broadway; as, instead of putting up buildings of extravagant height on one limited line, owners would probably spread into these districts which are at present very little improved, being used mostly for tenements, warehouses, etc.

Mr. Cordes said that: Though fully in accord with the principle

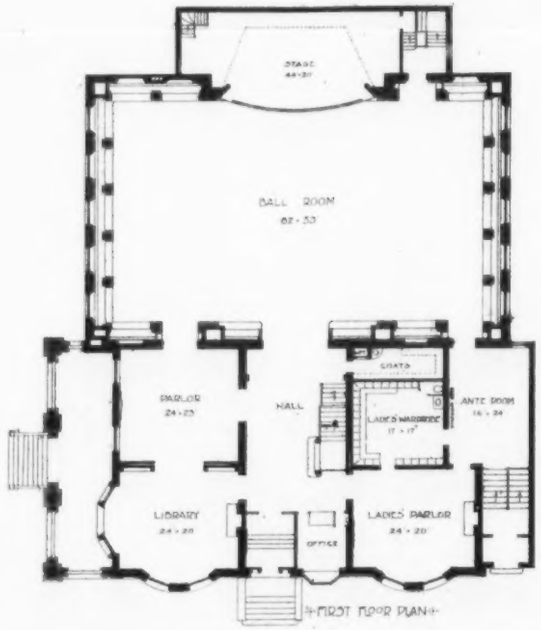
THE
KENWOOD CLUB
CHICAGO · ILLINOIS ·
PATTON & FISHER ·
CHARLES S PROST · ARCHITECTS ·



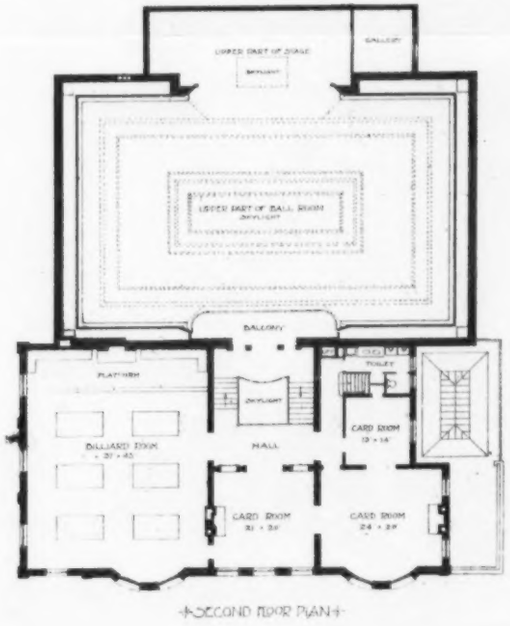




BASEMENT PLAN



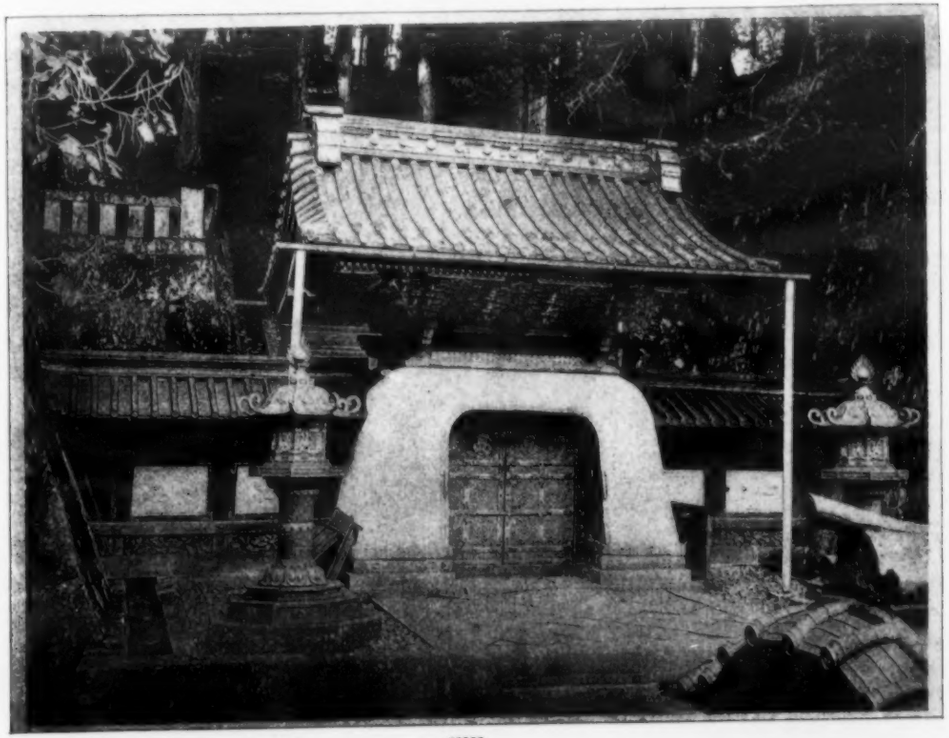
FIRST FLOOR PLAN



SECOND FLOOR PLAN

HELIOTYPE PRINTING CO. BOSTON

VI



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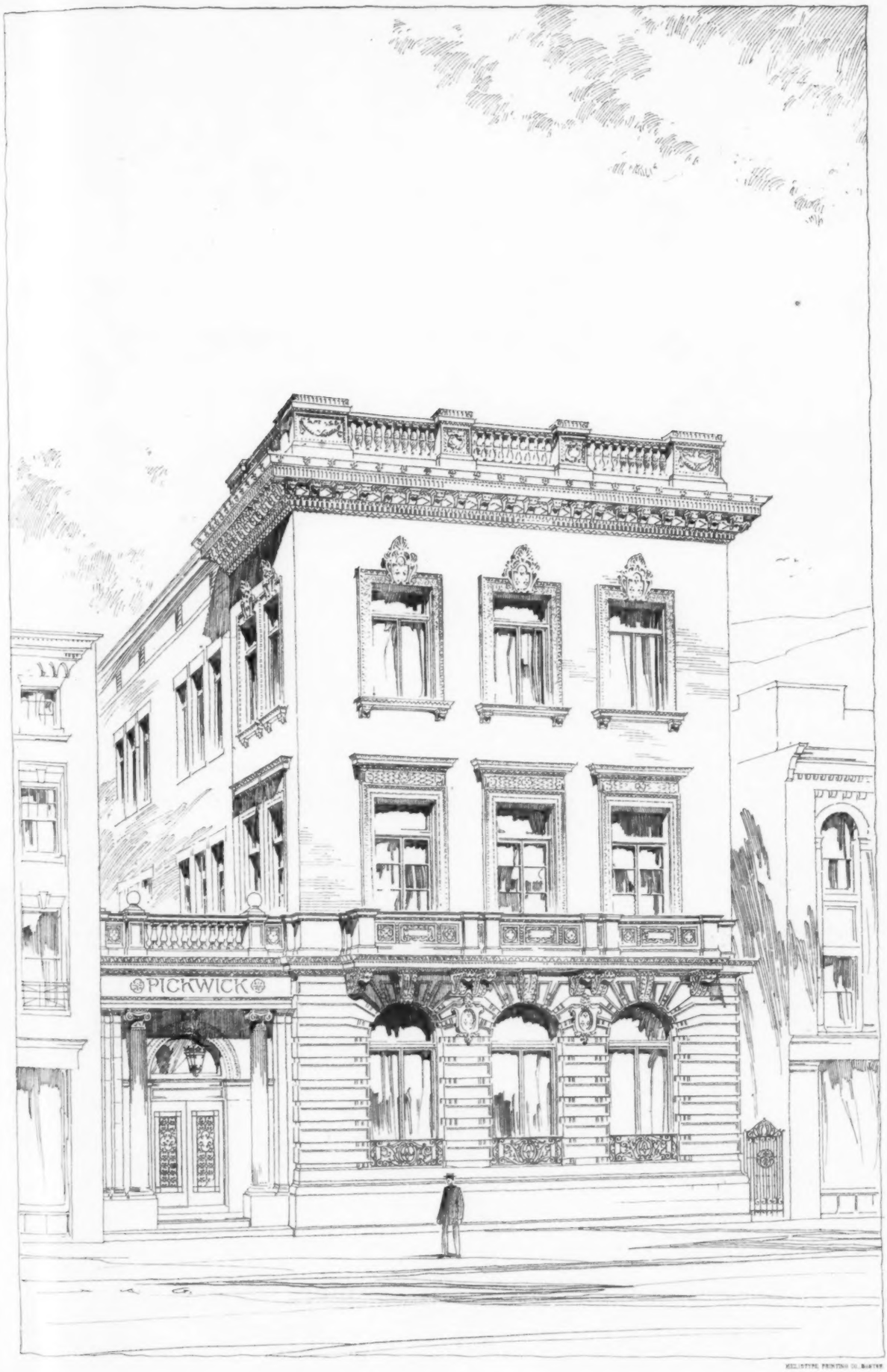
THE TEMPLE OF IYEMITSU.

BUILDING OF THE NEW SOUTH LOAN AND BUILDING ASSOCIATION, NEW ORLEANS, LA.

SHEPLEY, RUTAN & COOLIDGE, Architects.



PICKWICK CLUB-HOUSE, NEW ORLEANS, LA.

SHEPLEY, RUTAN & COOLIDGE, Architects.

of the Bill he considered it too sweeping, striking at the root of immense money interests involved in unimproved property in the select down-town district, and working great injustice to the holders of such property, while giving undue advantages to the great number of owners of tall buildings already erected. The matter of air and light would, to a great extent, take care of itself, as it would not pay to erect structures with offices that are not rentable from lack of these principal conditions.

The sanitary local conditions are more favorable than in any other large city on earth,— mostly straight streets which receive sunlight at least once a day, narrow shape of the island, surrounded by an immense water area on all sides. Furthermore, centralization in space is a great requisite for the immense and constantly-increasing commercial interests representing the banking business and the great staple articles. Therefore, to forestall opposition to the Bill in its present shape, he suggested that its terms be limited so as not to apply to some exempted part of the lowest portion of the island, which is and which will be exclusively devoted to business.

Mr. Hardenburgh said: That the only point he wished to make was that, in order to facilitate the passage of any law intended to bring about this result, a simple fixed limit be placed, rather than a sliding scale, as suggested in the Bill before the Legislature.

He wished to be placed on record as being in favor of a law restricting the height of buildings.

Mr. Marshall said: It is a remnant of provincialism, that we allow ourselves to cling to the notion that only a restricted area of our city is fitted for important business buildings. New York, as it grows, must necessarily divide up into sections, as London has, each of which sections will have its minor business centres. This process is apparent even now, and it will continue, to the great advantage of the city and its people. The restriction of heights of buildings would hasten this desirable movement.

While some loss might be incurred by a few wealthy corporations or capitalists through the enactment of this law, a vast number of less wealthy land-owners would certainly be benefited by the spreading of first-class business over regions now used for manufacturing and tenement purposes, which would be encouraged if the law were enacted. Thus in the end land-owners, as a class, would be benefited.

Mr. Boring's contribution to the question was information gotten from real-estate men who have in charge the majority of large offices down-town, viz.: "That the tenants who fill the new buildings are *drawn from old buildings* in the majority of cases, and that the number of tenants in the business district does not increase one-fourth so fast as offices do," a statement tending to disprove the necessity of immoderately high buildings down-town.

Mr. Tuthill's remarks were made with reference to a suggestion that, instead of restricting the height of the structure, it would be better to restrict the proximity of high structures, and took the ground that the existence of any one high structure would not only prohibit the erection by another property-holder of a similar high structure on the immediately adjacent property, but would also work restriction for a similar erection on the opposite side of a narrow street. So that the injustice to property-owners would result in being still more unjust.

Mr. Brunner said: The objections to the Bill under discussion are not of a weighty nature. The only one that needs consideration at all is the question whether injustice will be done to some property-owners. No measure of any sort could be devised that would not do some injury to some class of citizens, and in this case justice to the many by far outweighs a possible injustice to the few. It seems to me that the reasons for this Bill so ably advanced by the gentlemen who have spoken are entirely convincing. I think it quite important that the position of the New York Chapter should be publicly and emphatically expressed, and I vote for the endorsement of the Bill by the Chapter.

The Secretary read a letter from Mr. Kendall, saying that absence in the northern part of the State would prevent his attendance, but he desired to be noted as strongly in favor of limiting the height of buildings in New York City, as set forth in the recommendations of the City Club.

The following resolutions were passed: —

On motion of Mr. Marshall: That the New York Chapter of the American Institute of Architects fully approves of the passage of the law limiting the height of buildings in New York City, known as the Pavey Law.

On motion of Mr. Carrère: That a committee of three be appointed by the Chair to prepare a circular addressed to the public setting forth the advantages of said Bill to property in the City of New York.

On motion of Mr. Post: That the same Committee represent the Chapter at either a hearing at Albany, or before a legislative investigating Committee, if such be appointed.

On motion of Mr. Cook: That the Secretary be directed to send a copy of the resolutions passed in connection with the Pavey Bill to the Fine-Arts Federation.

President Upjohn appointed Messrs. Carrère, Marshall and Cook the Special Committee to prepare a circular addressed to the public on the high-building question.

Mr. Hardenburgh brought up the project, presented by the Municipal Art Society, for some form of monument in memory of the late R. M. Hunt, and a resolution was passed, on motion of Mr. Post, that all the members of the Chapter be asked to subscribe to a Hunt memorial fund. The President and Secretary were desired to prepare a circular letter to the Chapter members, embodying said resolution, with suitable preambles.

The meeting adjourned to the call of the Secretary.

A. J. BLOOR, *Secretary.*

SOCIETY OF BEAUX-ART ARCHITECTS.

THE regular May meeting of the Society was held May 18th. Twenty-three members attended.

After the dinner Prof. Wm. R. Ware, of Columbia College, who was present as a guest, made an address, speaking principally of the Roman School.

In the business meeting, an amendment to the Constitution, admitting to full membership all those present at the original meeting of organization of the Society, was adopted.

Phillip Sawyer, 160 Fifth Avenue, New York, Rudolph L. Daus, 26 Court Street, Brooklyn, and Herbert D. Hale, 31 State Street, Boston, were elected members.

Before adjournment, arrangements were made to hold a special meeting in connection with a visit to the Columbia College Architectural Exhibition. EDGAR A. JOSSELYN, *Secretary.*

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

THE KENWOOD CLUB-HOUSE, CHICAGO, ILL., ARCHITECTS, MESSRS. PATTON & FISHER AND CHARLES S. FROST, CHICAGO, ILL.

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

A DESCRIPTION of this building was published in our issue for January 18 last.

PLANS, ELEVATIONS AND SECTION OF THE KENWOOD CLUB-HOUSE, CHICAGO, ILL.

THE TEMPLE OF IYEMITSU, JAPAN.

FOR description see article elsewhere in this issue.

THE PICKWICK CLUB-HOUSE, NEW ORLEANS, LA. MESSRS. SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS, BOSTON, MASS.

BUILDING FOR NEW SOUTH BUILDING & LOAN ASSOCIATION, NEW ORLEANS, LA. MESSRS. SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS, BOSTON, MASS.

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

PALAZZO FARNESE, CAPRAROLA, ITALY: DECORATION IN THE PALAZZINA DELLA VILLA.

PALAZZO FARNESE, CAPRAROLA, ITALY: CEILING DECORATION IN ROOM BELOW THE HALL OF COUNCIL.

ROYALL HOUSE, MEDFORD, MASS.: FRONT DOORWAY. MEASURED BY MESSRS. CHARLES E. PATCH AND FREDERICK N. REED, AND DRAWN BY REED.

A GROUP OF CHURCH DOORWAYS.

[Additional Illustrations in the International Edition.]

THE LIBRARY: KENWOOD CLUB-HOUSE, CHICAGO, ILL., ARCHITECTS, MESSRS. PATTON & FISHER AND CHARLES S. FROST, CHICAGO, ILL.

[Gelatine Print.]

BALL-ROOM IN SAME CLUB-HOUSE.

[Gelatine Print.]

SECOND-STORY STAIRCASE IN SAME CLUB-HOUSE.

[Gelatine Print.]

NO. 21 CORNHILL, LONDON, ENG. MR. J. MCVICKAR ANDERSON ARCHITECT.

IMBECILE WARDS, STOKE-ON-TRENT, ENG. MR. C. LYNAM, ARCHITECT.

Perhaps no part of a workhouse offers more points for the attention of an architect than that required for the accommodation of imbeciles, as the divisions of this class of inmates are numerous and their separation essential, yet they have to be housed collectively. These plans show the method of meeting such requirements as adopted by the Guardians of Stoke-on-Trent, and approved by the Local Government Board, whose medical inspector, when visiting the buildings after they had been in occupation for some time, pronounced them to be exceptionally well adapted to their purposes. Where the strictest economy is an absolute necessity, nothing but the sternest compliance with this rule is admissible in the externals of the buildings.

WILLESDEN GREEN FREE LIBRARY. MESSRS. NEWMAN & NEWMAN, ARCHITECTS.

The design for the Willesden Free Library, which we illustrate this week, was selected in a limited competition. The building consists of lending library, 25′ x 38′; reading-room, 25′ x 33′; reference library, 16′ x 23′; librarian's office, book-store, offices and the librarian's rooms on the first floor. The plan of the building is V-shaped, having frontages of about 78 feet to two roads, with the entrance in the centre, as shown. The cost of the building and fittings was 2,600*l*.

COMMUNICATIONS

[*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.*]

A CORRECTION: THE ARCHITECTURAL COURSE AT CORNELL.

Ithaca, N. Y., May 23, 1896.

To the Editors of the American Architect: —

Dear Sirs, — The editorial in your issue of April 4th concerning a proposed course of study in Architecture at Cornell University was evidently inspired by an article in the New York *Times* of March 21st, which was entirely unauthorized by any one here. The department, it is true, has been elevated to the dignity of a college, with an increase in the staff of instructors, and the promise of liberal additions to the present facilities for teaching. Some changes will be made in the curriculum, but there is no intention of remodelling it "after that pursued in the Paris school." Your criticisms on the "plan submitted to the Fine-Arts Society of New York," and so kindly approved by it, are quite correct.

Yours truly, Chas. Babcock.

EXHIBITIONS

Boston, Mass. — *Paintings recently purchased; the Martin Brimmer and R. Hall McCormick Pictures; Japanese Paintings; New Accessions to the Print Department:* at the Museum of Fine Arts.

Paintings by New England Artists: at the Jordan Art Gallery, 450 Washington St., until June 1.

Lithographs by Whistler and others, also, Etchings by Robertson K. Mygatt: at James M. Hart's Gallery, 220 Boylston St.

Brooklyn, N. Y. — *Pictures by Swedish Artists:* at the Pratt Institute, May 29 to June 13.

Chicago, Ill. — *Eighth Annual Exhibition of American Water-colors:* at the Art Institute, April 16 to June 7.

Cincinnati, O. — *Annual Spring Exhibition:* at the Art Museum, May 16 to June 30.

New York, N. Y. — *Paintings recently acquired, and Retrospective Loan Collection of American Paintings:* at the Metropolitan Museum of Art.

Philadelphia, Pa. — *Competitive Designs for the Decoration of the Council Chamber:* at the Pennsylvania Academy of Fine Arts.

NOTES AND CLIPPINGS

The Music-Hall ancillary to Archæology. — It is doubtful whether Susie Langdon, when she was dancing in the Music-Halls of Brighton, and of the London suburbs, at an infinitesimal rate of pay per week, ever dreamed that her name would become celebrated throughout the scientific world as that of the Mæcenas whose generosity and munificence had brought about the publication of an ancient history of Alexander the Great. Mr. Budge, who is the chief of the Egyptian and Assyrian Department of the British Museum in London, had succeeded in making remarkable translations of the Ethiopic life of Alexander the Great, which is in the possession of the Museum, but had been unable to scrape together sufficient money for its publication. The manuscript had been lying in his desk for several years, when a happy fate made him acquainted with the ex-Music-Hall *figurante*, Susie Langdon, who has now become the wife of Sir Henry Meux, the millionaire brewer. Lady Meux offered to defray the whole expense of publication, and the result is a couple of magnificent volumes, splendidly got up and dedicated, in the largest letters, to Lady Meux. It sheds new light upon the career of Alexander the Great and is of surpassing interest and importance to historians and students of Roman and Grecian times. This is certainly a more sensible manner of associating her name with Egyptology than the project which she had in view when she last visited Cairo. On that occasion she moved heaven and earth to purchase from the Egyptian Government, no matter at what cost, the obelisk at Heliopolis, the only one of all the so-called needles of Cleopatra which still remains standing upon its original site, where it was erected thousands upon thousands of years ago. She took the refusal of the Egyptian Government very much to heart, but consoled herself shortly afterward by buying from the city authorities in London the old City Gates of Temple Bar, which now figure at the principal entrance of her magnificent country place, Theobald's Park, where this relic of old London is seen to infinitely greater advantage, set off as it is by the grand old trees around it, than in London at the top of the Strand. Somehow or other, Lady Meux is always managing to keep her name before the public and always in such a way as to win for her the good-will and sympathy of her fellow-citizens, since her conduct, if eccentric, presents an agreeable contrast as far as propriety is concerned to that of her awful mother-in-law, old Lady Louisa Meux, who was constantly being turned out of Paris and of other Continental cities in consequence of the public scandal which her conduct aroused. — *Marquise de Fontenoy in the Philadelphia Press.*

Facts about big Lighthouses. — In a paper on "Recent Developments in Lighthouse Engineering," Mr. N. E. Gedye said that reduction in the length of flash emitted by lighthouse apparatus had resulted in great increase of intensity of beam, and in a manner he implied some censure on the Trinity House Corporation for still adhering to the old established system of long duration of flash. The facts are that the Elder Brethren have been much exercised over this question of length of flashes. They do not deny that some increase of intensity may be gained by condensing the light into short flashes, but from the practical seaman's point-of-view something more than mere intensity is required. A flash of light or a period of darkness must be measurable for the mariner's purpose. The Elder Brethren are not very ready to introduce these short flashes unless they can make them really of practical service. At Lundy, for instance, by contrast, a quick-flashing light (two flashes every twenty seconds) is to be placed on one end of the island, while the old light, with its one flash every minute, will be shown from the other end. In regard to the fine light which is to be shown from Cape Leeuwin, Western Australia, no doubt much credit is due to the designer and manufacturers of the apparatus; but to call it the most powerful oil-light in the world is not doing justice to our own lights already established in this country. The candle-power of the beam of the Cape Leeuwin light is claimed to be 145,000, but the value of the beam of the oil-light on the Bishop Rock, Scilly, is 170,500 candles and that of the new Spurn Point light 179,500 candles. Mr. Gedye made the statement that there are several electric-lights in France up to 23,000,000-candle power. As a matter of fact, the most powerful of all are those of Cape La Heve and L'Ile d'Yeu, but the authorities claim a value of less than 23,000,000 candles for each of them. It is probable that not much advantage is gained by referring to such enormous and almost fabulous figures; it is wonderful, amazing, but of no practical service. — *London Times.*

The Hod-carriers' Quickstep. — A North Side man tells this story: Last week he stood in front of his uncompleted flat building and chafed and worried as he saw the poky laborers go about their work as if the place wasn't to be turned over during the first week in May. The men who carried in the brick and tiling from the street were especially annoying to the owner of the building. They moved about at a sleepy and turtle-like pace, and did not appear to be worried in the least when their slowness was the cause of delay on the inside work. While the North Side man was watching them in disgust an Italian with a barrel-organ halted just across the way and began grinding out a lively march. He had been playing for several minutes before the North Side man observed the marvellous effect of the music on the men who were carrying the brick. They came out of the building like circus horses in a grand *entrée*, hurriedly filled their hods and then marched back into the building at double-quick, stepping high. The owner of the building went across the street and gave the Italian a quarter, in return for which he played lively tunes for a half-hour. During that half-hour the laborers did a half-day's work. Next day the owner ran across another Italian and sent him over to the corner to play. The laborers didn't know what a mean trick had been played on them. — *Chicago Record.*

Lord Leighton's House proposed as a Memorial. — A promising movement has been started in favor of purchasing Lord Leighton's house and its art contents as a memorial to him. The undertaking will require $250,000, but an Executive Committee has been appointed to solicit subscriptions and the friends of the late President of the Academy are hopeful that the money will be raised. The health of his successor, Millais, is critical, the nature of his disease being cancer of the throat, and it is making rapid progress. — *N. Y. Tribune.*

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CONTENTS.

A SERIOUS controversy has arisen over the statue of General Sherman, which is to be presented by the Society of the Army of the Tennessee to the City of Washington. Some time ago the Society invited American sculptors to submit designs for the statue in competition, announcing that a commission of experts, consisting of sculptors and architects, the latter to judge of the pedestal and other architectural incidents, would select from among the competing designs those which seemed most suitable, and that this selection would precede the award by the Society's committee, of which General G. M. Dodge of New York was chairman. A large number of designs were submitted, and judged by a commission which included Messrs. Augustus St. Gaudens, Daniel C. French, J. Q. A. Ward, Bruce Price and George B. Post. This commission, whose competency no one could question, selected from the designs those of Messrs. J. Massey Rhind, Charles H. Niehaus, P. W. Bartlett and William Ordway Partridge. The committee of the Army of the Tennessee met to consider the award of the commission, and decided to improve upon it by substituting the name of Mr. Carl Rohl Smith, of Chicago, for that of Mr. Partridge, and requested these four to prepare more detailed models of their designs, to be submitted in a new competition. The result of this second competition has been that the Army committee has persisted in its unfair course, and has awarded the contract to Mr. Smith, a conclusion which seems to warrant the inference that the committee intended from the start that he should have the job — and "job" it appears to be. In partial explanation of the committee's action, it is alleged that Mr. Smith was the only competitor canny enough to introduce in his design portraits of the several members of the committee.

MEANWHILE, Mr. Partridge, whose indignation at the treatment accorded him may be imagined, decided to seek redress in the courts, and is said to have sued the chairman of the Society's committee for ten thousand dollars, as damages for his unjustifiable exclusion from the second competition, after his selection by the expert commission, and in violation, as he claims, of the agreement made with the competitors that the expert commission should have absolute discretion in the selection of the designs to be admitted to the final competition, the Society reserving to itself only the choice among these. His cause has been taken up by the artistic societies, who have sent protests to General Dodge, as Chairman of the Committee, but, so far, no reply has been made to their communications. Their sympathy will, however, be not only comforting, but useful, to Mr. Partridge, if he carries his case into court, as we hope he will. If the Society of the Army of the Tennessee, or its agents, led the competitors to think that the choice would be among those selected by the expert commission, it has made a valid contract with them to that effect, and the Courts will see that the contract is enforced, or damages paid to persons injured in reputation by failure to carry it out. It is quite possible that some obscure clause may have been slipped into the invitation to competitors, under cover of which the right to set aside the award of the experts may be claimed; architects know only too well the tricks of this sort by which they are deceived and defrauded; but Mr. Partridge and his artist friends may be well assured that this will not avail unless the reservation was so clear that any intelligent man would have understood it in the same way that the committee did. The fact that so many sculptors of skill and reputation took part in the competition is convincing evidence that no such reservation was apparent to them, for none of them would have had anything to do with a farce in which the award of the experts did not bind anybody; and the highest courts are always those which pay the least regard to quibbles and tricks. As in so many other cases, we regret that there is no association for the defence of artistic rights which can help Mr. Partridge to carry his suit to a final decision, for the benefit of other artists and architects. In this country, the usual ending of controversies of the sort is that the aggrieved artist, tired of controversy, and nearly ruined by legal expenses, accepts a small sum in settlement of his claim, and the case is hushed up; while in France, and, to a certain extent, in other countries, he can place his papers in the hands of the jurisprudence committee of his professional society and dismiss the matter from his mind. If this committee, which is known throughout the community for its firmness in maintaining artistic rights, as well as its discretion and experience in such matters, does not succeed, as it generally does, in obtaining redress by peaceful means, it prepares the case, with the aid of its counsel, pays all the expenses, and calls on the plaintiff only for his testimony at the actual trial, receiving reimbursement for its outlay partly through the modest annual dues paid by all the members of the association, and partly from the costs awarded by the courts to the petitioners whom it successfully assists.

WE imagine that architects who have visited Buffalo within the past few years have often made private comments to the effect that it was high time that the city should be put under the protection of a building-law. Towns newly developed from the village state are notorious in the building community for the recklessness of the construction which passes current in them, and Buffalo has only within a few years awakened to the consciousness of its responsibilities as a great city. One of the structures which Buffalo of forty years ago found satisfactory, the Brown Building, on the corner of Main and Seneca Streets, fell in a few days ago, as a result, apparently, of natural feebleness of constitution, aggravated, possibly, by an attempt which was being made to underpin and strengthen it. Whether the temporary shoring which was put in to hold up the walls while the foundation was being removed was insufficient does not appear from the newspaper account, but it is said that a broken iron column, full of sand-holes, was found in the ruins. If this is true, and if the column was one of those originally used in the building, it seems quite possible that an unusual load might have been thrown upon it in the process of shoring which it was incapable of resisting. Contractors now do not often make the mistake of using insufficient shoring while underpinning a building, but they generally count upon a degree of strength on the part of the old walls and columns approaching that which would be shown by modern brick and ironwork, and it may happen that work with concealed defects, which has just managed to keep together for forty or fifty years, will give way under a slight variation of the load upon it, such as it ought to bear without any difficulty whatever.

A CASE of importance to architects who are careless in giving certificates was recently decided in Massachusetts, where an owner sued an architect for damages for having negligently given certificates to a contractor for more than the

amount due him, and for having injured him in other ways by carelessness and negligence. The case, which was carried to the Supreme Court, of course rested on the interpretation of the contract between the architect and owner, but the Court decided that this contract implied a warranty on the part of the architect of the correctness of his certificates to such an extent that he was bound to make up out of his own pocket the loss which his employer sustained through overpayments innocently made in accordance with the architect's certificates. It will be remembered that a Canada court came to the same conclusion, and architects will do well to take warning accordingly.

EVERYBODY who has been in the Paris Opera-house will remember the enormous chandelier which hangs in the middle of the auditorium. This object is so constructed that it can be raised and lowered, and for that purpose is counterbalanced by weights above the ceiling. A few days ago, during a performance, one of these weights, weighing about a thousand pounds, became detached in some way, and fell through the ceiling into the upper gallery, killing one person and fatally injuring another, besides wounding five more. Curiously enough, within a few days afterwards a clock-weight in a church in Massachusetts, consisting of a box filled with stones, and weighing eighteen hundred pounds, fell in a similar manner about forty feet from the tower of the church, breaking through the ceiling of the church and the gallery floor, but, fortunately, injuring no one. This enormous weight was suspended by a wire cord, three-eighths of an inch in diameter, which had been in place for about thirteen years. The sexton had just wound up the clock, and the strain on the cord incident to this operation was probably too great for its remnant of strength.

AFTER several years of discussion, it has been finally decided to use the ground between Fifth and Sixth Avenues and Fortieth and Forty-second Streets, New York, now occupied in part by the old distributing reservoir, as a site for the proposed building for the Public Library, which is to combine the Astor, Lenox and Tilden foundations. Sketch plans were made long ago, by several architects, for the proposed building, but it is not certain that any of them will be used. The site is a very fine one, besides being extremely central and convenient, and it is to be hoped that the city may see fit to provide for a building worthy of it.

OUR readers will remember the intelligent and reasonable view which has already been taken by the Maine Courts of the duties and responsibilities of architects, and it is a satisfaction to be able to note another Maine decision affecting the profession, in which the same principles are maintained. In a recent case, an architect was employed to prepare plans and specifications for a house. He had to sue for his pay for them, and the owner, who had not apparently used them, set up in defence that the architect's services were not beneficial to him, for the reason that they were performed in a manner contrary to his express directions and wishes. The explanation of this was, as appeared from the testimony, that he requested the architect to make him plans and specifications for a house to cost twenty-five hundred dollars, "and no more," as he alleged; and when the plans and specifications were made, it turned out that they could not be carried into execution for less than about twenty-seven hundred dollars. In the court below, the judge instructed the jury that if the architect was explicitly told by the defendant, in addition to other things, that the building he was designing must not exceed a certain named cost, the architect should have made plans accordingly, or stated that he could not do it, and thereupon declined to do it; and that if he undertook to make plans with the restriction as to the cost of the building, he must do it before he could recover any pay.

THE Supreme Court held that this instruction was erroneous. "It punishes the plaintiff" said the Chief Justice, in delivering the opinion of the Court, "for what might "be merely an honest mistake or miscalculation. It leaves "out the elements of care and good faith. . . . The ruling "implies a guaranty or warranty, when none was testified to, "or really pretended. Upon the testimony reported, the Court "is of the opinion that even if the defendant's version of the "facts be true, then the undertaking of the plaintiff was to "make plans for a house to cost twenty-five hundred dollars "and no more; and if, acting in good faith, he exercised his "skill and ability in an endeavor to bring about that result, "that it is all that could be expected or required of him; "and no defence is established against his claim even if he "failed in his attempt. But if the house designed by him "could be built for less than twenty-seven hundred dollars, "it could hardly be called a failure, especially in view of "the interferences on the part of the defendant's wife; "nor a failure if the plaintiff could have so altered his "plans, as he claimed might have been done had he been "permitted, as to reduce the house in price; and it seems "preposterous to say that he could not; and he was willing to "make alterations, but the defendant or his wife would not "consent thereto." In the first part of the opinion the Court laid down its view of the general principles of the employment of architects as follows: "An architect is not a "contractor who enters into agreement to construct a house "for its owner, but is his agent to assist him in building one. "The responsibility resting on an architect is essentially the "same as that which rests upon the lawyer to his client, or "upon the physician to his patient, or which rests upon any "one to another where such person pretends to possess some "skill and ability in some special employment, and offers his "services to the public on account of his fitness to act in the "line of business for which he may be employed. The under-"taking of an architect implies that he possesses skill and "ability, including taste, sufficient to enable him to perform "the required services at least ordinarily and reasonably well, "and that he will exercise and apply in the given case his "skill and ability, his judgment and taste, reasonably and "without neglect. But the undertaking does not imply or "warrant a satisfactory result. It will be enough that any "failure shall not be the fault of the architect. There is no "implied promise that miscalculations may not occur. An "error of judgment is not necessarily evidence of a want of "skill or care, for mistakes and miscalculatious are incident to "all the business of life." It will be remembered that the Supreme Court of Texas held the same doctrine, in very similar words, in a case of this kind, so that architects may feel that their legal position in such matters is now tolerably well established in this country.

AN address, signed by Messrs. Cornelius Vanderbilt, Eastman Johnson and Stanford White, as a committee, has been sent to members of the Century Association, in New York, better known as the Century Club, asking subscriptions toward the memorial to the late Richard M. Hunt, which is to take the form of a monumental seat, adorned with a portrait bas-relief of Mr. Hunt, to be erected against the wall of the Central Park, on Fifth Avenue, in the axis of Eighty-third Street, from the designs of Mr. Bruce Price as architect and Mr. Daniel C. French as sculptor. Mr. Hunt was for forty years a member of the Century Association, and its activity in helping the movement to erect in the city a suitable memorial of him is in rather pleasing contrast with the ordinary behavior of clubs, which are very far from being distinguished for their demonstrative grief over the decease of any of their members.

SPEAKING of monumental seats, dear as the notion of an "exèdre" is to the Paris-educated architect, there is reason for supposing that a form of sculptured stone might be devised which would be quite as beautiful, and even as useful, and, under some circumstances, might present a more dignified appearance. The early tourist in New York, for instance, is apt to be only moderately delighted with the æsthetic impression produced by the Farragut monument, with the water-nymphs on its pedestal keeping watch over two snoring tramps, stretched out on the seats below them; and it is certainly desirable to avoid such associations with works of art, and provision against them might, with advantage, form part of the problem which the architect entrusted with that part of the work usually has to solve. Even the sculptor, however, occasionally needs to keep the matter in mind. The grandeur of the Nelson monument, in Trafalgar Square is not enhanced by the row of children who perch themselves on the lion's tail, which seems to have been made particularly stiff and straight for that purpose; and there are plenty of instances where the dignity of works of art is spoiled by the thoughtless. Of course, it is the fault of the thoughtless, who ought not to do such things, but it would be still better if the dignity could be put out of their reach.

BRUGES.

WE came into Bruges towards evening on the 18th of last September. We had travelled over from Antwerp, via Ghent, and immediately on alighting from the train we fell hopelessly in love with this dear old Flemish town.

I am surprised at the number of people who seem to circle round Bruges, or pass by it at no great distance, as though it were unworthy of a visit. In reality I question whether there is any town in the Netherlands more deserving of the attention of architects and artists. Here is glory of color, grace of line and quaintness of age, all picturesquely blended under the half-pathetic, but softening influences of decay.

We took shelter in that hospitable but unpretentious little inn, the "Hotel Brittanique." Our situation was central; we were close to the large Market Place, within a stone's throw of the grand old Belfry, swept up into the sky, and from that far height the chimes were almost constantly clashing out their music across the red roofs of the town. In that little gem of a poem by Longfellow called "Carillon" he has somehow caught the music of those lofty bells —

> "In the ancient town of Bruges,
> In the quaint old Flemish city,
> As the evening shade descended,
> Low and loud and sweetly blended,
> Low at times, and loud at times,
> And changing like a poet's rhymes,
> Rang the beautiful wild chimes
> From the Belfry in the Market
> Of the ancient town of Bruges."

Our first walk through Bruges showed us plainly that it was an artist's paradise. At every turn one is confronted with a sketch, and every time you look down a street you see a picture. The quaint and crooked gables cut the sky in jagged lines; sluggish canals curve through the town — spanned frequently by wide-arched, hump-backed bridges; the people passing over them stop and lean their elbows on the broad copings, while they look down into the water or watch the white swans gliding to and fro. The coloring is gorgeous — a sea of red-tile roofs, across which the blue smoke curls, walls of yellow plaster, or of brick burned to all manner of delicate tints, green trees along the streets, bright flowers in the windows and the yards; above, a sky of deepest blue, against which you see the queer old gables stretching down the street in tooth-like lines, and then a glimpse of the wide, green country out beyond, with broad-armed windmills slowly turning along the far horizon.

There was a time when these broad canals swarmed with all manner of craft. Richly-laden vessels from Venice, Genoa and Constantinople discharged their cargoes here. Those were the days when Bruges was in its glory; it was then the residence of the Counts of Flanders, and the Dukes of Burgundy held their courts here.

During the thirteenth, fourteenth and fifteenth centuries it was an important, powerful and wealthy city, and famed, moreover, in art and letters. But as the size of ships increased the commerce of Bruges grew less and less, and was at length almost entirely transferred to Antwerp. Large boats could not get up the main canal

leading from the sea, although the coast is only about eight miles distant; so the glory of Bruges faded away like that of Tyre of old, and the ships came no more unto her. At the present day a large part of the town has a deserted appearance and many of the inhabitants are said to be paupers.

It is the general effect of the street architecture of Bruges that fascinates the student rather than the study of individual buildings, though of these there are a number that are deserving of close attention. The cathedral is a vast, clumsy structure, rendered still more ponderous in appearance by late additions of an inappropriate nature. The proportions of the interior, however, are good, and the student of early Flemish art will find much to interest him in the old pictures.

In the same part of the town stands the ancient church of Notre Dame, an early Gothic building dating from the twelfth century. It is surmounted by a tower almost four hundred feet in height. Notre Dame, like the cathedral, contains many very interesting works of art, those of Memling being of chief importance.

A small church of elegant daintiness and richness is the Chapelle du Saint Sang, so called because of the claim that several drops of the Savior's blood are here preserved — brought hither from the Holy Land in 1149. On Fridays the blood is liquified for the benefit of the people. The little chapel is rich in flamboyant decorations, and dear old saints lean this way and that in their dusty niches, with good substantial halos balanced like dinner-plates upon their heads. Adjoining is the Hôtel de Ville, — a charming Gothic structure, — along the chief façade of which are forty-eight niches decorated with the statues of the Counts of Flanders. Within, the great hall is deserving of close study, especially on account of the beautiful Gothic ceiling of wood with pendant ornamentation which dates from the fourteenth century.

A broad canal runs all around the town, spanned here and there by bridges. On the town-side of such bridges stand massive gateways, beneath which you pass when going out into the country. From this large, circular canal numerous lesser streams penetrate the town itself and wind among the quaint old houses, so that Bruges looks like a little Venice.

Strolls into the surrounding country well repay the visitor at

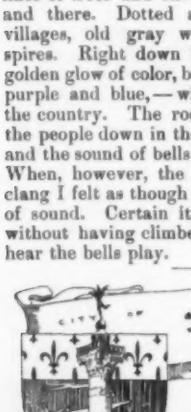
Bruges. Those delightful old Dutch farmhouses with long sweeping roofs are picturesque in the extreme. Their colors are so rich and strong, with walls of yellow and roofs of red. Stiff old Lombardy poplars stand up beside them and all around the land lies level and green, with windmills turning here and there in the gentle breeze,

while often you see a red sail stealing through the meadows where some invisible canal lies between grassy banks. But all these things mean water-color sketching, rather than architectural study.

To see Bruges rightly, climb to the top of the grand old Belfry. This is no small thing to do, — at least so I thought after I had mounted to a height of almost 350 feet. The stair is spiral, and for the greater part of the way totally dark. The steps were thin and loose and covered with dirt. An old rope followed their windings to act as a hand-rail. Four or five times in the course of the long ascent I came opposite to narrow dusty little chinks of windows, through which I could obtain faint glimpses of the views which lay about me. At length I reached a chamber far away, near the top of the tower, where the man lives who has charge of the chimes. The machinery which controls them is arranged on the principle of a huge musical box: a great cylinder set with pins revolves slowly, the pins catching on levers which communicate with the bells hanging overhead. The man went with me to the floor above, where all the great bells are, and pointed out the various points of interest which could be seen within the limits of the grand view which lay about us. I have rarely looked upon a lovelier prospect. It was a warm and mellow September afternoon and the coloring of the landscape was soft, yet strong. Away to the west lay the sea with its curving coasts, on which could be seen the towns of Ostend, Blankenberghe and Heyst. Inland all was green and level, with long lines of trees and silvery canals stretching in straight courses here and there. Dotted all about in the plain were little red-roofed villages, old gray windmills and churches with sharply-pointed spires. Right down beneath me lay the old town itself, all in one golden glow of color, bright as a bed of flowers, — yellow, red, orange, purple and blue, — with white roads reaching out into the green of the country. The rooks flew round the Belfrey with loud cawings; the people down in the market-place looked no larger than pin-heads, and the sound of bells came faintly up from far-off spires and towers. When, however, the great chimes beside me began to clash and clang I felt as though my ears would be broken-in with such shocks of sound. Certain it is that no one should go away from Bruges without having climbed to the top of the Belfry to see the view and hear the bells play.

George Spencer Morris.

PARIS



SALON OF THE CHAMPS ELYSÉES.

THE *Salon* of the Champ de Mars contains 1,265 paintings, and we found that that was too many. But what can be said of the *Salon* des Champs Elysées, which contains 2,093 of them? Including sculpture, black-and-white work, architecture and *objets d'art*, the number of exhibits figured in the catalogue stands at 4,879. This is simply terrifying, and it is discouraging too, for, with the best will in the world, it is absolutely impossible to see everything, and one has to run the risk in this overwhelming flood of overlooking some interesting work that ought to be noted. Thus at this *Salon*, as at the other, the artists do themselves great wrong in their attempt to attract public attention: at the Champ de Mars this attempt is made by complicated means and extravagant ideas; at the Champs Elysées, though there is more wisdom shown, still the endeavor is made to attract through sheer size.

We are shown on canvases that are as big as a building-site subjects that might be really charming if shown at a modest scale. *Genre* subjects are shown where the figures are more than life-size. At the Champ de Mars they cultivate symbolism, here they show a leaning toward allegory. Neither endeavor is any more clear than the other, but it must be allowed that at the Champs Elysées we meet talent of the more serious order and a greater regard for sincerity.

There is one point that all our artists thoroughly understand, and that is how to conceive subjects that are gloomy and horrid. These exhibitions have become veritable chambers of horrors, and it is rather odd that no one has yet thought of clothing the attendants like *croque-morts* and scattering a supply of skulls and cross-bones over the draperies and benches. At least these devices would aid to produce a logical environment for these burials, deaths, dying martyrs, tortures, battlefields and other similarly cheerful subjects that are hung on the walls.

At the very entrance one is taken possession of by one of the most overpowering of the paintings, — admirably composed, it is true, but painful to look at as a whole or in detail. The subject selected by M. Tattegrain, who treats it at great size, is an episode of the siege of Château-Gaillard, by Philip Augustus, in 1203. The garrison, forced to go on short rations, has driven out all the useless mouths — children and old men and women. According to the chronicle, these unfortunates, driven back by the besiegers, wandered during four months about the castle walls, living as best they could, on herbs and roots at first and later on their dead fellow unfortunates. Of this lugubrious episode Mr. Tattegrain spares us not one detail. Amid a winter landscape, which in itself is really admirable, under the pale light of a rising sun which slightly reddens the snow, all these men and women cast into the castle moat, famished, and shivering with cold, are scraping away at the frozen ground, in the hope of finding some neglected rootlet under the snow. One group is quarrelling over a dead body already partly cut up. Another group is all ready to spring upon a now dying man as soon as his last breath is spent, while here and there children look in terror on these horrid scenes. As you see, the picture is far from inspiring gaiety, but it is treated with high skill and is a work of really savage grandeur.

M. Rochegrosse, whose "Balthazar" of 1891 is not yet forgotten, also wishes to move us and to make us *think* with a huge affair that he names "Human Agony." An enormous mass of men and women stamping upon and trampling on one another are scaling a peak which overlooks a city and at the foot of which lies a cemetery. Wrung with agony, they stretch their arms toward two bright beings who are flitting across the sky and who, doubtless, represent the chimeras of this life. This philosophical conception is heavily rendered by the artist, who, contrary to his usual habit, has painted a picture as black as the modern coats of his subjects. In spite of its great size, the scene is wholly lacking in grandeur and is a blunder of the artist's, who, to be sure, has somewhat recovered ground with another painting, in which a young noble in rose-colored dress is presented by his lady-love to her father, a stalwart blacksmith.

What is of interest to note at this exhibition is the very respectable number of artists who have remained faithful to historical painting, a department which is so neglected at the Champ de Mars. The results are not always satisfactory, but the effort, nevertheless, evidences a care for composition and historical research which deserves praise. Whatever we may say, it is a style of painting which can be undertaken only by artists who have a feeling for grand art, and we can only applaud the excellent intentions of MM. Thivier and Surand. M. Thivier has drawn his inspiration from the "*Salammbô*" of Gustave Flaubert and exhibits "Les Mercenaires au defile de la Hache." Hemmed in at the bottom of a defile, the Gauls, exhausted, dying of hunger, and watched by vultures which float above them, see appear on the summit of the mountain a man who, because of the great distance, appears of dwarf size. The beholders stretch out their arms to him, and one, to indicate their pacific intentions, lifts on the end of a pole a bull's head.

Farther along, the soldiers of Germanicus, painted by M. Lionel Royer, are collecting the poor relics of the three legions massacred in the disaster of Varus, and on all sides we see only skulls and skeletons.

"The Arena," by M. Laubadère, shows us a group of Christian captives horror-stricken and watching the approach of the lion that is to rend them.

These three pictures, which are amongst the best, show sufficiently that the leaning of our artists is not towards particularly cheerful subjects. Neither, on a smaller scale, is M. Paul Legrand any more cheerful: the cruel souvenir of our campaign in Madagascar which he shows us must turn cold those of us who have lost friend or relative in that fever-breeding country. In truth it is "La Fièvre," which on the brink of a pestilential pool outstretches one of our unfortunate soldiers, while his comrades are disappearing in the distance near the arid horizon, leaving him abandoned, like so many another. The artist might well have stopped at this, but, fearing perhaps that his conception might not fully be understood, he has attempted to personify fever itself, and so has placed near the dying man a horrid monster which has the bust of an old woman with a crocodile body, all flabby and slimy. Was this worth while? For my part, I feel that this bit of allegory detracts from the telling impression that the picture makes, and deprives it of all human sympathy.

If I describe this picture it is not because it is better than the others, but because there can be discerned in it the anti-artistic results that follow these searchings after schemes that will attract the public, and this general abandonment of simplicity.

The same reproach can be addressed to M. Pelez, who has also evidently had in view high philosophy in exhibiting his large painting styled "Humanity." The title is none too modest, while the work is a failure. This is all the more regrettable since M. Pelez is a serious artist, who has spent three years over the ungrateful picture: In the alley of a public garden, ranged in line in the same plane, we see a group of tatterdemalions, near by a group of wet-nurses, a little farther on some common-looking women looking disdainfully at a *fille galante*, who seems, nevertheless, to be behaving herself, then another poor wretch, and a fat citizen asleep in a chair. All these figures, gray and uniform in tone, are detached against a slope of greensward of a raw and disagreeable tone which attracts the eye but has no perspective. Behind this row of figures is a Christ, waxy of color, heavy and commonplace of feature, and wholly unpoetic. Up there on His cross He is doubtless pondering over the uselessness of His sacrifice. The great fault of this painting, aside from its color, is its poverty of composition. These life-size men and women, side by side in a row, look like actors at a rehearsal before they have begun to learn their parts. There is too much of convention in the treatment of the faces of the poor creatures, with their eyes uniformly encircled with red.

Till now we have found only M. Tattegrain's work worthy of admiration, and this is because our eye has been caught by these men who undertake to teach a grand philosophical art, who wish to astonish and stir us. They have not succeeded, for, though they do try their best, they do not stir our emotions. Happily we can find artists who have more modest intentions, artists who achieve the expression of art and emotion by more simple means. Is this feeling excited merely by reaction? At all events, after these huge and pretentious things one finds an exquisite charm in the decorations of MM. Marioton and Maignan. The former exhibits a fair and harmonious ceiling that shows that regard for the perspective which is peculiar to this class of work, perspective which by too many artists is never thought of. Here he shows a group of Louis XV personages chatting together, while cupids hover about them hanging Venetian lanterns to the tree-branches, — it expresses a delightful impression of youth and freshness.

The ceiling by M. Maignan for the Chamber of Commerce at St. Etienne is full of light. Here the artist has successfully grouped all the industries of the city, from the forges which light up the background to the ribbons which gayly encircle the charming female figures flickering about amid the clouds.

Another, and a very brilliant, ceiling is exhibited by M. Gervais, which seems to portray the most graceful of the arts: Dance, Music and Flowers are indicated by the charming creatures grouped in this canvas, which seems designed for a ball-room, and which it would decorate in a more agreeable way than will in our poor Hôtel de Ville the frieze of M. Henri Martin. M. Martin's manner is very peculiar: he uses a series of little dabs of all kinds of colors, which give proof of much toil, but, in my opinion, produce a very disagreeable effect. Partisans of his style affirm that at a distance all this is blended into a luminous tonality. This is true enough, but the distance must be very great, and for my part I like a decoration that can endure examination at a shorter range. What is not understandable is his singular mania for preferring tree trunks to foliage and sprinkling the greater part of his compositions with veritable broom-handles.

In the way of grand compositions, I have still to mention M. Gabriel Ferrier's "Paradis d'Amours." Here at last is a subject which makes the heart flush with the joy of living: women, flowers, kisses, smiles, sunshine! and, too, good, solid, energetic painting without other thought than to render nature: — this sort of philosophy is worth a dozen of the other kind.

M. Wencker, a painter of the nude pure and simple, has peopled the bank of a woodland pond with women, in the simplest of attire, giving themselves over to the delights of the bath. Their bodies have an admirable perfection of form and the flesh is of a beauty that is rarely equalled; yet, nevertheless, the effect is cold, and as soon as one notes this he asks himself how it is that these superbly academic figures standing below thick foliage are spared by the least fleck of shadow. There is not a trace of it, and its absence shows a disregard for sincerity, — which may be the occasion of the chill that struck me.

Before dropping the pictures, homage must be paid to the talent, always the same, of M. Henner, whose "Christ" presents the color qualities that are so dear to this artist. Nevertheless one may regret that his wilful indecision in outline is becoming a little exaggerated, to such a point in this case that one of Christ's feet seems to have three great toes. But one cannot, in spite of some defects in details, when before this painting, escape a feeling of real emotion.

Genre paintings minutely treated are rare nowadays. Meissonier was the last grand master of the style, and even he was blamed for the dryness that resulted from the perfection of his work. This microscopic method is to-day ably represented by M. Detti in a Louis XV interior wherein no detail of the furnishing is neglected. He chooses to invite us to attend a rather amusing concert: a young girl at a piano is playing the accompaniment for some cardinals who are singing most amusingly. The possible rakishness of the incident is indicated with great tact and without bad taste. It is a charming little picture, thoroughly French in spirit and brilliant in color.

Amongst the portrait-painters we must admire MM. Baschet, Axilette, Bonnat — always a trifle hard — and Fournier, whose portrait of Pasteur, ordered by the State for the doctor's own laboratory at the École Normale Supérieur, is composed most interestingly in a decorative spirit which marries it admirably to the architectural lines of its intended surroundings.

Among the many good landscapes I can only mention those of MM. Harpignies, Quignon, Thurner, Quost and Guillemet; yet there are many others who honorably uphold the French school.

A few words now about our military painters: in my opinion, M. Beauquesne is one of the best, knowing how, on a canvas of modest size, to express with exactitude the excitement and rush of these terrible hostile *mêlées*. He has no need, as M. Alvim-Correa has, to make his figures life-size, who in his "Episode of the Siege of Paris" shows us an assault endured by a group of *mobiles* who have taken shelter on the scaffolding of a house in course of erection. This painting, a sort of diorama, is the work of a man of talent, who nevertheless seemed to fear his work would escape notice unless it covered a good deal of space. Military subjects are also treated by MM. Charlton, Arus, Sergent, Le Dru.

Amongst the sculptures deserving note is the fine bas-relief by M. Puech, for the tomb of the painter Chaplin: the portrait of the artist in medallion is carved at the top of a block of unwrought stone, while before it stands a nude figure with eyes lifted to his face, while from its down-hanging hand is just slipping a palette and some roses. The abandon of desolation is admirably expressed.

M. Theunissen exhibits the circular base of a monument commemorative of the defence of St. Quentin against the Spaniards in 1557. The work is in bronze and completely encloses the base of the monument: Admiral Coligny is shown organizing the defence, artillery-men are getting their guns in place, the citizens are fighting in the breech, and the women are busy caring for the wounded. The composition of the entire monument, of which M. Heubes is the architect, is very attractive.

In addition to a tinted group, "L'Aveugle et l'Paralytique," M. Michel exhibits a superb statue of "Thought," conceived in a decorative and architectural vein that is too much neglected. Finally we must admire the fine and patriotic movement of the group by Mercié intended to commemorate the defence of Chateaudun; it is shown in plaster this year, so it will doubtless appear at a future *Salon* in finished state.

It is curious that in an architectural journal I should devote least space to the architectural exhibits. The description of architectural drawings is uninstructive and useless unless one can refer to the plans and drawings so as to understand and confirm the criticisms. So I can only once more attest the usual uniformity of architectural work that marks these annual exhibitions. Here, as always, are the same restorations by the *Prix de Rome* men, the same collections of more or less picturesque travelling sketches, the same restorations, the same competitive designs, the same *projets d'Ecole*. All this would be very dreary were it not for the occasional frames of water-colors, which happily break the monotony of these huge stretchers, which, by the way, are irreverently nicknamed by the officials of the *Salon* the "*cerfs-volants*."

MM. Boutron and Schoellkopf have done a considerable piece of work in their restoration of the Château de Montal, and M. Letrosne exhibits a Protestant church for the little city of Ault, which is cleverly studied, and proves that, even in architecture, art to be able to declare itself does not always require great dimensions and much elaboration. Finally, I must mention the drawings of one of the most important *hôtels* recently erected in Paris, that for Prince Roland Bonaparte, by M. Janty.

THE MODERNIZING OF ITALIAN CITIES.

IN the reconstruction, modern equipment and sanitation of her municipalities, no country in Europe has made greater progress than Italy during the last quarter of a century, or has proceeded upon her work in a more thorough and scientific manner. Up to 1870, when Victor Emmanuel took possession of Rome and made it the capital of United Italy, the condition of the historic peninsular towns, so far as health and the ordinary modern conveniences of living were concerned, was deplorable, but perhaps not much worse than that of many English and Scotch and some Continental cities in the same period. They were badly lighted, badly paved and badly drained; their streets were narrow and tortuous, their domestic architecture of the mediæval pattern, and about wholly destitute of any of the comfortable appliances which are common to structures of modern type; the death-rate was high, and the visitation of pestilence among them was by no means infrequent. At Naples, in 1884, the cholera swept away many thousands of the population of that extremely beautiful and — then — extremely filthy city, and there was hardly a town from end to end of the peninsula which was not periodically subject to such visitations.

All this is now changed. While they have lost none of their impressive architectural or artistic features, her municipalities have taken on a modern aspect, and are now as comfortable places to live in as are to be found in any country. They are well paved, well lighted and well drained; their transit systems are superior in cheapness and in some other respects to our own, and their methods of municipal administration, prescribed by a general statute passed in 1889, and not differing materially from those in force in France and Belgium, are equal in efficiency to any which are elsewhere known.

Each commune, whether a rural neighborhood or a city, preserves the same framework of government, having its elective council, its standing executive committee, and its syndic, or mayor, the first being chosen for five years, and one-fifth of the body renewed annually, the vacancies being filled by a general election. The executive committee is appointed for two years, one-half of its members being renewed annually, and the syndic, or mayor, is selected from this body by its own action, his official term being for three years.

The executive committee is regarded as the Government, its acts being subject to the review of the full council, but not immediately controlled by it. The mayor is an official who represents at once the General Government and the Commune, occupying in this respect the same position as the French mayors or the Belgian burgomasters. He is the executive arm of the executive committee, with a limited power of individual initiation, but an almost unrestricted one of carrying out the plans of the body from whom he derives his existence and his authority. In the largest cities, such as Rome, Naples and Milan, the executive committee consists of ten members and four substitutes; in cities of the next grade there are

eight; the number diminishing till there are only two for districts having less than three thousand people. The law imposes upon the authorities of every commune the obligation to provide each year for the cost of maintaining the administration, for keeping the registers of the state, showing births, deaths, marriages, electoral lists and army service rolls; for the maintenance of elementary schools; for public works; for illumination, police service and other suitable objects, their revenues being derived from an octroi duty at the city gates and from taxes upon houses and land, the latter being very heavy in Rome, it is said, amounting to sixty-five per cent of the rental income.

It is thus apparent that if the improvements in the cities of that country have been great, they have been made at the cost of sacrifices greater than many communities would have borne and in a corresponding degree creditable to the fortitude as well as to the enterprise of its people.

The rehabilitation of its principal cities has been complete. In Rome the street system has been recreated, its old aqueducts or means of water-supply, after lying in ruin for centuries, have been repaired and again made useful, bringing into the city a daily supply of 60,000,000 gallons. Its drainage system has been connected with the Cloaca Maxima, and other gigantic sewers of the old city, and in spite of its colossal monuments, which carry the imagination back to the time of the Cæsars, it is in many of its aspects as modern as Paris. Its building regulations are critically observed; the size, material, construction and sanitary arrangements of a new structure are prescribed, and everything relating to them is brought under strict public surveillance. The old monuments of the city are carefully preserved. The Forum, the Colosseum, the Baths of Titus, the Palaces of the Cæsars on the Palatine, the Circus Maximus, the Baths of Caracalla, the Temples of Vesta and Fortuna, and other ancient remains are all kept under the most thorough supervision by the State.

In Milan, Turin, Genoa and Florence the improvements initiated and in some cases carried to completion have been on a corresponding scale, lifting these cities out of the most sordid mediæval conditions, in which they had contentedly slumbered for centuries, and placing them on a plane with the most advanced municipalities to be found in Europe. In Milan, in particular, the transformation has been of marvellous thoroughness and completeness, extending from its centre to its circumference and embracing every improvement known in the modern construction of cities. In the Piazza del Duomo it possesses what few cities anywhere possess, an arterial centre, from which its lines of transit radiate and to which they converge, bringing the heart of the city and its farthest suburban spaces into the closest possible communication. It has, in the Via Dante, extending from the Piazza del Duomo to the borders of the new park, what is considered the most perfect model of a street above and below ground in Europe. Besides the spacious sewers beneath it, there are subways adjoining the front walls of the houses, containing the water and gas pipes, electric wires and the like; passages extending from them to the main sewers, making it easy to inspect and repair any of these instruments of service at any time without disturbing the surface of the street or introducing disorder and confusion within the houses. The street-lighting and railway systems, as well as the drainage and water-supply, are equal to those of any Continental city. And along its reconstructed thoroughfares are not only some of the finest architectural perspectives in Europe, but some of the most scientifically constructed buildings, possessing every modern device of sanitation and convenience and luxury anywhere known.

But it is in Naples that the work of demolition and reconstruction has been most radical and sweeping, and it may almost be said that that ancient city has within a decade been renewed from its foundation. The area of improvement included two hundred and seventy-one old streets, of which one hundred and forty-four were to be abolished entirely, and one hundred and twenty-seven to be retained and widened. The number of people unhoused exceeded a hundred thousand; seventeen thousand dwellings were destroyed, as well as a large number of other buildings, including sixty-two churches.

This great work is now in progress. Some of the quarters in process of renovation date back to the Græco-Roman period, and represent a continuously pestilential condition century after century, hardly to be exceeded in the annals of any municipality of the ancient or modern period. Of the Neapolitan population of something like half a million, it is computed that nearly half formerly lived in conditions of crowding and degradation almost without parallel, inviting the visitation of pestilence, which did not fail periodically to appear, but which it is hoped the new municipal and sanitary order will give less encouragement to.

Naples is the most populous Italian city, and has long enjoyed the reputation of being one of the most beautiful in the world; when its reconstruction is complete it may add to these distinctions that of being the abode of a wholesome and well-housed community, instead of a sordid and squalid nest of beggars, herding together like rats, three families in one room sometimes, according to the testimony, as it has been for a long succession of centuries. In the recent celebration of the twenty-fifth anniversary of its institution, United Italy could point to no achievement comparable in importance with the re-creation of her proud historic cities, more advanced in that period than in many preceding centuries. — *N. Y. Times.*

BOOKS — PAPERS

Mr. William H. Birkmire is the author of some very excellent works upon the subject of steel construction, in which he has made a reputation for himself of which he may justly feel proud; but it does seem a pity that a man who has done so well in one line should not have had sufficient discretion to prevent him from making such a complete failure as has resulted from his efforts to describe the planning and construction of theatres. This book[1] is without exception the poorest attempt to treat a technical subject which has come to our notice. To begin with, its illustrations are neither complete nor well selected. The descriptions are fulsome and overdone: of just the sort that the average press-agent turns out when he is writing for free passes. The book has a slight statistical value, if one knows how to use the few facts presented, but it has not the slightest artistic or comparative value; and that a man as well informed as the writer should call fireproof a Boston theatre in which the whole of the stage fittings and construction are of wood throughout, including the floors and the fly-galleries, is pretty good evidence that he either did not carefully inspect the theatre in question or that he does not know what he is talking about. Even on technical subjects the author is entirely at fault, as, for instance, when he undertakes to describe an 8-foot fan as delivering 2,000,000 feet of air per minute, equivalent to a velocity of 80,000 feet; or when he wisely remarks that "air, when once passed through the human system, is unfit for reinspiration." The artistic value of the work may be judged by the description of one theatre, the architecture of which "combines the picturesque features of the Romanesque and Renaissance styles"; or of another in which "a heroic female figure upholds forty-eight boxes"; or in regard to the Madison Square Garden, which is stated to be architecturally magnificent, because of the absence of trifling details in the ornamentation. The illustrations and the plans are of some value, but if every word of the letter-press had been entirely omitted one could have more patience with the volume.

It is sometimes difficult for the trained architect to appreciate the necessity for elementary treatises on drawing. But there must be a beginning to all things, and we suppose the beginner must be instructed even in such simple things as how to sharpen a pencil. The work[2] before us on mechanical drawing is entirely preliminary, but as such, it is well written, clear and concise, and the illustrations are to the point and such as would lead a pupil along gradually into the intricacies of ordinary machine work.

Mr. Guastavino's name is intimately associated with the introduction into this country of the system of building with concreted masses of tiles, the tradition of which, inherited from the Romans, has lingered in Spain until now and has recently taken a new development there, and his exposition of the manner in which, according to his long experience, the ancient system can best be adapted to modern needs could not fail to be interesting and valuable, and his two modest little books[3] contain an extensive fund of suggestions for the constructor and architect.

It is hardly necessary to say that a busy Spanish architect, called upon rather late in life to learn the most difficult and irregular of all civilized languages, but determined to write his books for American readers with his own hand, rather than trust his ideas to the mercies of a translator, cannot be expected to clothe his thoughts always in the most elegant English, but Mr. Guastavino has done surprisingly well with his English, and if the critical reader would change a few terms of expression, he cannot, at least, say that the meaning of the sentences is not perfectly clear.

After some observations on the history of dome-construction, and the qualities of cements and mortars, Mr. Guastavino passes to the system, known in this country under his name, in which, instead of brick or stone voussoirs on the one hand, or concrete pure and simple on the other, vaults and arches are constructed with thin tiles, laid with their flat surfaces tangent to the arch or vault, and united with a hard and strong cement. It is evident that this construction differs totally in principle from that with voussoirs. There are, practically, no joints normal to the curve of the arch; the tendency of the arch at certain places to open at the intrados or extrados, which, in the calculations for the voussoir system, is always assumed to meet with no tensile resistance, is in the new system opposed by a very powerful resistance — that of the tensile strength of the tiles themselves, and, through the same tenacious adhesion of layers of tile, the horizontal thrust, which, in the calculations for the voussoir

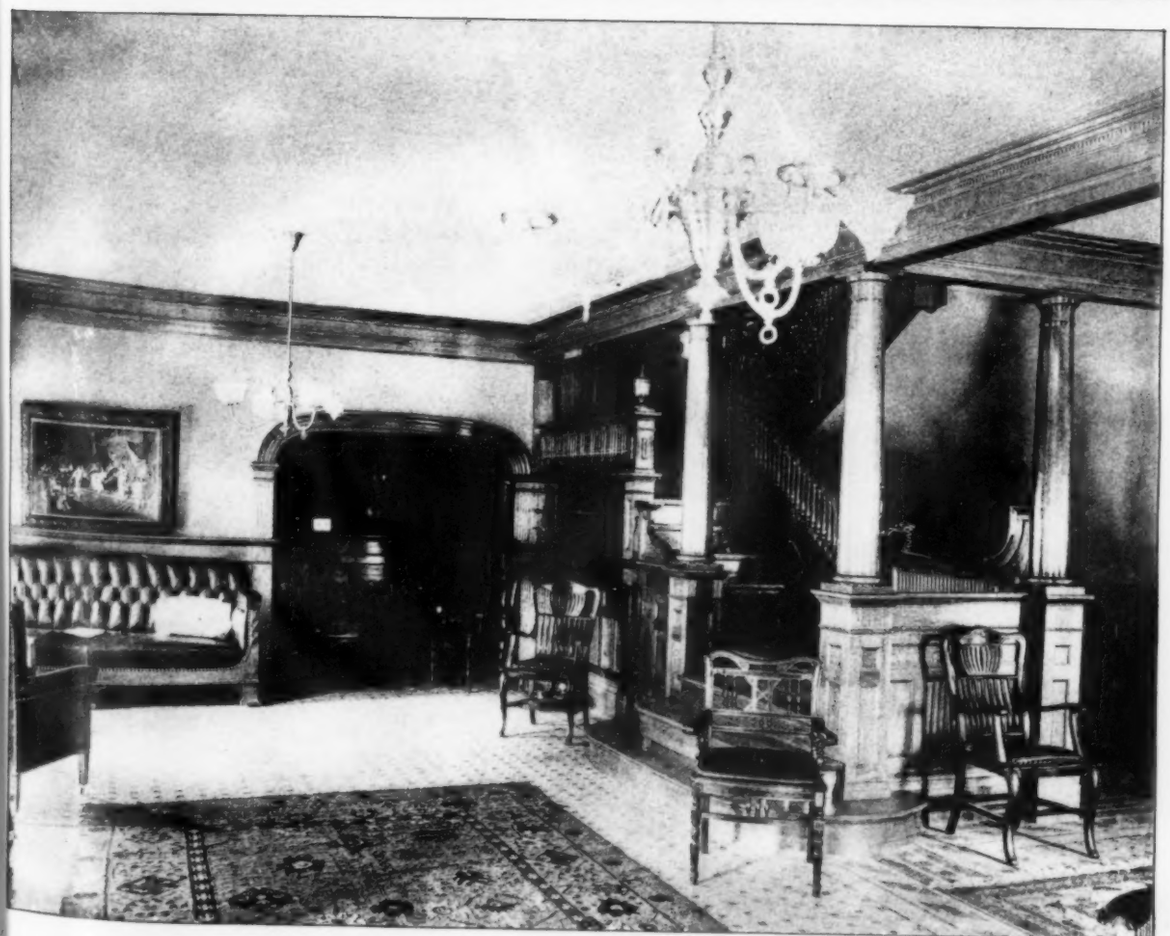
[1] "*The Planning and Construction of American Theatres.*" By William H. Birkmire. Fully illustrated. New York: John Wiley & Sons. London: Chapman & Hall, Limited. 1896. Price $3.

[2] "*Mechanical Drawing*," a Manual for Teachers and Students. By Anson K. Cross, Instructor in the Massachusetts Normal Art School, and in the School of Drawing and Painting, Museum of Fine Arts, Boston. Boston, U. S. A.: Ginn & Company, Publishers. 1895.

[3] Essay on the Theory and "*History of Cohesive Construction*," applied especially to the Timbrel Vault. Read before the Society of Arts, Massachusetts Institute of Technology, Boston, by R. Guastavino, Architect. Second Edition. "*Prologomenos* on the Function of Masonry in Modern Architectural Structures," by R. Guastavino, Architect. Part I.

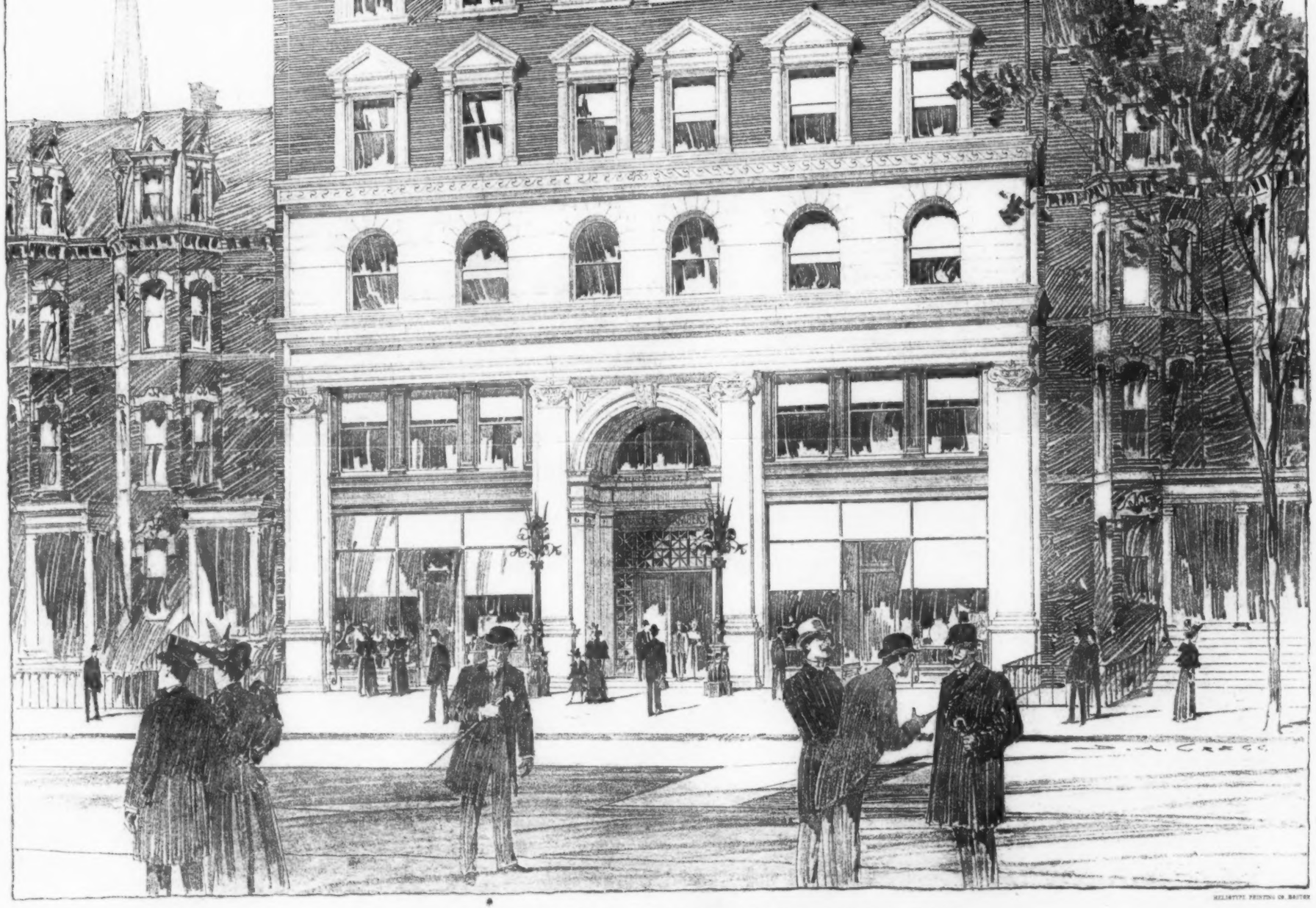
QUEQUECHAN CLUB-HOUSE, TAUNTON, MASS.

N. C. SMITH, Architect.



CALUMET CLUB-HOUSE, MANCHESTER, N. H.

W. H. BUTTERWORTH, Architect.



THE WARREN CHAMBERS, BOYLSTON STREET, BOSTON, MASS.

BALL & DABNEY, ARCHITECTS.

TRINITY CONGREGATIONAL CHURCH, CLEVELAND, O.

KNOX & ELLIOT, Architects.

arch, is assumed to be concentrated at the crown, is, in the tile arch, distributed throughout the whole upper portion. Moreover, the tile arch, through the bonding and adhesion of the tiles, which give it some of the qualities of a bent lintel, has great transverse strength, while the theoretical voussoir arch has none at all. The calculation of the strength of such an arch rests, therefore, on very different conditions from those which affect a voussoir arch, and Mr. Guastavino's discussion of these conditions, with the results arrived at by actual tests, is of the greatest interest and importance.

Although Mr. Guastavino has worked out the theory of simple arches and beams on what we might call, as distinguished from purely concrete construction, the lamellar-cohesive principle, with much care, it is curious to observe how strongly the development of the system tends toward the form of structure for which it, indeed, affords facilities and advantages such as no other system has ever offered, — the dome. As every architect knows, the essential part of a dome is the chaining. Fergusson says that "It is as difficult to build a dome that will fall as an arch that will stand"; and, although this is an exaggeration of which no true constructor would have been guilty, there is no doubt that, with a chain of sufficient strength, applied in the right place, a dome, even of voussoirs without mortar, would never fall. With a dome on the lamellar-cohesive, or Guastavino system, the chaining is always perfect. In fact, the dome is all chain, every ring of tiles, by the overlapping of the courses, and the adhesion of the mortar, forming a chain of immense strength. Domes of this sort, with a resistance to thrust far exceeding, for their weight, that of the Roman domes, half concrete, half bonded masonry, and with an elasticity peculiar to themselves, present a most interesting problem for theoretical investigation. One method of investigating the arch begins with the consideration of an elastic spring, pressed upon by the extraneous forces which act upon the arch; and the Guastavino dome might, perhaps, be best studied from the same standpoint. However that may be for the theoretical side, it is found in practice that the dome where it can be employed in the tile concrete, is extremely satisfactory, and the readers of the books will find how ingeniously the author, taught by experience, contrives to lighten his floors and other flat structures, by raising them in the centre, so that, in some portion, they shall show, in horizontal section, a continuous ring or ellipse of tiles, that is, a chain. To the skilful architect, a structural suggestion of this sort, and, especially, one which, like this, is entirely new, is a positive inspiration, not merely in the way of construction, but as affording a whole series of motives of design, plan and decoration. Already, several churches have been built, or planned, in the Eastern States, to be covered with domes of solid masonry, and it looks as if the profession had already taken up a clue which may lead them very far toward the great American architecture of the future.

THE ILLUSTRATIONS

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

HOUSE OF DR. T. A. McGRAW, DETROIT, MICH. MESSRS. ROGERS & MACFARLANE, ARCHITECTS, DETROIT, MICH.

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

THE view of this house, on Jefferson Ave., is here shown in reversed position.

CALUMET CLUB-HOUSE, MANCHESTER, N. H. MR. W. H. BUTTERFIELD, ARCHITECT, MANCHESTER, N. H.

STAIRCASE HALL OF SAME CLUB-HOUSE.

QUEQUECHAN CLUB-HOUSE, TAUNTON, MASS. MR. N. C. SMITH, ARCHITECT, NEW BEDFORD, MASS.

THE WARREN CHAMBERS, BOYLSTON ST., BOSTON, MASS. MESSRS. BALL & DABNEY, ARCHITECTS, BOSTON, MASS.

HOLMES COUNTY INFIRMARY, MILLERSBURG, OHIO. MESSRS. KNOX & ELLIOT, ARCHITECTS, CLEVELAND, O.

TRINITY CONGREGATIONAL CHURCH, CLEVELAND, O. MESSRS. KNOX & ELLIOT, ARCHITECTS, CLEVELAND, O.

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

ACCESSORIES OF LANDSCAPE ARCHITECTURE, NO. XVII: THE TERRACE AT SAN SOUCI, POTSDAM, PRUSSIA.

ACCESSORIES OF LANDSCAPE ARCHITECTURE, NO. XVIII: THE MAUSOLEUM, CHARLOTTENBERG, PRUSSIA.

LA GILDE DES MÉTIERS A BRUGES: TWO PLATES. RESTORED BY C. DE WULF, ARCHITECT, 1894.

[**Additional Illustrations in the International Edition.**]

HOTEL, NO. 9 RUE LEO DELIBES, PARIS, FRANCE. M. L. A. SERGENT, ARCHITECT.

[Copper-plate Etching.]

DETAIL OF THE SAME.

[Copper-plate Photogravure.]

THE SIR CHARLES CAMERON MEMORIAL, GLASGOW, SCOTLAND. MESSRS. CLARKE & BELL, ARCHITECTS.

THIS plate is copied from the *British Architect.*

MONUMENT TO EMILE AUGIER, PARIS, FRANCE.

THIS plate, copied from *La Construction Moderne,* shows this monument in the Place de l'Odéon. The bronze figures are the work of the sculptor Barrias.

TOMB IN THE PRAGFRIEDHOF, STUTTGART, GER. PROF. R. REINHARDT, ARCHITECT.

THIS plate is copied from *Architektonische Rundschau.*

"TRIUMPH OF THE REPUBLIC": A BAS-RELIEF. M. DALOU, ARCHITECT.

This plate, copied from the *Builder,* shows the great bas-relief referred to by our Paris correspondent in the description given by him of the Mairie of the XVth Arrondissement, Paris, in our issue for April 11.

TWO CHAPEL SCREENS, DESIGNED BY M. JEAN HULOT AND M. PAUL GUADET.

THESE plates, copied from *L'Architecture,* present two of the designs submitted in the Concours Godebœuf, to both of which were awarded first medals.

THE GREAT HALL, NEW CRAIG HOUSE, MORNINGSIDE, N. B.

HOTEL CECIL, VICTORIA EMBANKMENT, LONDON, ENG. MESSRS. PERRY & REED, ARCHITECTS.

WHEN the Thames was improved, and the swampy shores converted into gardens and building-sites, or when Northumberland Avenue was opened, it was not anticipated that the new region was to be utilized for hotels which would surpass those found elsewhere in London. The Hotel Cecil, which was opened recently, is the latest addition to the number, and in some respects the most important. Photography cannot flatter, and from the plate we publish it will be seen that the new building has more architectural character than some of its rivals. This is the more creditable to the architects, for the building when designed was intended for another purpose. But it is on the character of the interior that the management base their claims to success rather than on its outer appearance. All that can be done by fine marbles, tapestry, silken hangings, painted and picture decoration to make halls, rooms and corridors attractive is exemplified in the Hotel Cecil. The associations connected with the name and the district are suggested by portraits of Elizabethan worthies. The hotel can accommodate a thousand guests, and they must be extraordinary travellers if they are not satisfied with the efforts which are made to gratify their sight.

COMMUNICATIONS

[*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.*]

A CORRECTION: TRINITY CHURCH DOORS.

NEW YORK, May 25, 1896.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,— In your issue of May 23d you allude to portrait busts which are made up on the lower doors of Trinity Church,

New York, and point out that one of them is of R. M. Upjohn, the son of the architect of the building. This is incorrect: the Upjohn portrait which is on the lower door is that of my son Charles, who was a student of sculpture in Mr. Bitter's studio while Mr. Bitter was making the doors. I was the architect of the Onderdonk Memorial in the vestry room of Trinity Church, New York.

Yours truly, R. M. Upjohn.

EXHIBITIONS

Boston, Mass. — *Paintings recently purchased; the Martin Brimmer and R. Hall McCormick Pictures; Japanese Paintings; New Accessions to the Print Department:* at the Museum of Fine Arts.

Lithographs by Whistler and others, also, Etchings by Robertson K. Mygatt: at James M. Hart's Gallery, 220 Boylston St.

Brooklyn, N. Y. — *Pictures by Swedish Artists:* at the Pratt Institute, May 29 to June 13.

Chicago, Ill. — *Eighth Annual Exhibition of American Water-colors:* at the Art Institute, April 16 to June 7.

Cincinnati, O. — *Annual Spring Exhibition:* at the Art Museum, May 16 to June 30.

New York, N. Y. — *Paintings recently acquired, and Retrospective Loan Collection of American Paintings:* at the Metropolitan Museum of Art.

Annual Exhibition of the Sketch-Club of New York: at 3 East Fourteenth St., June 8 to 13.

NOTES AND CLIPPINGS

Elwes, the Miser. — Elwes, the miser, was a great builder. It is recorded that he built Portland Place, and Portman Square, and a great many other solid, substantial houses in that quarter, the rents of which greatly swelled his otherwise enormous income; and he himself, when a house of his was empty, would live in it as caretaker, his only companion being an infirm old woman. Like Sir Pitt Crawley, he would fetch the beer, answer inquiries at the door, and if anybody would give him a shilling would pocket it with delight. In the country he would go out gleaning from his tenants' corn, and the farmers would scatter a little about just to please the old man. — *Churchman.*

Lord Grimthorpe Redivivus. — Methods of church restoration are not always well ordered. Lord Grimthorpe, as the story is told by a builder, offered to restore the old tower of St. Michael's at St. Albans. This is the ancient church containing the tomb of Lord Bacon. The vestry held a meeting to consider the proposals, and the chairman, by his inquiries, brought out the fact that the old tower would be removed and a new one built after His Lordship's designs. Lord Grimthorpe, annoyed by the chairman's inquisitiveness, announced sharply that if the vestry did not choose to accept his terms it would get no money from him. The vestry then meekly accepted his offer unconditionally, so the ancient church will have a brand new tower of what His Lordship considers the proper style of architecture. — *N. Y. Tribune.*

A Just and Paternal Government. — The signing of a bill recently by the President for the relief of A. T. Hensley, of Texas, recalls a man of wonderful persistence and Job-like patience. In 1863 this claimant had the good fortune, as he supposed, to get an order to supply pine flooring and rough timber to the Army. He fulfilled his contract, and ever since then, for more than thirty years, he has been endeavoring to collect his bill, working to secure the simultaneous passage by the two Houses of Congress and the signature of the President. Nine weeks ago, learning that he was to be successful, he went to Washington. One would naturally suppose that the claim which induced such a fight was a large one. But when Mr. Hensley signs his name at the Treasury Department for the money, in the battle for which he has grown gray he will receive $432! — *N. Y. Tribune.*

A Fox-hunt Fence. — When on Alleghany Street, Roxbury, recently, I was rooted to the spot as I chanced to turn my head and saw seven hunting dogs racing up over a rise of land after one poor fox. In a moment I saw that the race begun was never done. Years ago when Thomas Thacher built his great Colonial house on Alleghany Street it was one of the grandest houses in town. At that time he was president of one of the railroads and was connected with the Fulton Iron Foundry in South Boston. Mr. Thacher thought it would be a fine idea to have a continual fox-hunt on his grounds and he conceived the idea of having the fence running up over the terrace in front of the conservatory represent the chase. One of the men at the foundry followed out his suggestion, and the result was the most unique fence in the world. The fence is of iron painted in natural colors and consists of low running vines and branches which just brush the backs of seven hunters racing for dear life up the hill. The dogs are about five feet apart. The last dog is still a little distance from the fox, which has looked back for a moment to see how near his enemies are. — *Boston Advertiser.*

A Meteorite that paid a Mortgage. — Another illustration of uses to which meteorites may be put before their real character is known is afforded by those of Kiowa County, Kansas. They fell on a prairie where rocks were scarce and valuable, and the farmers of the vicinity found meteorites convenient for holding down haystacks, stable roofs or covers to rain-barrels. For such purposes they might have been used for a long time had not the wife of one of the farmers become convinced that there was something unusual about them, and called in an expert to examine them. He at once recognized their nature, and the enterprising woman finally sold hers for enough to pay off a heavy mortgage upon the farm. — *St. Nicholas.*

Largest Cask in the World. — At Fresno, Cal., on the St. George vineyard, has lately been erected a gigantic wine cask, or tun, beside which the famed Great Tun of Heidelberg sinks into insignificance. It is the biggest in the world For almost 150 years the Great Tun has been celebrated far and wide for its immense size, and nothing on the globe could compare with it. The Great Tun holds 49,000 German gallons, or 42,000 American gallons, while the St. George Tun holds 79,000 gallons, or almost twice as much as the tun which has for 150 years been figuring in history. It took two carloads of steel to hoop the gigantic cask, and there is enough lumber in it to construct an elegant mansion. The lumber is all redwood, obtained from the forests of Humboldt County. Not one stick in ten from which the material was selected would answer. Absolute freedom from any kind of flaws was required. When the redwood was selected it took almost two years for it to dry and undergo the preparation for the cask. About two complete railroad trains of this California redwood is used in the Fresno Great Tun. The tun towers to a height of thirty feet, and it is twenty-six feet wide. It can contain thirty carloads of wine. — *Boston Transcript.*

An Indicator of foul Air. — In the Zurich Industrial Exposition an air-tester is exhibited, which shows whether and in what degree the air in a workshop is contaminated. The apparatus consists of an air-tight closed glass vessel filled with a red fluid. Through a glass tube that dips into the liquid and is bent at the top a drop falls every 100 seconds on a cord that hangs beneath and that is somewhat stretched by a weight. The fluid from which the drop comes has the property of changing its red color to white by the action of carbonic acid. The more carbonic acid there is in the air the quicker this change in color takes place. If the air is very foul the drop becomes white at the upper end of the cord, while the change of color corresponding to a slight proportion of carbonic acid does not take place till the drop has run farther along the cord. The exact condition of the air can be ascertained by observing a scale that is placed alongside the cord and that is divided into convenient parts, bearing the designations, "extremely bad," "very bad," "passable," "pure." This is surely a very useful device, and should be found in every factory, every workshop, and every place where persons are crowded together. — *Gaea, Leipsic.*

Saving the Lagoon of Venice. — A great engineering work of immense importance to the City of Venice has just been completed. Fifty-eight years ago, in order to prevent the damage caused by the occasional overflowing of the River Brenta, the Austrian Government, on the recommendation of the celebrated engineer Paleocapa, carried out certain works by which the mouths of that river were carried into the Chioggia Lagoon, some distance south of their original outlet. Since then the alluvium brought down by the river has threatened to convert a portion of Chioggia Lagoon into a fever-breeding swamp, and also to cause serious damage to the whole Venice Lagoon by silting. It was accordingly decided to construct a new channel for the Brenta, sixteen kilometers in length, giving the river a direct outlet to the sea near Brondolo, still farther south. The scheme, which was estimated to cost 8,000,000 lire, and was begun in 1884, has now been brought to a successful conclusion. The new channel, by means of subsidiary canals, also provides a fresh outlet for the Bacchiglione and other rivers formerly flowing into the Venice Lagoon. — *London Standard.*

A Reasonable Appeal to Millionaires. — At a recent meeting of Walworth workingmen the following address to the millionaires of England was carried unanimously: "We, workingmen of Walworth, beg to address the millionaires of England. We have heard of the sudden death of Baron Hirsch. We have been reminded of his immense wealth. We have heard of the way in which he placed millions at the service of his poor and suffering fellowmen, and especially of his compatriots, the Jews. We beg to appeal to you as Englishmen whether you also will not use your millions for the elevation of your poor fellow-Englishmen. Many of you have acquired or increased your wealth in the metropolis of the world. We want to ask you whether you would not use your great resources in transforming and beautifying the poorest districts of London. We wish, for example, to remind you that this parish of St. Mary's, Newington, contains on an area of less than one square mile a population of more than 115,000. On this small patch of English soil are crowded together as many people as would form the population of many a great provincial town. And this densely crowded district is wholly without park or public space of any kind, except a small disused graveyard, we appeal to you whether the purchase of the requisite land and the gift of a public park to this poverty-stricken neighborhood would not be a fitting object for your public spirit on the look-out (as we wish it to be) for means of enriching your fellow-countrymen. The suddenness of Baron Hirsch's end reminds you that your life, like his, is in the hands of a power which may as unexpectedly recall it in your case. Before that dread moment arrives we beg of you to make such use of your wealth as shall then afford you a solid satisfaction." — *London Standard.*

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