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SUMMARY:—

The International Edition in its Complete Form.—The Present Sources of Foreign Supplies.—American Architectural Design at a Disadvantage in Juxtaposition with Foreign Work.—An Edict of the Master-Painters' Association.—The Rotch Scholarship Examinations.—The U. S. Light-House Board and the "Lowest Bidder."—Effect of the Increase of Duties on Builders.—Tile Roofs. 1

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THIS week, for the first time, the International Edition appears in its complete form, and we are now willing to consider the charges, complaints or criticisms of any subscribers to this edition who feel that we are not properly fulfilling the engagements made with them in our circular of announcement. Even during the hand-to-mouth period which has just closed, the mails have brought us practically nothing but expressions of unqualified approval of our conduct of the undertaking; and as we have usually succeeded in doing more and better than we promised, we have no great fear that many complaints will be entered against us during the balance of the year. Of one change we are now forced to make no one will complain. The amount of text we have added to all the editions and the increase of illustrations in the "International" is so great that the year's issue must be divided into four volumes. The "International" will be bound in four volumes; while the "Imperial," as hitherto, and now the "Regular" also will be bound in semi-annual volumes to the great benefit of those who have to handle them.

AS soon as we suggested to our subscribers the possibility of publishing this edition, we began negotiating for the procurement of independent supplies, but we soon found that so much time would be necessary to complete arrangements, while the doubtfulness of obtaining in this way satisfactory material was so great, that we were forced to change our tactics, as it was necessary to have the edition ready for the first of the year. The arrangements we at length made, have resulted far more satisfactorily than we hoped, particularly in the case of the London *Architect*, as this journal was already widely known to and easily procurable by American architects. The *Bauindustrie Zeitung*, a comparatively new journal, and one having no circulation in America, gave us no cause for doubt; and the same may be said of the *Moniteur des Architectes* which, although having a larger circulation than any other French architectural journal, has had practically no subscribers in this country beyond a few of the most important libraries. We feel that however our subscribers may look on the other foreign contingents, they should felicitate themselves on the arrangement made with the *Moniteur*, since the illustrations of that journal are copper-plated engravings, etchings and real photogravures of unquestionable quality and architectural interest. The illustrations in this edition are therefore produced through the agency of almost every process of reproduction known to the world

of printers and bookmakers while as for the subject matter our four sources of supply cover representatively, if not completely, the fields of contemporary and historical work of the French, German, English and—shall we say—American Schools of Architecture. As to all the foreign illustrations it should be observed that before reaching us they have already been accepted for publication by the editors of architectural journals of the first rank and the ripe judgment and experience of these gentlemen give guaranty that the illustrations they furnish are surely no less valuable than any we might obtain from independent sources.

IN two points, however, the International Edition is not what it should be. Take up a copy of it and the inferiority to the foreign contributions of the American subjects "jumps at the eyes," as the French put it. But we assert that there is no need for, no excuse for, this saltatory tendency on the part of the specimens of American architectural design included in this edition. Whose fault is it? Not wholly ours, though we are, no doubt, to blame for not excluding some of the work, and in place of it sending out a blank page with the inscription "American architects cannot this week produce work to rank with that of their European brothers." Whose fault is it, then? Mainly the fault of the American subscribers to this edition, who selfishly prefer to seclude their designs instead of through their publication doing their fair share toward the general advancement of the art of building in this country. There is not, we believe, a single American architect of first-rate ability who does not subscribe to this edition; and as there are certainly enough of them to supply good and interesting American material for this edition, it is the fault of these indifferentists if American work fails to hold its own when placed side by side with foreign work within the same pair of covers. In another particular we are likely not to be able to carry out our provisional promise: so far as information on the point has been furnished us, there has been this year but one limited competition in the country. We at once endeavored to procure these designs, and, of course, encountered the usual formula "I don't want to, but if the others will I am also willing." Having got as far as this, the next move on our part was followed by the usual withdrawal of even this conditional assent. We have wearied flesh and pen-point for so many years in working round and round this circle that we have grown callous and indifferent, and have come to feel that if architects are, as they seem, entirely satisfied with the illustrations we place before them, why should we feel that we are not doing our whole duty toward them?

THE Master Painters' and Decorators' Association has issued some orders to architects, which they will, we suppose, hasten to obey, with the humility befitting members of the most long-suffering of professions. Realizing that architects do not have enough to do, and that time, during their office hours, hangs heavy on their hands, the judicious painters and decorators have ordained that they shall be "earnestly and respectfully" requested "in future to specify the sizes of glass." What good it would do the architect or his employer to specify the sizes of glass in his buildings, instead of letting those who aspire to the privilege of furnishing it measure the sizes on the drawings for themselves, we are not informed, but that the would-be contractors for the glazing might find it convenient to have the architect do a part of their work for them we can easily understand. The only wonder is that they do not ask him to do the whole. It would be still more convenient to have him figure up the number of boxes of each size, and trot around among the dealers to get prices for the contractors to use; and if he could be compelled, as the contractors actually undertook to demand in New York some years ago, to guaranty the correctness of his estimates, there would be hardly anything more to ask of him. Unfortunately for the prospect of realizing this bright dream, our architects are quite aware that their professional duty does not include the furnishing to contractors of any quantities or sizes whatever, other than what can be gathered from the drawings by the contractors themselves; that, if contractors wish for them, they can be accommodated in the proper way, by paying a quantity surveyor a reasonable fee, which is about half the

architect's commission, to measure and tabulate them from the drawings and specifications; but that even professional quantity surveyors never guaranty their quantities, and have been legally held not to be responsible for the consequences of even very serious mistakes in them; while experience in England has shown that the furnishing of quantities to contractors by a surveyor does not lead to any more accurate estimating than with us, where this is rarely done. Moreover, as it is said to be customary with English quantity surveyors to add ten per cent for contingencies to their measured quantities, so as to protect themselves against any possible claims for deficient measurement, the owner, if the surveyor's quantities were made the basis of the tenders, would pay at least one-tenth more for his building than it was worth; and the more business-like English contractors are said, in consequence, to pay no attention to the surveyor's quantities, although, if they are awarded the contract, they have to pay for them; but to base their tenders already on their own measurements, just as is done here.

WE would like to call the attention of young architects and assistants to the notice of the examinations for the Rotch Scholarship, which appears in another column. The competition for this great prize has never yet been so active as it should be; and, although men of first-class ability and attainment have been sent out, the contest has usually been between half-a-dozen, instead of half a hundred, as it should be. Probably, as the history of the Scholarship grows longer, and the advantage enjoyed by the winners in their subsequent career becomes more generally known, the competitors will be more numerous, but, for the present, the aspirant for two years of study abroad, under the best possible auspices, has, if he is sure of having mastered the subjects on which he is examined, comparatively small odds against him in the main contest, while, of course, the effort itself is a great gain to all who make it.

THE Chairman of the United States Light-house Board has applied to the Secretary of the Treasury, asking that, in the bill authorizing the construction of the Hatteras Light-house, the provision of the general law in regard to the erection of such buildings, which provides that "no contract for the erection of any light-house shall be made except with the lowest bidder therefor," may be suspended, so that the contract for the new light-house, which is one of great importance, may be awarded, in the discretion of the Board, to persons other than the lowest bidders. The reasons which the late Admiral Rowan gave for this request will be interesting to architects. "In repeated cases," he says, "contractors have taken jobs at prices less than the Board has estimated that they could be done for, and while they have been held to their contracts by constant and skilled supervision, the Board has been fully satisfied that every effort was made by the contractors to slight the work that their loss might be lighter, and this, of course, has been detrimental to the character of the work." It will be observed that there is a singular difference in theory between the work of a light-house Board and that of an architect. While the latter is always presumed, by lawyers and jurymen, to be able by occasional visits, to secure the most perfect and skilful work from cheap and ignorant contractors, and is held pecuniarily responsible if he fails to do so, a light-house Board find it a matter of course that, even with "skilled and constant supervision," such as clerks-of-works, not architects, are paid to give, an inferior contractor cannot be made to do good work. The Admiral illustrated his point by saying that "in cases of building certain steamers, the lowest bidder was known to be an inferior workman, but the Board was forced to give the contract to him, and, though his work was supervised with more than usual care, the steamers were just good enough so that the Board could not refuse to accept them, and yet so poor that they have been quite frequently under repair." We need hardly say that lawyers, whose ideal architect, when they wish to extort money from one of the profession, is a being endowed with the eyes of Argus and the wisdom of Solomon, would hold up their hands in horror at the thought that work accepted by an architect should afterwards need repair, and, with the hearty support of judge and jury, would infallibly make the architect pay for such repairs; yet in the public service, with all the care that can be given, and with special and skilled supervision, the work done by cheap contractors is,

as Admiral Rowan said, "of course" cheap and bad, and the Government, not the inspecting officer, pays for the repairs.

A GOOD deal of opposition has been shown by builders, and others interested in the improvement of real-estate, to the proposed increase of the duties on lime, cement, plaster-of-Paris, window-glass, brick, tiles, zinc and lead. We have no intention of entering into any discussion as to the merits of our protective system, in general, but it is obvious enough that an artificial increase in the cost of building, which means higher rents for every one, and the throwing out of employment of great numbers of mechanics, by the postponement or abandonment of building projects, ought not to be imposed upon the country without serious consideration. As we have often pointed out, the high price placed upon structural iron by the producers' combination is the principal cause of the inflammable construction of our great warehouses. American architects know, better than any others in the world, how to make fire-resisting buildings, but the advantage to owners, in rent, and saving in insurance, of erecting such buildings, is not sufficient to pay the interest on their excessive cost, and a very large part of the enormous annual fire-loss of the country is directly chargeable to the policy which gives nine rolling-mills a comfortable monopoly of the market for the principal fire-resisting-material. With the additional tax on the other materials mentioned in the list, the cost of the simplest houses would be considerably increased, and, as we think, all building would be checked in much the same way that fireproof building is now restrained. It ought not to be forgotten that the artificial heightening of the cost of buildings is a very different matter from the imposition of an extra duty on silk or woollen goods. These are rapidly worn out, and no one suffers serious loss as the price changes; but houses are built, not for a few months, but for generations, and an extra ten per cent added to the investment at the outset, through an artificial and perhaps temporary enhancement of the cost of materials, will count up, at compound interest, before the house has fallen to decay, to a sum which would pay the entire original cost of the building many times over. For this reason, prudent men take care not to build in times of inflated currency, or under circumstances which produce, as they think, a temporary increase in the cost of construction. If they have money to invest, they prefer to buy property not artificially magnified in value, and, in consequence, not liable to violent shrinkage when the circumstances change.

THE *Deutscher Dachdecker* gives some information about roof-tiles which, as these materials are coming every day into more common use here, is well worth remembering. The foreign tiles are rather soft and porous, particularly those of the bright-red color favored abroad, and many attempts have been made to make them less absorbent of water, and, in consequence, less liable to injury from frost. In certain places, as, for example, in Alsace, roof-tiles are often glazed in different colors, and give a bright and picturesque effect when put on with taste; but it seems that the glazed tiles are much more liable to injury from frost than the ordinary unglazed ones. If the coat of glazing were perfectly impervious, they would not absorb water; but, in practice, the enamelled surface is interrupted by air-bubbles, or by places where a chip has scaled off, and rain-water penetrating at these spots cannot evaporate again, but works beneath the glazing, and, if it should freeze, throws off a portion of the surface, thus opening the way for more damage. In manufacturing towns the tiled roofs are often daubed with coal-tar, but this application is unattractive in appearance, and is better suited for making good temporarily tiles which are badly cracked, or otherwise defective. The best application of all, according to the *Dachdecker*, is molasses, thinned with water, and put on either with a brush or a syringe. Although this is soon washed away by rain, it serves, while it lasts, to attract dust and spores of moss and lichens, thus favoring the formation of that vegetable patina which gives not only picturesque beauty, but dryness and impervious quality, to ancient tiled roofs. If the first application should fail, either through the molasses being too much diluted with water, or from being washed off by rain before it can produce its effect, a second or third may be made. If the roof is provided with gutters and conductors, it is well to throw the molasses on liberally with a hand-pump or syringe, and let pails be set at the foot of the conductors, so that the surplus may be caught and used again.

PRIVATE ARCHITECTURE.¹

WE use the term "private architecture" to designate the home, and, by extension, all that is connected with the dwelling of man, whether as an individual or a community.

It may, then, be said that private architecture is as old as the remotest civilization, and that, in all times as in all countries, it has been most largely the object of man's solicitude. We might also infer that it must naturally have served as the prototype of religious architecture, the temple of the god of the early ages being no other than the abode of man enlarged and adorned.

In fact, the first use made of the crude materials within man's reach was to build a shelter for himself. Then, by degrees, he shaped these materials in such fashion as not only to improve his shelter and the arrangement of it, but also to gratify his tastes and brighten his family dwelling. When he reared a temple to his god and a palace for his chief, he did nothing more than develop the principles of construction and decoration which he had put in practice in building his own habitation. Private architecture is, therefore, the starting-point of all architecture, and, in those countries where art at certain epochs was purely national and indigenous, we find in the public edifices enlarged reproductions of private architectural types.

We can, then, still discover in the monuments of ancient times a sure expression of the last civilizations, just as, for times nearer our own, private architecture reveals to us the inner life of the generations that preceded us.

When, however, instead of drawing its inspirations directly from the *milieu* which ought to fertilize it, monumental art takes its life only from old forms, whose *raison d'être* no longer exists, and whose meaning is distorted, it is to private architecture that we must turn to learn both the common yearnings of a nation and the peculiar genius of its artists and builders.

In fact, the works of private architecture reveal to us the inner life of peoples far better than do public edifices. The "monuments" of a nation, which are sometimes long in process of construction, and are the creations of several successive generations, are often only the expression of certain vague and not immediate needs. They satisfy wants of a general nature, or rather, they respond to those lofty and vague aspirations of the human soul, which, being as old as the world, are not a precise characteristic of any particular period. This is why we are as ready to admit the worship of divinity and prayer-

ful communings into an edifice made after ancient designs as into one affecting the dispositions of the mediæval church.

It may be assumed that, though such a monument belongs to all times, the *raison d'être* of a private dwelling is peculiar to a fixed and limited period.

The habitation, in truth, shapes itself, like a shell, to the individual. It reveals to the historian and to the philosopher the secrets of the follies or virtues of a people, for, in the privacy of the homes, national tastes, inclinations and instincts are gratified without dissembling.

Public monuments are a nation's luxury; it feels its glory is at stake in their erection, and sometimes they are reared in pride for the eyes of posterity. They are, therefore, often a far less sincere reflection of a past age than are the modest constructions appropriated to the homely life of a corresponding epoch.

In their dimensions and grace of form, in the superiority and scope of the thought which presides at their conception, monumental structures may be considered as the poetry of the art of building; but private architecture is its prose—living prose—prose of a powerful realism, which daily delineates the features of individuals and passing generations.

It is, therefore, with as much respect as interest that we study the smallest fragments of the Asiatic or African, Greek or Etruscan civilizations. It is for this reason that we toil tirelessly amid the buried ruins of Herculaneum and Pompeii, which have told us more of the art and manners of their time than have all the grandiose remains of the monuments of Imperial Rome.

The place which private architecture has held in the past is most important. Its masterly productions are to be found everywhere: in the *châteaux*, in manors, and in the old habitations of the Middle Ages, as well as in the opulent dwellings of the seventeenth and eighteenth centuries; in France as in Italy and Spain, in Flanders as in Germany and England. These gems, great and small, form the endless chain which, adown the ages, links together certain immortal masterpieces which stand forth from point to point as resplendent symbols of an entire century, embodying its aspirations and enshrining its ideal.

But let the chain be broken, let its links be dispersed, will not the mighty monumental masterpieces thus isolated be often inexplicable? Will not they appear as strange relics of an unknown age, débris of mysterious forms, mute and lifeless?

To private architecture, then, is entrusted the important mission of keeping the passion of art, as a sacred fire, forever inseparable from utilitarian obligations. But for this passion, but for a sort of exaltation toward a sought ideal, maintained even in responding to the homeliest needs, the architects who designed and erected the ancient dwellings, whose smallest remnants we now preserve with jealous care, would have been nothing more than builders. Instead of their charming creations, we should find only commonplace structures—mere shelters, simply answering the demands of necessity. It is private architecture whose multifold and incessant productions have kept alive the traditions of art and of the proper adaptation of local resources to good construction. On its works are trained the great majority of young architects, draughtsmen, skilled workmen and master-builders. Here proficiency is attained, here new designs are tried, and here experiments are made with new processes, and with the building materials which science and industry are daily multiplying. These experiments, repeatedly and judiciously tried, determine whether such processes and materials can be admitted to public constructions.

On the whole, then, this department of architecture furnishes a sort of experimental school, which is always open, wherein worthy traditions are preserved, where brains and hands are trained, and in which the boldness and spirit of initiative often render signal service to the building art.

We cannot here develop the special characteristics of private architecture among different peoples at different epochs of its history. The civilizations of ancient times have left us few examples of their home architecture, but judging of it from the merit of those monumental structures which have come down to us, we may assume the rationality and appropriateness of its various features. Without, however, going back so far, it will suffice to recall the fact that, during the Middle Ages, architecture in France proceeded, in public constructions as in private, on fixed and logical principles, which perfectly harmonized forms and decoration with the demands of utility.

¹ From the French of Paul Sédille in Planat's "Encyclopédie de l'Architecture et de la Construction."

During the Renaissance, forms and decoration assumed the ascendancy over the expression of the needful, and art, freeing itself from the constraints of reason, became more capricious and more seductive. Later it took on a character of solemnity, yielding thus to the dominant taste for pomp; nevertheless, in its utilitarian dispositions, the manners of the period are found depicted. The architecture of the mansions and small dwellings of the days of Louis XV is stamped with characteristics at the same time trivial and rich. When France had been surfeited with the indulgence of her architects' fancy, an effort was made to gain distinction with delicacy of forms; as a result we have the constructions of the time of Louis XVI, which are so highly esteemed at present. In fact, their externals and their interior decoration appear quite in harmony with the elegant tastes of modern society. But they are still lacking in certain qualities of comfort which seem essential to us to-day.

The Directory and the Empire present an epoch of cold and narrow architecture, though not devoid of grandeur. The interiors yet guarded something of the refinement of the preceding period. But it was not long before the construction of dwellings, becoming a prey to speculation, neglected by artists and unheeded by the public, entered upon a period of decadence, which lasted down to the time of the great renovation of cities undertaken during the Second Empire.

Since then, it has assumed more and more interest and importance. After having been made for some time too subservient to the often fickle tastes of the public, private architecture is now taking on a well defined character, which will be in a happy fashion, a distinctive mark of the present epoch. By a complete revision of the plans of the modern house, by the logic of the general forms resulting from the necessities of the plan, by the accentuation of the means of construction employed, by the search after the picturesque, the consideration for detail, and the daily developing taste for coloring, private architecture is taking an important place in contemporary art.

Though, during long years, speculators have been putting up huge structures with monotonous, yet pretentiously rich, suites of apartments, the number of *hôtels* and small private houses has been recently increasing: these latter are being most advantageously substituted for the sumptuously commonplace flats piled one above another. As they can be infinitely varied to suit individual tastes and needs, the new art finds in them an especial field for development. To be sure, we see displayed in them a great deal of imagination and fancy borrowed from the art of the past, and even from that of foreign and distant lands. The architecture of the Middle Ages and of the Renaissance, and the rich or elegant dwellings of the last centuries have been largely drawn upon for the often ill-assorted elements of the city or country houses, the seaside or watering-place villas that abound in all frequented parts of France. But in this mass of different constructions, an essentially new character is declaring itself; this is based on logical research and on the emphasizing of truth in construction. The most inconsequential of the claims of contemporary architecture will certainly not be the claim founded upon this return to the healthy traditions of a construction which is not only logical and rational in its principle, but which is accentuated in the exterior mass and details, contributing, by the *mise en relief* of the skeleton, and, in some sort, of even the integuments of the edifice, to the expression of its useful functions and its moral character.

It is likewise in a measure due to these principles of sincerity that there is a gradual return to the use of exterior coloring for dwellings, a matter that has been much neglected since the end of the sixteenth century. Yet, up to that time, color had been from earliest ages universally the logical and requisite ornament of edifices.

Now that study and travel have revealed the ancient monuments set off by colors, as well as the mediæval structures and those of the Orient, we are gradually accustoming our eyes to the charms of the hues of enamelled clays or mosaics; they glow with a permanent brilliancy on the façades of our modern dwellings, and will ere long be essential to their adornment and gayety.

The fact must, then, be recognized that to our contemporary private architecture will also come the honor of that renaissance of monumental polychromy, the indestructible materials of which, such as bricks, marbles and enamels, will contribute to the perpetuation in a logical and sincere construction of the

efforts of contemporary private architecture toward the realization of the beautiful in the useful and the true.

PAUL SÉDILLE.

ITALIAN TOWERS.—I.



WHEN the traveller southward emerges from the portal of the St. Gothard tunnel, he finds himself in a country as different from that left upon the other side, as does the American who disembarks from a Liner at Southampton or Liverpool. The mountains are as wild, the snow may

be as near—or as deep, as the season may be—the guards about the station wear the same uniform, and there is no intolerable nuisance of custom-house and change of carriages; but the people, the houses and the churches, are all absolutely different. The traveller is still in Switzerland; he might almost as well be in Tuscany or Umbria for completeness of change.

And in no respect is the change more marked than in the change from spire to bell-tower which at once takes place.

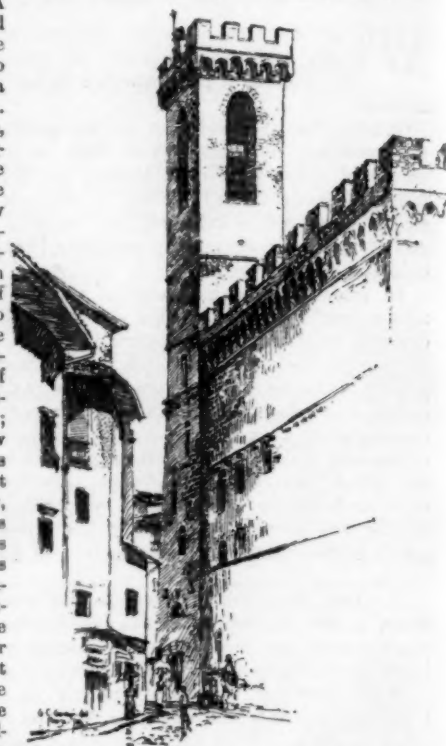
The last little church-spire which he sees before he is swallowed up at Göschenen by the mountain, is of as distinct a type as one of the fair-haired Goths who sacked Rome. While upon the other side, at Bellinzona, perhaps, he will notice a tower which shows quite as plainly the influence of that same eternal city which nearly two thousand years of "Goth and Vandalism" have not destroyed.

It would be rash, perhaps, to say that the bell-tower is the most characteristic feature of Italy, there is so much in Italy that is absolutely Italian, so much that could by no possibility belong to any other country.

A half-naked, ragged Italian asleep on the steps of the Campo Santo at Pisa, is a picturesque object. He is respectable, interesting and dignified—provided he doesn't beg. The same Italian in New York would be simply dirty and disagreeable—but in Italy he is one of the essentials. So are the olives, the donkeys, the stucco-houses, with walls of glaring white or Renaissance frescoes; the steep, narrow and twisting streets with their broad flat paving-stones below, and retaining arches and projecting eaves above. Perhaps these things in themselves are as characteristic as the churches and their bell-towers, and, at any rate, it is quite possible that the church and the bell-tower would suffer as much if torn from their surroundings, as does the Italian slumbering on his stone step in the sun at Pisa.

Fergusson, in his history of art and architecture, compares the Italian campanile with the tower of the North and finds much less merit in the former. There is but little sense of symmetry in the Italian tower, he says, and he objects that they are all top-heavy, and also to the fashion of horizontal divisions as breaking the unity of the tower.

If a tower must be ill-proportioned and "top-heavy" because it is no smaller at the top than at the bottom, then there is no doubt that the great majority of Italian towers are to be condemned at once, for rarely, if ever, does an Italian campanile taper. If belt-courses, at varied distances, sometimes marking the stories, sometimes purely for effect, are objectionable, then again most of the towers are bad. But these points must be points of purely personal taste. To some, Giotto's tower is beautiful beyond compare. To



others it is the essence of foolishness set down—or rather up—in black-and-white. And each critic will prove to you beyond all doubt, that by all the laws of art and architecture he is right. To us the Italian campanile was ever more pleasing than the northern tower, and we looked often at it and sketched it whenever time and opportunity allowed.

It was at Lugano that we were first introduced to our towers of Italy, and a more beautiful place for the introduction can hardly be imagined. It was a warm November afternoon when we alighted



there from the Geneva-Milan express. The sun was sinking—going down into the great pile of Alps from which we had just come—coasted, I am tempted to say, for all the way down on the southern slope of the Alps, on the St. Gothard railway, there is a feeling that one is sliding—sliding and slipping down with a stop every now and then, lest the impetus should become too great. But we had just alighted at Lugano. Right below us lay the town with its half-dozen churches and their towers, and from each and all of them, sometimes in unison, sometimes one after another, came the soft peal of their bells. And it was not from the town alone but from a dozen others near by, little hamlets with a score or more of houses clustering each around its brown or gray tower with its answering bell.

The tower and the lake were all in shadow, but the tops of the mountains opposite were still in the wonderful glow of the sunset. Save for the bells it was absolutely still until the toy whistle of the outgoing Milan express broke out, and all the echoes in the Canton of Ticino started up and proclaimed themselves not to be quieted until the train itself was well on its way to Como.

I believe the country around Lugano is more thickly studded with bell-towers than any other section of Italy. They are not elaborate, but they give a singular beauty to the landscape. Straight and slender and square; sometimes with only a flat tile roof on the top, sometimes more elaborately terminated with dome or pyramid, cone or consoles, and always with one or more openings, the upper full of bells.

Perhaps our being strangers to Italy and her towers and churches made the little ones scattered about on the banks of Lugano especially striking, for we never afterwards noticed them particularly, and when we had been a week in Florence we had forgotten all about them. In fact, after we had been in Florence long enough to discover what there was there, we were rather inclined, in devoting ourselves to that city, to forget the rest of Italy for the time. Perhaps it was the knowledge that we were to spend several months there that gave us such a feeling of restful content, and within two weeks we had grown to look with satisfactory pity upon the be-field-glassed and Baedekered tourists who came into the Piazza del Duomo, and having gazed at the Cathedral, Giotto's Tower, the Baptistry and the Bigallo, inside and out, departed ten minutes after their advent. Sometimes a girl would come along with a Seaside Library edition of Ruskin's "*Mornings in Florence*," and another girl; and the two would spend twenty long minutes in alternate reading, and gazing at the tower. They were usually on their way to the old Franciscan Church of Santa Croce, there to study and exclaim upon the frescoes once ascribed to Giotto, so that they generally gave up the tower after a hasty glance or two at Tubal Cain and Agriculture, and a few other of the panels in bas-relief upon its lower walls, and hurried on. It would be presumptuous to attempt to describe that tower—Ruskin has done that in his "*Seven Lamps*."

"The characteristics of Power and Beauty occur more or less in

different buildings, some in one and some in another. But all together, and all in their highest possible relative degrees, they exist, so far as I know, only in one building in the world, the Campanile of Giotto. . . . In its first appeal to the stranger's eye there is something unpleasing; a mingling, as it seems to him, of over-severity with over-minuteness. But let him give it time, as he should to all other consummate art. I well remember how, when a boy, I used to despise that campanile, and think it meanly smooth and finished. But I have since lived beside it many a day, and looked out upon it from my windows by sunlight and moonlight, and I shall not forget how profound and gloomy appeared to me the savageness of the Northern Gothic, when I afterwards stood, for the first time, beneath the front of Salisbury. The contrast is indeed strange, if it could be quickly felt, between the rising of those gray walls out of their quiet swarded space, like dark and barren rocks out of a green lake, with their rude, mouldering, rough-grained shafts and triple-lights, without tracery or other ornament than the martins' nests in the height of them, and that bright, smooth, sunny surface of growing jasper, those spiral shafts and airy traceries, so white, so faint, so crystalline, that their slight shapes are hardly traced in darkness on the pallor of the Eastern sky,—that serene height of mountain alabaster, colored like a morning cloud and chased like a sea-shell. And if this be, as I believe it, the model and mirror of perfect architecture, is there not something to be learned by looking back to the early life of him who raised it?"

But there are in Florence other towers which are not so unapproachable as this of Giotto's, for Florence in the Middle Ages was a city of towers, and a great number of those standing now were built upon the ruins of the older towers which perished from time to time in the broils and fires that the good citizens of Florence were continually starting. In 1248 the Ghibellines drove the Guelphs out of Florence, and having them well out, tore down thirty-six of the tallest of the towers. And they even tried to destroy the Baptistry, and ordered Niccolò Pisano to do so by toppling the tower of Guardamorto upon it—a tower so-called because the bodies of the dead were exposed there for a certain time before burial. Niccolò Pisano, however, not wishing to destroy the Baptistry, took out the stones upon the side toward the piazza, put in wooden supports and set them on fire. And the tower fell across the piazza and was set down as an act of Providence, and a special miracle of St. John, under whose patronage the Baptistry was and still remains.

But few of these towers remain now, and of the old "tower-houses" of which there were so many in Dante's time, there are only one or two left in Florence. In Prato where we went one day to see the Cathedral and outside pulpit of Donatello, we found a large number of them. They are probably one of the earliest forms of tower in Italy, and are nothing more than massive towers of stone, with small windows in the lower stories, and often a small loggia at the top, covered with a simple shed-roof of tiles. They are usually twenty-five or thirty-five feet square, and vary in height from fifty to eighty



A PANEL IN THE CAMPANILE
BY GIOTTO AND ANDREA PISANO.

feet. In Prato they are frequent enough to give the town a very distinct character. The campanile there, by-the-by, is well worth seeing. It suggests several of the Florentine ones,—a very natural sequence, for Prato was, until early in the sixteenth century, under the rule of Florence, and enjoyed her artists more or less. Giovanni Pisano designed in great part the Duomo, and the tower was the work of Niccolò di Cecco. It is of the same black-and-white marble as the tower in Florence, but the use of the colors in a decorative way is strictly confined to horizontal stripes after the manner of the Siena Cathedral, while the pilasters on the corners, and the upper openings show a humble imitation of the Florentine masterpiece.

Of all the public buildings in Florence, the Bargello is perhaps as characteristic of the city as any. In the heart of Florence it stands, now converted into a national museum, and one of the most interesting buildings, apart from its architecture, in Florence. It was built as the palace of the Podestà, who with his successors occupied it until the office was abolished by Cosmo I. It is a huge building, massive and square in appearance but a rhomboid in plan. The walls are heavy and thick, four or five feet through at their base, of rough, unhewn stone, those of the lower stories large—huge blocks in many cases—and those above, smaller and laid in irregular courses. The tower is much the same. It seems to be a direct outgrowth of the old "tower-house," slightly modified to fit its purpose better. Built probably about 1260, it is the genius of the age which conceived it. It is heavy, gloomy, and to a certain extent forbidding. It may be said to be absolutely devoid of ornament, yet it has its strong points in design as well as construction. The batter of its lower walls adds to the effect wonderfully, and the courses of ashlar, of stones which are of all sorts of grays and browns and reds, make it rich and warm. The small windows below tell of a time when large openings were more to be feared than darkness or dampness, and the large and generous arched opening at the top lightens the whole tower at once. In it hangs the bell called by the people, "La Campana dell' Armi," which sounded as a signal for all good people to lay down their arms and disperse.

It is a curious fact, by-the-by, that the two civil towers, the Bargello and the Vecchio, which carried each their tocsin bell, one for the gathering, the other for the dispersing of its citizens; should have almost absolutely open belfrys, while the bells in all the church-towers are more or less enclosed. Was it that the Florentine was more ready to hear the former than the latter? The history of Florence would seem to bear out this theory. The fact that the Vecchio bell, which rang the summons to arms, is far more exposed than the Bargello, is also significant.

The parapet of the tower with its square merlons bears testimony to its Guelphic origin. All of the upper portion of the building has been restored and very well restored. Once the walls of the tower were partly covered with frescos, but they are all worn away now—and it is much better so, to the American eye at least. The only bit of artificial color is far up under the corbelling which bears the parapet, where the cross and the lily of Florence are emblazoned. The architect of the greater part of the building was Arnolfo di Cambio, and probably the tower itself is to a great degree his. Though as I said before, it is far more typical of the age in which it was built than of the style of any one man.

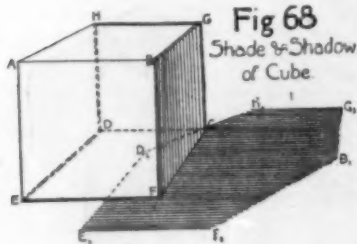
GEORGE CLARENCE GARDNER.

[To be continued.]

ARCHITECTURAL SHADES AND SHADOWS.¹—VIII.

CHAPTER VII.

Shades and shadows of right-line solids; cubes, principal and oblique; sides in shearing light; square prisms and parallelepipeds; octagonal prisms; side in highest light; cylinders. Pyramids, square and octagonal; cones and abridged methods for locating line of shade upon them. Solids of revolution with convex profiles; line of shade found by tangent cones and cylinders; the spindle and torus.



Line of Shade is BGDHDEFB: Shadow is six-sided

All of these solids, which form the subject of the present chapter,² are generated by straight lines, their lines of shade being therefore comparatively simple. The sphere, torus and spindle are considered incidentally as derivatives from the cylinder and cone, but the de-

86. THE geometrical solids most frequently occurring in architecture are the cube and its next of kin, the square prism and the rectangular parallelepiped. Then come the octagonal prism and the cylinder, and finally the pyramid, square or octagonal, and the cone, all of which appear frequently in roofs and spires.

¹ By A. D. F. Hamlin, Assistant Professor of Architecture in the School of Mines, Columbia College. Continued from page 57, No. 736.

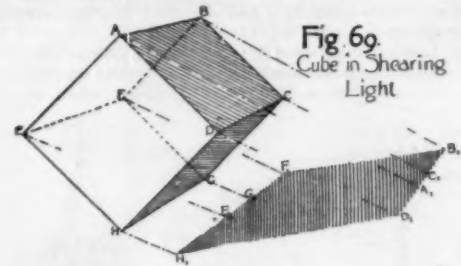
NOTE.—[In view of the inconvenience of having to refer to back-numbers for explanations of the notation used in these papers, the following memorandum will be found of service.]

HP=horizontal plane of projection; VP=vertical plane of projection; GL=ground-line or horizon. Capital letters designate points and lines in space, small italics their horizontal projections, and the same accented or "primed," their vertical projections. Subscript figures indicate points of shadow: small figures above the line indicate points of shade. Greek letters ($\alpha, \beta, \gamma, \theta, \delta$) designate angles. The diagonal of a line or dimension is its length multiplied by $\sqrt{2}$. Shadows are indicated by vertical shading; shades by horizontal shading; shearing light by oblique shading parallel to the projections of the luminous ray.

² It is impossible in a single chapter to discuss or even to illustrate by figures all possible variations in the form and position of these solids, and of their shadows and lines of shade. Only the most important and frequently occurring of these variations can be noticed; others which will at once suggest themselves will furnish opportunity for precisely that individual study and practice in shadow-casting which is most valuable and stimulating to the student.

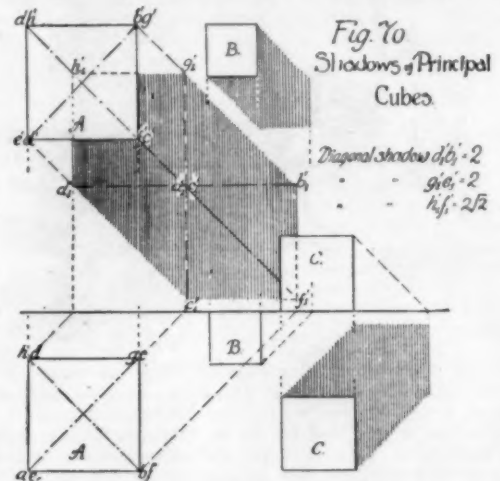
tailed discussion of these, as well as of balusters, vases and other solids of revolution is reserved for later consideration.

87. In architecture the above solids generally present themselves in what we have called "principal" positions, in which their axes



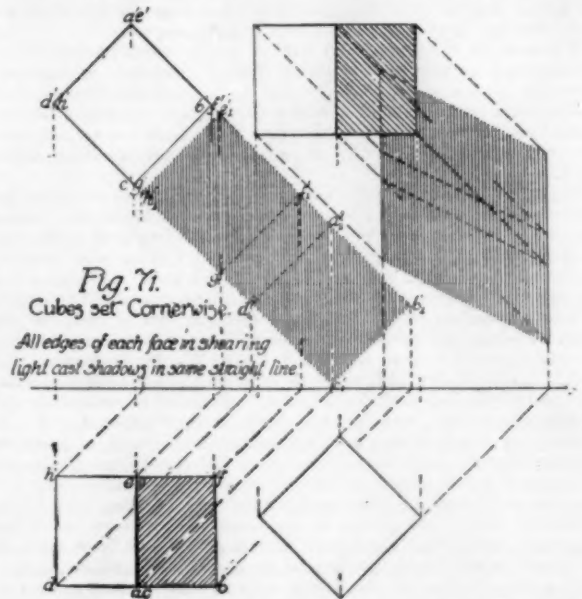
Sides ABCD and EFGH in shearing light. AB and AD cast shadows in same straight line; as also EF and EH. Shadow of cube becomes quadrilateral

are principal lines, and one or more of their faces principal planes. But in certain cases, such as that of the cube set cornerwise, of



Cube A casts Shadow on VP. Shadows of its diagonals are $h'f'$, $g'e'$, $d'b'$, and the point $a'e'$. Cube B in contact with VP hides part of its own Shadow. Cube C casts its Shadow on HP in the same way. Height $g'e'$, and width $d'e'$ of Shadow each=twice the edge of Cube, or 2.

octagonal prisms or of pyramids, one or more of the faces may be in shearing light. The shadows of such faces on the plane of in-



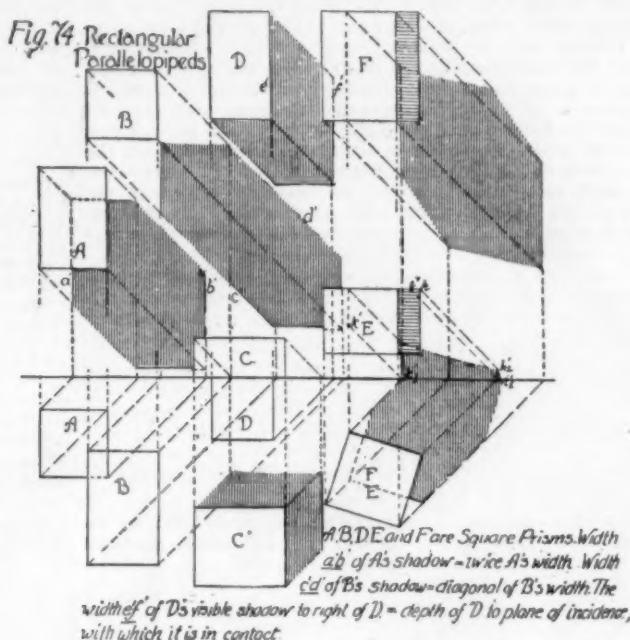
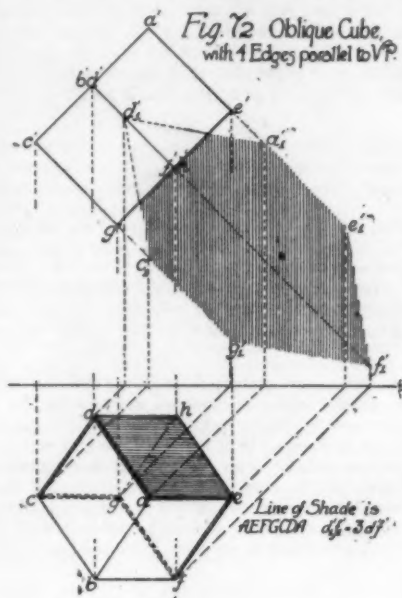
cidence are straight lines, and the whole face really forms a part of the line of shade.³ For the sake of convenience, however, we may

³ See Article 21 in No. 690 of the American Architect.

consider only those edges which separate such faces from the adjacent faces in light as really belonging to the line of shade. The effect of bringing any of the faces of a solid into shearing light is to reduce the number of sides of its shadow: thus the shadow of a cube, which ordinarily is six-sided (Figure 68) becomes a parallelogram when any two of its sides are in shearing light, as shown in Figure 69. Figure 76, A, shows an octagonal prism so placed that both of its bases are in shearing light; its shadow is thereby changed

(IX) — The principal cube casts upon either coordinate plane a hexagonal shadow bounded by two horizontal and two vertical lines, each equal to the edge of the cube or to 1; and by two oblique sides at 45° to GL and equal to $\sqrt{2}$.

Of its four diagonals, one is parallel to the rays of light, and its shadow is, therefore, a point; another casts a horizontal and a third a vertical shadow, these two being each equal to 2; while that

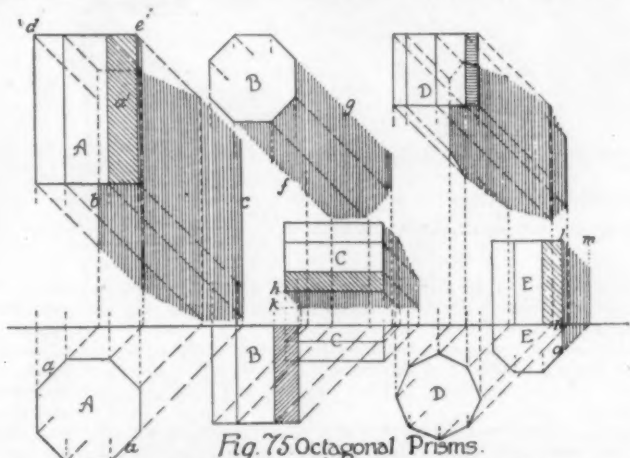
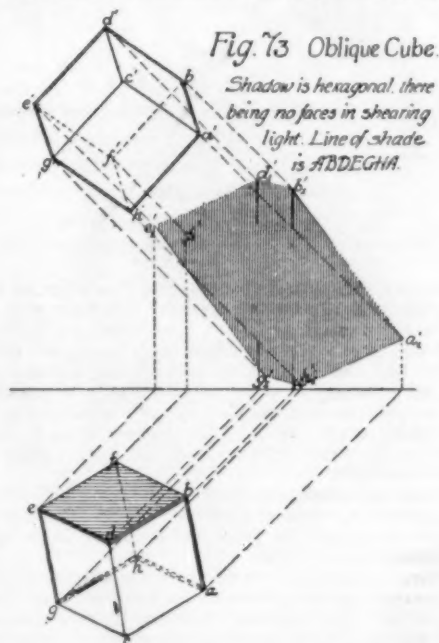


from the decagon of Figure 73, D, into a rectangle. Such cases are frequent; the oblique sides of bay-windows and octagonal turrets, the slopes of roofs and the sides of obliquely projecting wings furnish familiar examples of the phenomenon, whenever the angle is 45° , or the plane any one of the innumerable planes having one element parallel to the rays of light. Such surfaces, being neither in light nor in shadow, are half-tinted, and may have shadows cast across them.

88. The line of shade of the cube, generally speaking, is composed of six of its edges, separating three light from three dark faces; its shadow is, therefore, generally a hexagon, irregular, but

of the fourth is a line at 45° , and equal to $2\sqrt{2}$ or $\sqrt{8}$; these respective lengths are figured in Figure 70. It will be noticed that the width and height of the shadow of the cube are each double that of the cube itself. When, however, the cube is set against the plane of incidence, the width of the visible part of its shadow is precisely that of the cube itself; this is the way in which the cube oftenest occurs in architectural plans and elevations.

89. Figure 71 illustrates the shadow of the cube set cornerwise, two opposite faces thus becoming "lozenges," in one case parallel, in the other perpendicular, to the plane of projection and of incidence. In



A casts shadow on VP: two faces (a, a') in shearing light width bc of its shadow - diagonal of width de of Prism. Width of B's shadow (fg) = width of B itself. C - half octagon against VP hi = $\frac{1}{2}$ side of octagon. E - semi octagonal bay width lm of shadow = width no of side normal to plane of incidence. Port of E's shadow falls on ground D has no side in shearing light.

with its opposite sides respectively equal and parallel (Figures 68, 70, 72). The only exception is that of the cube set cornerwise, bringing two or four of its faces into shearing light; the shadow then becomes a rectangle or a parallelogram, as in Figures 69 and 71.

88 a. As the cube in architectural drawings is most frequently bounded by principal planes, it is worth while to call attention to its shadow by rule.

the first case the shadow is an oblique rectangle, in the second a parallelogram. The dimensions and inclinations of their several sides are sufficiently indicated in the figures. When all the faces of the cube are oblique, its shadow may be found by casting the shadows of three or four of its angles, or of six of its edges. The required

¹ At the intersection of the shadows of the other three, since all four diagonals intersect in a common point.

outline is completed by applying the principle that shadows of opposite edges are equal and parallel (Figures 72 and 73). Cubes so situated rarely enter into architectural drawings.

90. The rectangular parallelepiped may be considered as formed by lengthening or shortening equally one or more sets of four parallel edges or four consecutive sides of a cube. Its shadow differs from that of the corresponding cube only in the length of its sides, but not in their direction. If each of the edges forming its line of shade be taken in turn as unity, the proportionate length of the shadow of that edge will be that given in the rule or in the figure for the cube in the same position. The form and proportions of the shadows cast by parallelepipeds in several of their most frequently-occurring positions, are illustrated in Figure 74. In this figure A, B, D and F cast their shadows on a vertical plane and C on the ground. E, under F and having the same plan, casts its shadow partly on the ground and partly on the vertical plane, which must receive whatever portion of the shadow does not reach the ground in front of it. It is important to notice which parts of the line of shade cast respectively each of these two portions of the shadow; the process of identifying each section of the line of shade with its particular shadow, and *vice versa*, has already been explained in Chapter VI.¹

91. In the case of square prisms (which are simply a variety of rectangular parallelepipeds, and types of all square towers and piers), the width of the shadow may be stated in the form of a rule as follows:

(X)—The width of the shadow of a square prism, having its axis parallel to the plane of projection, and perpendicular to the other plane, is double that of the prism. When the axis of the prism is perpendicular to the plane of projection, two of its sides being parallel to the other plane, the width of the shadow is the diagonal of the width of the prism. When the prism stands against the plane of incidence, it covers a part of its own shadow; the width of the remaining and visible portion is equal to the depth of the prism.

92. Cubes and rectangular prisms, both square and oblong, are to be met with occasionally in architectural drawing in other positions

cast shadows equal and parallel to themselves, connected by two parallel lines at 45° to GL , (which is also the direction of the shadow of the axis perpendicular to the ground). Precisely similar, but necessarily changed in direction is the shadow upon the vertical plane of a prism whose axis is perpendicular to that plane (Figure 75, B). The octagonal prism almost invariably appears in architectural plans and elevations, with two faces parallel to the picture-plane and two perpendicular to it, the other four being inclined to it at 45° ; two of these are consequently in shearing light; this is evidenced by the fact that the shadow of one side of each half-base coalesces with one of the two parallel lines which bound the whole shadow laterally. It is only when the prism is placed so that all its sides are oblique to the plane to which its axis is parallel, that the phenomenon of shearing light disappears (Figure 75 D). But this is an altogether exceptional position.

(XI)—a. The width of the shadow of an octagonal prism which has its axis and two sides parallel to the plane of projection, and perpendicular to the other plane, is equal to the diagonal of the diameter of the prism.

b. When the prism has its axis perpendicular to the plane of projection (two of its sides being parallel to the other plane), the width of its shadow is equal to its own diameter.

c. The width of a shadow of a half-octagonal prism planted against the plane of incidence (its axis being a principal line) is equal to the width of the half-face perpendicular to that plane (Figure 75, C and E).

95. In each of the three principal positions of the octagonal prism one of the oblique sides is opposed directly to the rays of light, and is, consequently, more brightly illuminated than those adjacent to it: it is called the "brilliant side," or side in high light. Opposite to it is the middle one of the three sides which are in shade: this is not, however, necessarily the darkest of the three, owing to the constantly varying conditions of reflected light. In a well-rendered drawing, the three visible sides of such a prism comprise one brilliant side, one side in medium light and one in shearing

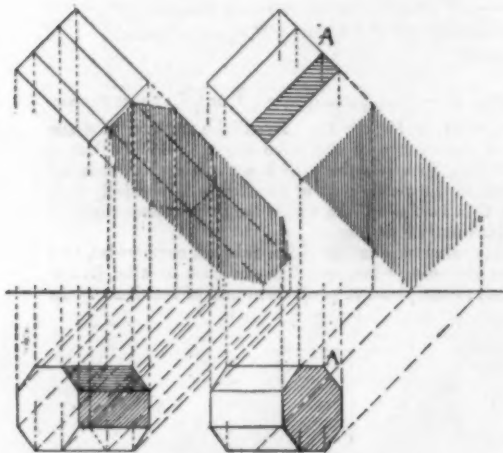


Fig. 76. Oblique Octagonal Prisms.

The axes are parallel to VP, A has its two bases exposed to shearing light reducing its shadow to a rectangle.

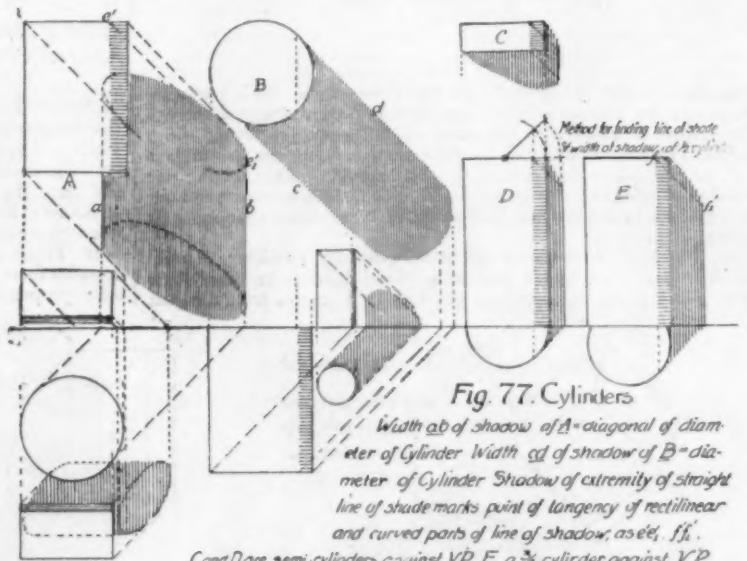


Fig. 77. Cylinders

Width of shadow of A—diagonal of diameter of Cylinder Width of shadow of B—diameter of Cylinder Shadow of extremity of straight line of shade marks point of tangency of rectilinear and curved parts of line of shadow, as ee' , ff' .

Concave semi-cylinders against VP, E, a cylinder against VP

than those embraced in the above rule. In such cases the shadows have to be worked out in the same way as indicated for the cube in Article 89, and Figures 72 and 73.

It will be seen that wherever there are no faces in shearing light, the line of shade is composed of two sides of opposite half-bases, and the two edges connecting these together; exactly half of the whole surface being in light.

93. This is, indeed, true of prisms in general having an even number of faces, with only the obvious modification required by the number of sides bounding each half-base. In the case of prisms having an odd number of faces, either more or less than half of the whole surface must be in light; the line of shade can, however, generally be determined by inspection, and it is then seen that it always takes in those sides of one base which correspond to those it leaves out in the other. But prisms with an odd number of sides are rare in architecture, the octagonal prism coming next in importance to the square prism and parallelepiped.

94. The octagonal prism generally appears with a vertical axis, as in the case of octagonal towers and piers, and the drums of octagonal domes, while semi-octagonal prisms are nearly or quite as frequent in bay-windows, oriels, apses, and similar masses. Their shadows upon vertical walls are easily obtained by casting the shadows of the two opposite half-bases and connecting these by two lines parallel to the axis of the prism (Figure 75). The shadows they cast upon the ground are even easier to draw; the bases being parallel to the ground,

light. When the prism is turned so as to show four sides, an arris replaces the brilliant side, which disappears; this arris separates two sides in ordinary or medium light. Next comes a side faintly illuminated, but not quite in shearing light, and, finally, one side in shade. However slight the differences between the luminosity of the various lighted sides may be in the actual object, it is customary and proper in an architectural drawing to vary considerably the tint or the intensity of the color of the various sides, in order to express distinctly their varying relations to the picture-plane and to the direction of the light.

96. The shadows of oblique, triangular and hexagonal prisms, and prisms in special and unusual positions, the inquiring student can easily work out by finding the shadow of each solid angle whenever the line of shade is not obvious.

97. The Cylinder. As the shadow of the circle is easiest derived from that of the octagon, so the shadow of the octagonal prism leads naturally to that of the cylinder, which is bounded by the shadows of two opposite half-circumferences of its bases, connected by two tangents parallel to the shadow of its axis. These tangents are shadows of two elements of the cylinder 180° apart on its surface, and, when the axis of the cylinder is a principal line, constitute two of its "corners" (as they have been called for convenience). Another of the four "corners," midway between these and on the front or visible half of the cylinder, is the brilliant element; that is, the line

¹ No. 718 of the American Architect.

² See Articles 61 and 62, and Figures 50 and 53, in No. 706 of the American Architect.

in which the axial plane of rays cuts the surface of the cylinder, and corresponds to the brilliant side of the octagonal prism (95). In all essential properties the shadow of the cylinder corresponds to that of the octagonal prism, having the same relative extreme dimensions for corresponding positions, with the one exception that revolving the cylinder about its axis does not affect its shadow at all, while the shadow of the octagonal prism is within narrow limits altered in outline by any rotation of the prism on its axis.

(XII) — a. The cylinder whose axis is a principal line parallel to the plane of projection has for its line of shade two opposite half-circumferences of its bases connected by two elements occupying opposite "corners" of its surface. Its shadow is bounded by two half-ellipses (shadows of two opposite semi-circles) and by two tangents parallel and equal to the axis of the cylinder. The width of this shadow is the diagonal of the diameter of the cylinder.

b. When the axis is perpendicular to the plane of projection, the shadow is bounded by two opposite semicircles equal and parallel to the half-bases of the cylinder, and by two tangents at 45° to GL equal to the diagonal of the axis. The width of the shadow is equal to the diameter of the cylinder.

98. The first part of the above rule serves for the casting of all shadows of columns and circular piers and towers, whose shadows on a vertical plane should, therefore, always be given a width equal to the diagonal of the diameter of the shaft, pier or tower. The shadows they cast in plan on horizontal planes come under the second part of the rule, as also the shadows of discs, archivolt, etc., projecting from the face of a building in elevation.

99. The width of the visible shade on a principal cylinder parallel to the plane of projection is equal to the $R \times \text{Versin } 45^\circ$, R being the radius of the cylinder. If $R=1$, this width becomes $\text{Versin } 45^\circ = .2929$. Figure 77, D, shows the simple geometrical operation required to find this width; in other words, to locate the corner of the cylinder.

100. The width of the visible shadow of a semi-cylinder projecting from the plane of incidence is $R\sqrt{2} - R$. The distance of its outer edge from the axis of the cylinder is $R\sqrt{2}$, or simply $\sqrt{2}$ when the radius is unity. Figure 77, D, shows how this dimension may be obtained by means of the same diagram used in finding the corner of the cylinder. When more than half the cylinder projects from the plane of incidence, add to this width the distance from the axis of the cylinder to the plane of incidence. In the case of engaged columns, this distance is commonly half a radius, which enables us to cast the shadow of an ordinary engaged column in elevation without having recourse to the plan or section. Figure 77 shows the shades and shadows of cylinders in all the principal positions, and in Figure 78 are presented examples of the cylinder in

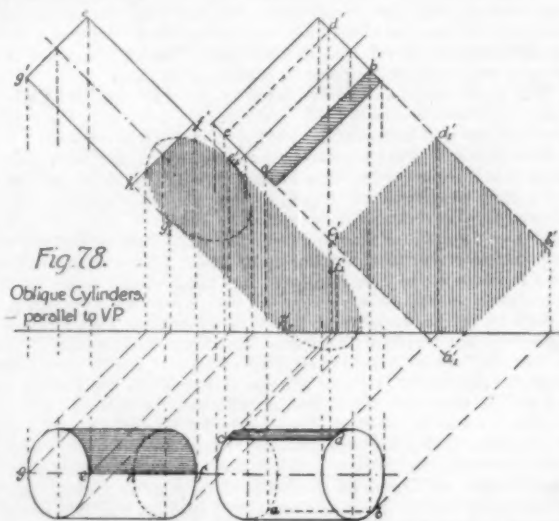


Fig. 78.
Oblique Cylinders parallel to VP.
EFGH, and AB CD, are lines of shade on B and A, found by means of their shadows which are the rectilinear parts of the lines of shadow.

oblique positions, its bases being circles perpendicular to one plane and inclined at 45° to the other.¹ In these and other unusual positions of the cylinder, the location of the right-line elements of the line of shade is not always obvious, and must be learned from the shadow by the "reverse process." A somewhat singular result is obtained in the case of the cylinder whose axis lies in the direction of a ray of light. The whole curved surface of the cylinder is then in shearing light, and (the tangents connecting the shadows of

¹ The shadows cast by circles lying in principal diagonal planes have not been discussed in these papers. They can be easily found by means of the shadows of the circumscribed octagon, or by casting the shadows of several points in the circumference of such a circle, or of several of its diameters, and drawing an ellipse through the points thus obtained. To investigate and to state in clear and concise language the proportions and properties of the resulting ellipse, and the direction of its axes, constitutes an intellectual exercise of the highest value, besides giving excellent practice in the geometry of shadow-casting.

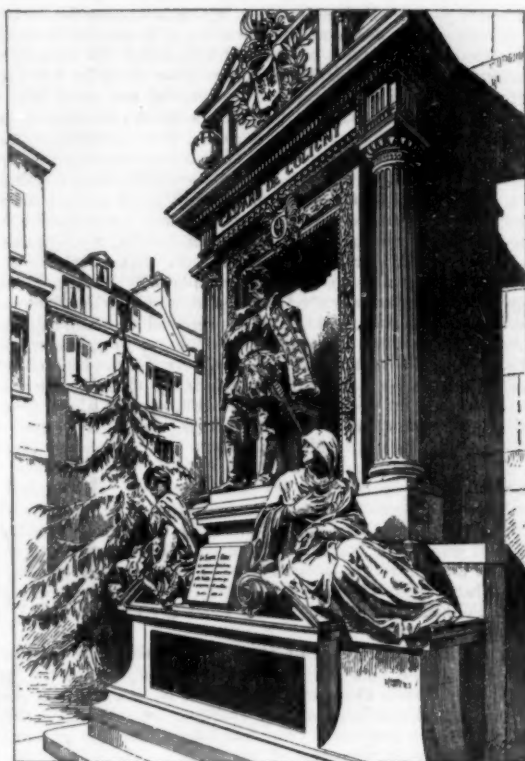
the two half-bases being reduced to points) the shadows of the two bases coalesce in one ellipse, which is the shadow of the whole cylinder.

101. The importance of a thorough familiarity with the shade and shadow of the cylinder in its most commonly occurring positions is evident when we consider how large a part it plays in architectural form. Not only do we meet with it constantly in towers and turrets, in columns and shafts, in bay-windows and oriels, and in circular pediments, but it forms the chief generating element of most mouldings. The hollow cylinder, which is most familiar to the architect in the shape of soffits of arches and vaulting-surfaces, is reserved for later discussion among those forms whose shadows are partly cast upon portions of their own surface.

(To be continued.)

THE TUDOR EXHIBITION.

PORTRAITS.



THE idea of having exhibitions illustrative of certain dynasties, by means of portraits, relics and other personal belongings, is very happy. The first of the kind was one of the House of Stuart, to which the face of Mary, Queen of Scots, gave the chief charm; this spring we have the House of Tudor delineated, principally by Mabuse, Holbein, Guillim, Stretes and Zuechero.

The exhibition may be said generally to comprise portraits, relics and armor, the arrangement being in chronological order, beginning with the reign of Henry VII, 1485, and ending with the close of that of Elizabeth, 1603.

In the five hundred portraits we have what may well stir the spirit of an Anglo-Saxon, for they are those of the men and women who helped to make our modern English history at the glorious epoch of the European awakening, when doughty deeds were done on sea and land, and to some of whom we owe the establishment of many famous colleges and schools still flourishing.

But of almost greater interest than the portraits are the numerous relics, such as articles of dress, locks of hair, love-tokens, books, letters and medals. Who, for instance, can look unmoved at the ermine tippet worn by poor Anne Boleyn at her execution and stained with her blood; Miles Coverdale's English Bible, the first complete translation published in England; Henry VIII's "Defence of the Seven Sacraments," for which the Pope rewarded him with the title — still borne by our sovereigns — of "Defender of the Faith"; Wolsey's Cardinal's hat; and the baby-clothes made by Princess Elizabeth, for the expected child of her sister Mary and Philip II, that never was born, and thus probably saved England from becoming a mere appanage of the Spanish crown?

To begin with the portraits, we cannot fail to be struck with the alertness of mind manifested in the faces of both men and women, which certainly was all needed as is shown by the fact, that, out of eighty-one persons here depicted, eighteen were imprisoned, and nine executed for treason in the first two reigns. Except, in a few

instances, there is great inequality of skill in the earliest portraits; the hands especially striking one as being nerveless.

The first portraits in the collection are those of "Margaret Beaufort, Countess of Richmond and Derby," through whose marriage with the son of Owen Tudor and Katherine of Valois—widow of our Henry V—her son Henry claimed the throne of England. All are by unknown painters: those taken in early and middle life show a fair degree of artistic skill and finish; the face is winsome and vivacious, as we should expect to find in so accomplished a woman; but in three faded portraits, painted when she was older, she looks austere and cold. These, evidently by another hand, were presented by the Countess to Christ's and St. John's Colleges, Cambridge, of which she was the Foundress.

Passing on to Henry VII, we have his celebrated portrait, by Yan de Mabuse; life-size, half length; he wears a crimson vest, rich ermine-lined robe, fastened by a richly-jewelled clasp, surcoat lined with sable, black cap with jewel. It is inscribed, on the background, with the King's name and that of the artist, with the date, omitting, however, what many have, the age of the person represented.

The upper part of the face is clever, but cannot atone for the crafty, cruel mouth, drawn down at the corners; it is avarice personified. Though a splendid portrait in every detail, either his own vices, or the painter, made him look fifteen years older than he was even at fifty-five when he died. Mabuse, however, did not paint him from life, being only ten years old at the King's death; he was, in fact, a contemporary of Holbein, who succeeded him as court-painter to Henry VIII, but whom he survived. In his hard-looking "Marriage of Henry and Elizabeth of York," no one seems to have anything to do with any one else in the picture. In full regal attire stands the unwilling and ungracious-looking bridegroom, accompanied by a bare-headed ascetic, with a rapt expression, holding a cross, thought to be the Cardinal Archbishop Bourchier, who pronounced the nuptial benediction; opposite them stands the buxom Princess, wearing a white dress brocaded with gold, and a white lace head-dress on her golden hair, looking as if prepared to make the best of a bad bargain. Behind her stands a tall figure in green, supposed to be St. Luke. Why St. Luke? While, between the high contracting parties, is the open door of an imaginary church: the oddest delineation of a royal wedding to be met with,—more like a dress rehearsal at a small country theatre. It is said this picture was originally one of the Virgin Mary, who was painted out by Henry's order, to make room for himself.

The allegorical picture, lent by the Queen, of "Henry and his Family," is in the style of an old memorial brass; the father in front of a tent, with his sons kneeling behind him with folded hands, the mother and daughters being in a similar attitude opposite, while, overhead in mid-air to the imminent peril of the entire family, St. George on horseback is slaying the Dragon. This picture belongs to the heavy Flemish School, and all the faces are extremely ugly and commonplace.

Before passing to the reign of Henry VIII, we notice the fine intelligent head of the youthful John Colet, the founder of St. Paul's School, of whom when Dean of St. Paul's we have a splendid sketch among the magnificent drawings by Holbein, from Windsor Castle. In this period we may place the half-length, life-size portrait of Margaret Plantagenet, Countess of Salisbury. The refined beauty of face and figure is charming, and though we have not the artist's name we feel sure he lingered lovingly over the canvas, so that under his brush it almost lives, even to the bit of honey-suckle she holds in her hand. This last of the Plantagenets was executed at the age of seventy-seven, with others of her family, save her son Reginald, who had condemned Henry's divorce, etc., had contrived to escape to Rome.

We now come to a perfect galaxy of paintings and drawings, by Hans Holbein, among them being those of himself and his wife, in distemper, on canvas. He has rather a heavy, determined face, dark hair and beard, and vigorous expression. His wife's portrait is very life-like, thin face, hooked nose; she wears a wonderfully painted white net cap, that quite covers the forehead, standing out just enough to show her eyebrows. She is said to have been a shrew, and looks it.

Erasmus introduced this artist to Sir Thomas More, who received him most kindly into his house at Chelsea, where he remained for three years, painting portraits of the chancellor, his family, and friends, after which, in 1534, he became court-painter to Henry VIII.

Beginning with the work executed for his royal patron, we notice a fine cartoon for a large fresco in Whitehall, for which we are indebted to Charles II, who certainly did one wise thing in having a small copy made for Hampton Court, as the original by Holbein was burned thirty years afterwards, in 1698. Henry stands in the foreground in his favorite attitude, arms akimbo, legs apart, wearing the hat and feather we know so well; Henry VII is on a raised step behind, to his left, looking quite refined beside his burly son, who was exceedingly proud of his vast proportions.

All the portraits of King Hal, by this master—some ten or so—are so instinct with life, that we almost feel the man himself stands before us, his gross, selfish face so reflects the passions by which he was governed, while the cruel obstinacy of mouth—seen, by the way somewhat in his sister Mary, Duchess of Suffolk—and the powerful grasp of the hands, plainly tell us how dangerous it was to thwart him, which fact is perhaps a slight excuse for the servility of his

courtiers. Here is no flattery surely: the marvel is that any one could be found bold enough to paint a portrait which would almost repel the beholder, did not the consummate skill of the artist force him to linger. There are several portraits of Henry in this room, unnamed, but all have more or less the same expression and grossness, except one by Paris Bordone, in which he looks younger and more agreeable. In all of them the dress is exceedingly rich, embroidered and slashed with gold and jewelled, collar of rubies and pearls, dagger in gold and jewelled sheath, etc., all giving one some idea of the almost barbaric splendor in which he loved to array himself.

The only subject-picture by the great artist, is one of Henry granting the charter to the Barber-Surgeons' Company—the king as stern as if about to pass sentence on the very ordinary looking men, kneeling on each side of him, many of whom seem to expect it. It is thought, however, that Holbein had died of the plague before he could finish this, his largest work.

We must not omit to notice two very large pictures representing Henry's "Embarkation at Dover" and the "Meeting of the Kings at the Field of the Cloth of Gold," by different painters; more interesting as panoramic views of the various processions and pageants, on each shore, than as works of art, which they are not. The first shows us Henry on board the "Great Harry," boats putting out on a stormy sea to it and other large vessels near: the second is evidently produced from sketches, showing various incidents, from the landing in France to the more than brotherly embrace of Francis I and Henry.

And now, *place aux dames*, we come to the portraits of the six wives of Henry, each of whom might truly have said, "Uneasy lies the head that wears a crown." Of those of Katherine of Arragon, the best is one taken in middle life, by Holbein, in which she looks a comely, pleasing and motherly woman, of good presence, but rather *passé*, so that we are not surprised that her fickle husband got tired of her, with the attractive and lively Anne Boleyn so near. The latter is agreeable and sincere, a good face, but has a weak chin. There are several portraits of this unfortunate lady, but the gem of the collection is a small one, by Holbein, in which she looks young and positively charming. She wears a red and silver jacket bodice, open, with Medici collar, pearl necklace round the "little neck," a white lace head-dress, showing the fair hair, and fastened coquettishly over the left ear by a jewelled tassel. Her older sister Mary had a more refined style of beauty. Jane Seymour's portrait shows delicacy and intelligence, and a certain gravity and sweetness of expression.

As to Anne of Cleves, the wonder is that Henry's courtiers did not know him better than to think so heavy and *triste* a face would please his fancy. His epithet of "Flanders Mare" was a coarse, though not inapt description, and no doubt she was glad to escape by divorce in six months. Unfortunately, Lord Cromwell, who did so much for his master at the Dissolution of the Monasteries and stood exceedingly high in his favor, lost his head for promoting the marriage in spite of Cranmer's appeal for him "who was such a servant as prince never had in this realm," which character is well brought out in Holbein's portrait of this clever man.

We have only a sketch drawing by Holbein of Katherine Howard, in which she is fairly good-looking and ready for a joke—probably she was beheaded before her portrait was painted.

Whether Katherine Parr used her own taste or her husband's, she appears to have worn dresses stiff with embroidery, richly bejewelled, and a large ring on each finger, so that the little hands—she was evidently *petite*—are almost spoiled. Some of her portraits are much faded; still the face shows vivacity and thoughtfulness, which conjoined kept her head on her shoulders. This nation owes more than it imagines to the influence for good which some of these undoubtedly clever women exercised over a man not altogether bad.

Passing to the uncrowned heads in these first Tudor reigns, we begin with the Dukes of Norfolk. The first, Shakespeare's "Jockey of Norfolk," whose portrait is indifferent, was crafty and sensual-looking. He fought in early life for Henry VI in the French wars, and fell at Bosworth Field leading the van for Richard III. For this his son was imprisoned three years by Henry VII, after which the Earldom of Surrey was restored, while for his great victory at Flodden, where he led the English host, he was re-instated in his father's title of Duke of Norfolk. His portrait, fairly painted, arrests attention by the handsome Greek profile, which is set off by the hair dressed, like a barrister's wig, in a single row of close curls. Holbein painted two portraits of the third duke, one of which is inscribed in the quaint spelling of the time: "Thomas, Duke of Norfolk, Marshall and Treasurer off Inglande the LXVI yere of his age."

The other is exquisitely painted in the minutest detail, and certainly holds first rank as a true work of art. Imprisoned with his son on frivolous charges of aiming at the throne, he only escaped execution by Henry's death, that of his son, the accomplished Earl of Surrey, having taken place nine days before.

In a full-length, life-size painting, by Strates, this ill-fated knight-errant is depicted as a brave young gallant, wearing brown doublet and trunk hose, white stockings, garter on left knee, and the collar and George on neck: he leans on a broken column, and carries a rich sword and dagger. On each side of him stands a figure bearing an achievement of arms. The name of this Earl is dear to poets, as he wrote the first sonnet and blank verse in English.

Great force of character is shown in Holbein's portrait of the

* All printed in Roman capitals.

Duke of Buckingham; a born ruler, with hands that might have swayed the rod of empire! Of the judicial murder of this popular nobleman, through Wolsey's enmity, Charles V said, "The butcher's dog had killed the finest hart in England." Of three portraits of Cardinal Wolsey, the most striking is by Holbein, representing the great and arrogant ecclesiastic in his scarlet robes and biretta, the picture-frame being surmounted by the red hat and escutcheon. Judging by the face, which is in strong profile, we can understand that, given the immense power this unscrupulous man possessed, Wolsey would be a name of terror to any who opposed him. Very near Wolsey's hangs his contemporary, Warham, Archbishop of Canterbury, said to have been pious and learned, but his superstitious and unfeeling face rather belies his reputation. There was constant discord between him and Wolsey, whom he never flattered. Holbein has not given any softening touches to the bigot's strongly-marked features. The portrait of Fisher, Bishop of Rochester, is that of another plain, selfish-looking church dignitary, by an unnamed artist.

A strong resemblance to Henry Irving is seen in Holbein's portrait of Sir John More, which, judging from the yellowish color of the lights and the brownish tones of the shadows, was painted soon after his arrival in England. Though not so clever as his better-known son, the chancellor, there was a serious dignity in his character portrayed in the artist's truthful manner. Another one, with a peculiar red light on the cheek, shows the feebleness of advancing years in the hands; while amongst the sketch-drawings from Windsor, lent by her majesty, there is a wonderfully careful head of him as a very old, but most loveable man, thoroughly English, the wrinkles most delicately drawn; this was doubtless made for a large picture of him, at the age of seventy-seven, in the scarlet robes of a judge, with Sir Thomas in the purple robes of the Lord Chancellor.

Among the sketches is a fine head of the young John More, reading, and one of Sir Thomas, with calmness, nobility, kindness and sincerity imprinted in his face. We have thus three generations of Mores, side by side.

The splendid portrait of his kind patron would alone have made the great luncheon famous, the upright character of this eminent victim of the "Whip with six cords" as the "Six articles" were called, is fully revealed in the great chancellor's serene yet massive face.

The face and figure of William Tyndale looms out dimly from an old canvas, his left hand leans on a Bible, the whole expression is manly and dignified. An inscription tells the place and date of his martyrdom.

The interior of a Gothic church forms the background of the learned Erasmus, who commissioned his friend Holbein to paint it, as well as one of the printer Frobenius, for him. The face of the scholar is very Dutch, rather pleasant but cautious and worldly-wise.

We see in Frobenius the hard working man with plenty of wrinkles, in the ordinary dress of the German middle class: a pleasant change from the long array of lords and ladies in their bejewelled furberles, which attire we are gravely counselled to study, and we presume imitate, by a lady writer of to-day.

We have almost omitted a masterpiece, the splendidly painted portrait of the first Earl of Southampton, an executor of Henry's will; the soft brown eyes are so fascinating as to make it difficult to examine the rest of the picture, in every point of which is excellence.

Another of Holbein's masterpieces is the exquisite portrait of Christina, Duchess of Milan, who, at seventeen, had been twice widowed. Its simplicity attracts and its grace charms. The great artist rarely had so young a subject for his brush, and, looking at it, one wishes that he had immortalized a few more sweet, girl faces. She looks so natural and withal more modern than many. The slight figure is clad in a black satin gown lined with fur, relieved by narrow white frills; the black hood does not hide but only accentuates the sunny hair; there is a sweet, demure expression in the soft brown eyes, while the color yet remains on lips and cheeks. It was once proposed that Christina should marry Henry VIII, but she declined the honor, saying ironically, that "she had but one head, had she two, one should be at His Majesty's service."

The portrait of Margaret Raper is probably a copy of one by Holbein, kept at Knoles; it is very life-like, highly intellectual, but a shade cold. The lace cap she wears is painted with the delicate touch of Meissonier.

The sweet, Puritan face of Lady Anne Heneage will attract many admirers, but the artist is unknown. In the last two portraits we gladly note the absence of the close-fitting head-dress, which so greatly detracted from the beauty of the wearer by entirely hiding her hair, which, however, gradually became a more important feature, fairly flourishing in Elizabeth's reign in enormous wigs.

We close our review of the Early Tudor period, in which Holbein is a bright, particular star, with Janin's anecdote, showing the high esteem in which he was held by Henry VIII. After becoming court-painter, he made a strict rule that, when engaged on a great work, no one but the King was to be admitted to his studio. One day, however, a young nobleman came, and, in spite of the servant's remonstrances, declared "that it was the only time he could spare and that he would go in." Holbein heard the noise and came out, telling his lordship of his inflexible rule but without avail, as he was determined to force an entrance. At last, the painter, beside himself with rage, took him by the waist and threw him downstairs; but, hearing the nobleman's groans and fearing that his high favor

with Henry might be useless in so grave an emergency, he hurried by the roof of his house to the palace. Getting an immediate audience, he fell on his knees, asking for mercy. Henry graciously raised him, but looked very grave when he heard that he had laid hands on a peer of the realm. He severely reprimanded the artist, and, pointing to an adjoining room, bade him remain there during the royal pleasure. In a fortnight, the young lord entered the King's presence, supported by servants and presenting a miserable spectacle, being completely wrapped in bandages. "Sire," he exclaimed, "Justice, justice." Henry, to his annoyance, took not the slightest notice of his appearance. "The thing concerns a lord and not a dog, and if Your Majesty refuses me justice, I will obtain it for myself." This was just what Henry wanted. "You forget your bandages, my lord, as well as the respect due to my royal person. I alone have the prerogative of justice. You have quite altered the case, it is no longer a dispute between a painter and a gentleman, but between a gentleman and a sovereign. It behoves you to cry for mercy rather than demand justice. As for Holbein he is one of the most precious jewels in my crown, and your duty is rather to preserve him for me than quarrel with him. Should I lose him, it would be long ere he could be replaced. Of any seven peasants I could make seven lords, but from among seven lords such as you, I could find no painter such as he. You will, of course, do as you please, but I advise you to take warning and remember that whoever insults Holbein insults me. Adieu. Holbein! return in peace to your studio. You are under the mantle of the King!"

Of Henry's son and heir, of whom he was very proud, there are several portraits, from the chubby child, just able to stand, on through boyhood and youth, when we see a strong resemblance to his mother, Jane Seymour. He has a lovable face, both clever and manly, though delicate. The large picture of Edward presenting the Charter of Bridewell to the Lord Mayor and Aldermen of London depicts the young sovereign, in his robes, seated with great dignity on the throne, surrounded by officers of state, who look thorough time-servers. Strete painted this and a finer one commemorating the endowment of Christ's Hospital—the "Blue Coat School"—but the Governors have not lent it to this exhibition. Both are in Holbein's manner.

A personage of far greater importance than the boy-king was his uncle, the "Protector" Somerset, on the well-defined features of whose face "cautious diplomatist" is plainly written; while the dark eyes, never withdrawing their penetrating gaze, seem to say: "Can I trust you?" He wears a small black cap and doublet, with white ruffs on neck and wrists. The portrait of his shifty elder brother, Lord Seymour, of Sudely, hangs near. He wears a crimson and gold doublet, black surcoat and cap with red feather, and is rather handsome. But he was a mean man; he flirted with Princess Elizabeth before and after he married his old love, Queen Katharine Parr. But at last, for conspiring against the Protector, he was sentenced without trial by the Council and beheaded.

The portraits of Lady Jane Grey show us the unassuming and pleasant face of this intelligent and luckless victim of her parents' ambition. She wears the small jewelled cap then coming into vogue, but otherwise the dress is unbecoming.

The greatest admirers of Queen Mary's policy—if such there be—must allow that she wears a very gloomy and forbidding expression; though slightly resembling her mother, she misses her kindly countenance. In only one of several portraits, by Sir Antonio More and others, is she seen to relax into a smile. In all others she looks sour and discontented, while her dress is either black or brown.

We need waste no words on the portraits of Philip II, even though one is by Titian, since far more agreeable than the faces of these two persecutors is that of Cardinal Pole. This handsome English gentleman resembles his mother, Margaret, Countess of Salisbury, in delicate refinement of form and feature: his long, fair beard looks quite modern, as until the closing years of Henry VIII all faces were closely shaven. He wears the robes and biretta of a cardinal. The portrait here described was painted when he was in Rome, aged thirty-five, by Del Vaga. A second one, by Caracci, is dated 1555, in which year he returned to England as a Papal legate on Mary's accession. In it and another, the artist of which is unnamed, he looks much older and more of a churchman. He was, however, too tolerant and mild to please the authorities in Rome, and would have been recalled but for Mary's great regard for him. It was strange that both should die on the same day.

In the Elizabethan room, Elizabeth herself claims the first notice. There are no less than twenty-six portraits of her as Queen, at different ages, and some half-dozen as Princess. The earliest one, which she sent to Edward VI, represents her as a girl twelve years of age, very plain, but with well-marked features. The majority of her portraits show scarcely any eyelashes and very thin eyebrows, which cannot but strike one in going round the room. That she was exceedingly particular as to her portraits is notified by the fact that, in 1563, she issued a proclamation to the effect that none but a "special connyge paynter" was permitted to draw her likeness, and ordering all by unskilful artists to be burned. It was probably at this time that Zucchero was appointed court-painter, and there is a marvellous delicacy of texture in all his work. The ruff, which was then worn, lent itself to his exquisite brush, for in some paintings the lace looks like a spider's web, so delicate and perfect is it. An early portrait of Elizabeth, taken, evidently, shortly after her accession to the throne, represents her seated, full face, in royal robes, gilt-edged

ruff, jewel crown, her hair hanging loosely over her shoulders, giving a girlish appearance.

Among Zuccheri's wonderful portraits of the Queen, one, inscribed "Aged 42," is a perfect gem: a half-length, in gauze dress elaborately jewelled, open-lace ruff, with gauze wings. The face has a fine expression, and the whole conception and work is most delicate and beautiful. It is, indeed, the picture of the room. It is lent by Jesus College, Oxford.

A very remarkable painting sent from Hatfield House by Lord Salisbury, represents Elizabeth in a robe scattered over with eyes and ears—typical, one may suppose, of her omniscience—the right hand grasping a rainbow, while on the left sleeve is embroidered a serpent, she has a splendid aigrette in her hair. Another dated 1574, is totally different in expression and almost in feature: the face is pale and very calm and thoughtful, with an entire absence of the conceit so marked in most of her portraits.

The last portrait we can notice of the "Virgin Queen" is contained in a cabinet 37 x 27½ inches, on the two doors of which—standing open—are portraits of her four courtiers, Raleigh, Lord Burleigh, Essex and Leicester. In this, which is by Zuccheri, her expression is soft and lovely, the eyes more drooping than in any other portrait where she is "every inch a queen"—in the cabinet she is a woman—the date is 1567. The story goes that when Elizabeth was staying at Kenilworth, Leicester asked if she approved of everything, and she answered that the garden was not in sight of the house—upon which he had one made during the night under her windows, which so pleased her that this picture was painted and given to him.

One cannot help being amused, when looking at all the Queen's portraits, at the changes that are rung on her hair, which is sometimes flaxen, then rich red, again a dark brown; but, to a lady who died possessed of two thousand wigs, this was an easy matter—it is the same with her eyes, sometimes brown, sometimes blue. All the ladies of the period are painted with the same long-pointed stomacher which makes one wonder whether they ever sat down.

Among the portraits of the statesmen of the time, the earliest is that of the Marquis of Winchester, the self-named "willow"; he has small eyes with a subdued twinkle and very florid complexion: there is no artist's name. Only one portrait out of seven of Cecil, Lord Burleigh, is named, it is by Marc Gheeraerts. All of them plainly show the cautious eye and firm mouth which made him the backbone of Elizabeth's reign: in one portrait the face is more genial than in most, while the hands are well painted, the glove being held with a firm grasp. Robert Cecil, first Lord Salisbury, youngest son of Lord Burleigh, appears to have inherited a full share of his father's genius for diplomacy, the face is delicate, the veins on his temples being clearly traced, chin very pointed, full grey eyes; he holds the privy purse as Lord High Treasurer. Sir Nicholas Bacon, aged fifty-five, a dark, mellowed painting of a man we know best as the father of his son, though he was one of the prominent statesmen of Elizabeth's reign. The picture hung next to this is a fine study in black and white, the face and beard finely executed, of Lord Arundel, of Wardour, called "The Valiant."

Among seven portraits of Elizabeth's favorite, the Earl of Leicester whom she called her "Sweet Robin," is one without the artist's name, with small white ruff and dark green doublet. The head is well shaped, eyes watchful and wary; face, on the whole, not pleasing, the dress in all is strikingly handsome. There is also a fine marble bust of Leicester in the entrance to the Elizabethan room, together with one of the Queen, in which he wears a cap and feathers, and is not unlike our own Prince of Wales. Robert Devereux, second Earl of Essex, who was introduced to Court by his guardian, Lord Burleigh, soon became a favorite owing to his "goodly person" and "innate courtesy," though in his first portrait he has all the appearance of a petted, sulky boy; the details in this painting are very fine, especially the exquisite design on the belt; he wears black embroidered doublet and trunks. The only named portrait of Essex is by Van Sorer, very finely executed; the effect of black hair and auburn beard, which occurs in all his later portraits is peculiar, the face and expression are most pleasing; he is also one of the four courtiers on the cabinet painted by Zuccheri. Through all vicissitudes he retained the Queen's affection, though on one occasion she boxed his ears for rudely turning his back on her, telling him to "go and be hanged"; her grief at his death is well-known.

There is a magnificent picture of Sir Walter Raleigh and his young son—born in the Tower—dated 1602. He is a noble-looking man, tall, well shaped, with dark hair: there are six portraits, in all of which the strong reliable face is well depicted.

After Raleigh, one naturally turns to the portraits of the celebrated navigators, who did so much to spread the fame of England by their deeds of daring. One of Frobisher, at the age of thirty-nine, by Cornelius Ketel, is a fine specimen of the buccaneer of the day, with florid face, buff-leather jerkin and hose, holding a wheel-lock pistol in his right hand. The picture is much cracked. Another of him, artist unnamed, is of quite a different type, perhaps of later date, but both are vigorous in treatment and style. As an inscription on the back tells us, Frans Pourbus, by command of the Queen, painted a portrait of Drake. The face is much scarred, the eye clear and resolute, with a very engaging countenance. He wears the tall hat of the time decorated with a gold trident.

It would be impossible to consider in detail all the portraits

in this room which so fascinate one, either by their beauty of execution or by some special charm of feature; but we must not fail to remark six portraits of Shakespeare, all bearing a certain likeness, and yet so different to our conception of the man. One wearing a square collar, with ear-rings, black hair and florid complexion, with not a trace of poetic genius in his appearance, is said to be by a Spanish artist, but unnamed. The "Fenton Portrait" is more extraordinary still, the head sloping backward and the expression dull and flaccid. Zuccheri gives us one of his charming pictures, representing Shakespeare in a black dress with white lace ruff, a peculiarity of this portrait being the fair hair and beard, instead of black, as in the others. This is inscribed "W. Shakespeare"; and yet another picture has on the background his coat-of-arms, thus disposing of the assertion, recently made, that he was base-born.

A thorough Englishman is Sir Richard Wingfield, by Jansen; his bluff, weather-beaten face beaming with good-nature. The chief charm of this vigorous picture is the gold-embroidered scarf crossed over the breast and tied under the left arm. When Elizabeth asked him "what reward he was to have for his faithful services," the old courtier replied: "The scarf your majesty wears is sufficient reward for me." The Queen at once took off her scarf, tying it round her gallant old general. Another of the same type is Sir Ambrose Cave, who is represented wearing the Queen's garter of yellow silk, which she had dropped while dancing. A bright expression is on his face, which is withal daring, as might be supposed from the story.

William Drummond, of Hawthornden, the Scotch poet, is exquisitely painted: the curling brown hair, clear eyes and open expression are full of charm.

John Fletcher and Ben Jonson are fine specimens of poets—no long curling hair and falling collar, but open, fresh, bright-looking men. With neither is the artist's name given. Fletcher holds a cartel in his right hand, with the following quaint lines inscribed:

"The pencil and the pen have studied together,
To show thy face and wit (Fletcher) and whether
Have done their best, I know not, but confess
None but thy own pen could thy wit express."

There is a very fine full-length portrait of Jane Dormer, Duchess of Feria, a companion of Queen Mary, and later a close friend of Mary, Queen of Scots. She is splendidly dressed, and regal in her style, so marvellously like Her Royal Highness, the Duchess of Fife, that she might have been the original of the portrait.

Four beautifully-executed pictures of Anne Clifford, Countess of Dorset and Pembroke, call for special mention, representing her in childhood, youth, middle life and widowhood. The eyes are so lustrous and speaking, with a wonderful pathos and trouble in those of middle-life.

We reserve the armor, relics, books, MSS., etc., for a second notice.



INDUSTRIAL SCHOOLS.—THE ONE
AT MUNICH AND ITS CURRICU-
LUM.—GERMAN SPRÜCHE FOR
FIREPLACE MOTTOES.

IT may be well to consider another class of institutions, namely, the Industrial Schools, the success of which must be of vital interest to the architectural profession and the public at large.

For, that the belief that the architectural progress of a country is due entirely to the architectural profession is a fallacy is quite evident. And that encouraging the proper training of the architect by publishing schools is but a step towards, and can but smooth the way towards high achievement in architecture, and that it is but a link in the chain of circumstances necessary to excellence in that art is quite as evident. Alone the architect can do but little and it is only with an army of trained and artistically cultivated hands in the kindred arts that he can hope to reach the high level of art characteristic of several eras.

Neither can money alone create an art, it can and then only under the most favorable circumstances but foster it. All the wealth of Athens could not have created a Parthenon, had not at that time a Phidias lived. Nor could all the gold and tributes of the Roman Emperor have created a Santa Sophia had not Asia Minor given to the world two of its greatest architects. But how impotent they would have been without the assistance of the large body of sculptors, painters, mosaic-workers, gold and silver smiths, etc., at their disposal, who vied with one another; each individual desirous of making his little mite add to the splendor of the most magnificent interior ever produced.

It is needless now to say that the industrial arts during our century have not flourished as they did during the previous centuries. When this became evident and when able minds took

hold of the matter of raising the arts above their normal level and realized that there must be a somebody between a mere mechanic and a professional man, it was then that the Industrial Schools were established — which, even yet, are but experiments and perhaps only the prototypes of the perfectly developed schools soon to come.

How the problem was solved in Germany may be ascertained by examining the art-work of to-day and that of twenty years ago.

The school at Munich, probably — if the number of medals received at various exhibitions is a criterion, holds a high place among like institutions. Its object, as set forth in the catalogue, is to properly train and give instruction to those desiring to engage in the pursuits of architectural draughtsmen,¹ mosaic-workers, decorators, carvers, modellers, stucco and metal workers, stained-glass painters, also xylographers, lithographers, designers of wall-paper, carpets, etc. The school also offers preparatory courses to those intending to enter the Academy and the Polytechnique in the architectural course. Before entering any one of the departments, the students must have completed a general course (the time of completion depending upon the expertness of the individual).

This course is as follows:

Linear drawing, projections and elements of descriptive geometry.

Perspective: shades and shadows.

Architectural-draughting.

Ornament — copying from plates and drawing from the round.

Surface-decoration — *stuccato*, *intarsia*, mosaic, etc.

Flower-painting, and drawing the various forms used in decoration.

Modelling and carving.

Lectures on the styles, and also practice-work.

History of art.

Lectures on Anatomy.

Now follows the department instruction. I shall only consider the course intended to fit the student for a career as architectural draughtsman. In this course as well as in all the others the absence of all theatrical work is very noticeable. The entire day is devoted to draughting and designing. The student at first copies, enlarges and then slightly modifies plates which are given him, and at last designs. In this course special attention is paid to the designing of furniture, ironwork, exterior decorations, and the various ornamental parts of a building. Upon leaving the school the pupil is supposed to be proficient in all these branches, but yet knows nothing whatever of the general construction of a building. Unversed in the mysteries of I-beam and truss, with a mind unembittered by contact with the oblique-arch, he is yet a valuable assistant to the architect who employs him.

The entrance requirements are as follows: The student must be fifteen years of age, and must have a diploma from a school, an equivalent of which I should say would be rather higher than one from our grammar or intermediate schools. He must also have a knowledge of freehand drawing and be able to make a clay model from a drawing which is given him. Any one of the courses can be completed in three years, but often four and even five years are taken. During the winter term — the school-year is divided into two terms — six hours daily are spent at the School; there are also night classes, the attendance at which is optional, but only members of the School may attend. Seven hours' work per day is required during the summer term. Something quite unusual is the department for girls and young women. Here instruction is given in needle-work, drawing, painting on porcelain, faience, etc.

A few statistics may be of interest. The School was founded in 1868. During the last year there were 329 people in attendance, 250 men and 79 women. Among the men were 21 foreigners.

A walk through the School shows some excellent work, especially in wood-carving and metal-work, also in draughting — brush-work in particular. Almost all the work is in the Renaissance style, the influence of the Dürer and Holbein period predominating.

In the department of interior-decoration the colors used are almost entirely Roman: no originality whatever is shown in their choice; the forms, however, are sometimes quite novel. One notices upon entering the freehand draughting-room the absence of the casts of Venus, Homer, Mercury and all the others one has learned to associate with a drawing-school. It appears that only parts of the body are drawn from plaster-casts, and when the pupil has gained enough proficiency to draw the whole human figure, he draws directly from life.

Considerable attention is now paid to the Rococo — "the utter ruin of art" — in the student's work, often verging into the periwig or pig-tail style. No attention was given to this style, which marks the degeneration of pure Renaissance, until within the last few years, then it became necessary, because of the demand for Rococo designers, for it seems that the public is again captivated by the dazzle and false splendor of a Rococo interior. In hotel and café architecture, as may be imagined, this style is particularly popular, for cafés in Munich are always made very attractive. And, indeed, one can get a fair knowledge of the styles by scanning the advertisements in the newspapers. You will meet with some such as these: "Dinner in the Rococo rooms at twelve," "Best wine at the Gothic cellar," "The Turkish coffee-house," "The Arabian café," "Old German-Renaissance wine-house," etc. Even in cigar-stores one notices the pervading desire

to decorate everything. A tobacco-shop is poor, indeed, that has not an Oriental air about it, at least so much of one as can be produced by a few Turkish rugs, a divan and the usual inlaid table with a hookah on it. The beauty and value of all these restaurants, and so on, lies in the fact that everything is in good style and perfect keeping; thus if you enter an old German-Renaissance establishment, you must expect to sit on an antique wooden chair with its spreading legs; at a Turkish café you can recline on the softest of divans, or, elsewhere, on the twisted chair of the Rococo period, or perhaps in the sombre Gothic hall you can, resting around the huge oven of painted tile, dream of chivalrous knights and lovely ladies.

In a recent article in one of the German art-journals, the methods of these schools were quite severely criticized for the lack of originality shown in the student's work. That originality is not much encouraged is evident to any one who visits the school, but whether this is a fault, is an open question.

Now that I have touched the subject of interiors, it may not be amiss to treat briefly of a matter which, although it may be found of use, will not, perhaps, furnish a very readable page. It has, I think, of late become the fashion to bring the literature of the old Germans in close connection, as it were, with our hearths. Not only do we frequently see their proverbs, or, more correctly, sayings (*Sprüche*) over or on our fireplaces, but also ingeniously worked into a frieze around a room — a good idea and an agreeable change from the everlasting garlands and the running acanthus ornament. If I may be so bold as to say it, not a few times has an architect or draughtsman, after having wearied his eyes by vainly attempting to decipher some saying on a photograph of some old interior, given it up in despair, and resorted to his own poetic effusions or to "Salve." This latter word, although it undoubtedly strikes sympathetically on the ears of the initiated, must carry with it to the ears of the less instructed recollections of an apothecary-shop, minus the soda-water fountain and the permeating "Jockey-club" perfume, and thoughts which are better distant from the hearth than present to mar its cheering influence. And in these days it is the unsophisticated mind who resort to the fireplace as a fireplace, and not solely as a shelf for exhibiting the results of a few days of shopping in the stores of Paris or New York, or perchance a Japanese bazaar, together with the latest bits of art from the hands of "our daughter," in the shape of a few brass plaques or a wooden spoon tastefully and artistically decorated with gold paint and a blue ribbon, while the modern man has his gilded and perfected hot-water radiator.

There are, of course, a large number of very apt and beautiful English quotations, but they are not what is wanted, probably for the same reason that New York caterers sell a "Boston oyster-fry," while in that city itself only "New York fries" are in demand. At the present time, I think I am right in believing the old German "*Sprüche*," very numerous indeed, have to a certain extent replaced Latin quotations. It is, therefore, and in view of the fact that a suitable collection has never been made, that the few which shall presently follow are now presented. Most of the "*Sprüche*" one meets with are suitable only for club-rooms, public dining-rooms, etc., because it must be remembered that applying them to such objects as we do now is a modern innovation. They were originally seen only on drinking-glasses, bowls and mugs, or perchance were the words on the weather-beaten sign-boards which betokened the existence of the "Blue Boar" or the "Golden Stag," and their respective jolly, red-faced keepers.

The mottoes which follow (a) have been taken from modern tile-stoves made after old patterns, and are very well-suited for fireplace decoration. The group b can be applied anywhere. They do not speak directly of the good cheer of hearth and home, but sometimes express good and beautiful sentiments, and always open a world of thought.

(a) EIN EIGENER HERD, IST GOLDES WERTH,
IST ER SCHON ARM, SO IST ER DOCH WARM.

(a) [One's fire-side is as good as gold,
Though humble it is never cold.]

WO BLEIBT HARM,
WENN HERZ UND STUBE WARM.

[No harm befalls
Within warm walls.]

AM FEURIGEN OFEN, AM FEURIGEN WEIN,
DA MAG WINTER, WINTER SEIN.

[Who cares for winter and his snows,
While the fire leaps and the good wine flows.]

(b) EIN LEERES HIRN, EIN HOHLER SINN,
GLEICH LIEST DER TEUFEL MESSE DRINN.

(b) [The devil can no lodging find
Where one has healthy brain and mind.]

EDEL MACHT DAS GEMUETH,
NICHT DAS GEBLUET.

[In lofty mind and sterling worth
Is nobleness — and not in birth.]

WER REDET, WAS IHN GELUESTET,
MUSS HOEREN, WAS IHN ENTRUESTET.

[Have a watch on your tongue lest perchance you may hear
Unpleasant retorts from those who are near.]

¹Note that in Germany a distinction is made between the man who employs in architectural draughtsmanship as a life-pursuit and the scientific school-graduate who adopts it simply as a stepping-stone to future practice as an architect.

WER ENTBEHRT DIE EHRE,
DEM FEHLT DIE BESTE WEHRE.

[With honor, hence
Flies best defence.]

WIE SICH DER MANN WEHRT, SO WIRD ER GEEHRT.

[In the world's sight
As we fight
So will we
Honored be.]

DIE WAHRHEIT IST EIN SELTEN KRAUT,
NOCH SELTNER WER ES GUT VERDAUT.

[Truth is an uncommon vegetable
And still more rarely palatable.]

DER ALTEN RATH,
DER JUNGEN THAT,
DER MAENNER HUTH
WAR ALLZEIT GUT.

[The word of the sage, youth's fiery mood,
Man's watch and ward, were ever good.]

EHR, LEHR, UND WEHR,
KEIN MANN BRAUCHT MEHR.

[Honor, learning, defensive power—
What in life can man ask more?]

FREUND SIE AUF DICH
UND NICHT AUF MICH,
UND FEHLE ICH
SO BESS'RE DICH.

[Rely on yourself and not on me,
Then if I fail unharmed you'll be.]

FRISCH DARAN SCHLAEGT HALB DEN MANN.

[To strike at first with might and main
Is half the victory to gain.]

TRINK UND ISS,
GOTTES UND DER ARMEN NICHT VERGISS.

[Eating and drinking, be ever thinking
Of God and the poor outside your door.]

MAASS IM TRINKEN UND ESSEN
SOLLST DU NIE VERGESSEN.

[Meat and drink do not abuse,
All due moderation use.]

WER TRINKT OHNE DURST UND ISST OHNE HUNGER,
STIRBT DESTO JÜNGER. (Luther)

[Who eats when not hungry and drinks when not dry
From foolish indulgence the sooner will die.]

ISS DEIN BROD MIT FREUDEN, TRINKE DEINEN
WEIN MIT GUTEM MUTHE. (Bible)

[Eat with hilarity
Drink with charity.]

VIEL ZEHREN UND GASTEN
LEERT KELLER UND KASTEN.

[He who ever drinks and eats
All too soon his purse depletes.]

TRUNKNER MUND
ZEIGT HERZENSGRUND.

[Who drinks too much must have a care
Lest his secrets be laid bare.]

ZU WENIG ODER ZU VIEL
IST ALLER THORHEIT ZIEL.

[Who eats and who drinks just the proper amount
That man as a sage among men you may count.]

UEBERMASS, SPRENGT DAS FASS.

[When the cask is running o'er
Do not try to put in more.]

SEI NUCHETERN UND KALT
WILLST WERDEN ALT.

[The sober and the self-restrained
A pledge for green old age have gained.]

TRINK UND ISS,
GOTT NICHT VERGISS!
STERBEN IST GEWISS.

[Eat and drink, of God ever think.
The time draws nigh for us to die.]

TRINK UND ISS,
DEIN LEID VERGISS.

[Drink and eat
And sorrow forget.]

TRINKT UND ESST GOTTES NICHT VERGESST,
GOTT, THU DICH ERBARMEN UEBER MICH ARMEN.

[Eating and drinking of God be thinking
May He forgive and help us lies.]

The last twelve quotations would be suitable for a dining-room; they were perhaps originally on cups and goblets, but are such as would meet the approbation of the most confirmed teetotaller.

THEO. F. LAIST.



[Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.]

A PORTION OF OSBORN HALL, NEW HAVEN, CONN. MR. BRUCE
PRICE, ARCHITECT, NEW YORK, N. Y.

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

GRACE METHODIST EPISCOPAL CHURCH, NEW YORK, N. Y.
MESSRS. J. C. CADY & CO., ARCHITECTS, NEW YORK, N. Y.

THIS church is placed on the north side of West 104th Street, near 9th Avenue. The building has a frontage of 82' on the street, and a depth to the rear of chapel of 156', the chapel portion being two stories in height. An old lane now unused on one side and the westerly line of the old Croton Aqueduct cause the irregularity in the rear portion of the lot. A rather simple treatment has been adhered to in the construction of this building, and good workmanship and material sought for in preference to any elaboration of detail. It is designed, however, to panel the front main vestibule in oak, and provide a floor in it of marble mosaic, giving an air of elegance and dignity to this part of the building. The materials for front are Philadelphia brick, with a dark brown sandstone for trimmings, the mullions of the large front window being in stone. The total seating-capacity of the church is 819. The total cost is \$55,800.

THE CATHEDRAL, PRATO, ITALY.

In the International Edition this Print appears as a Granochrome.

THE PLANS OF NETLEY CORNERS, MINNEAPOLIS, MINN. MR. J.
C. PLANT, ARCHITECT, MINNEAPOLIS, MINN.

THROUGH an oversight on our part, these plans were not published in the issue for last Saturday.

STORAGE AND WAREHOUSE DEPOSIT COMPANY'S BUILDING, MINNEAPOLIS, MINN. MR. L. S. BUFFINGTON, ARCHITECT, MINNEAPOLIS, MINN.

COXTON TOWER, ELGIN, SCOTLAND.¹

"Not one fragment of history has been preserved relating to the small but picturesque tower delineated in the accompanying illustration; and so little attention does it seem to have excited, that it is not even mentioned in any of the numerous descriptions of Scotland, although it stands out a conspicuous object in the landscape near the great north road from Aberdeen to Inverness, and is little more than two miles distant from the town of Elgin. There is, however, little reason to be surprised in this instance; for the rugged buildings of the north of Britain, instead of having been watched over or preserved, were, until recently, too frequently only so many stone quarries and stores of ready prepared timber to their proprietors, and even to strangers. But notwithstanding the neglect of history and the want of the 'long pedigree,' we do not fear any lack of interest for our few remarks on Coxton.

"For our own part we are not sorry that this building has hitherto escaped notice; had it been otherwise, we might not, perhaps, have been the first to draw attention to the existence of one entire baronial remain in Scotland, or enjoyed the pleasure of delineating one building of a most interesting class, which the hand of man has not robbed of anything belonging to the original design. The ancient fortified house we are considering wants, certainly, the walled court-yard which formerly enclosed the two of its sides upon which small and heavily-barred windows appear; but it is otherwise perfect and possesses peculiarities entirely its own.

"In general effect, Coxton resembles many Border towers, having the lower room or vault for sheltering, or rather securing, the owner's cattle against marauders, and above this the dwelling-house of the laird, comprising the scanty accommodation of three rooms and several small closets, the latter being within the substance of the walls.

"To the lower dwelling-room there was² no access from without, save by means of a ladder; and what is more singular, there is no

¹ It should always be kept in mind that these illustrations from the "Baronial and Ecclesiastical Antiquities of Scotland," (1845) by E. W. Billings, are republished very largely for the sake of giving instruction in one manner of the rendering of architectural drawings.

² An external stone stair has recently been erected.

appearance on the exterior of any means of access to the upper rooms, although there is a circular newelled stair within the substance of the wall. The sides represented in our larger plate, which were formerly protected by the walled court, have rather a cheerful expression: and the pretty hollow corbelled and cabled open turret, from whence a parley might be held, has a character perfectly unique. But the opposite angles are sufficiently dismal, and were rather to be avoided by the stranger in former times, for not a window or opening appears in the walls, excepting so many port-holes for arrows or musketry.

"In many of the old Border towers and larger castles we have vaulted rooms; and indeed, in general, all the apartments on the ground-floors of this class of buildings are vaulted. Sometimes the upper room is also arched, and there is one instance (at Burgie) where the two upper stories are by this means protected from combustion. But Coxton is entirely fireproof; and excepting its two external doors, which are backed by massive gates of cross-barred iron, no wood whatever is used in the whole building. Neither is there a slate, for the whole roof is stone, forming on the exterior a sloping line and internally a high-pitched pointed arch. The same fireproof construction is applied even to the covered turrets at the angles.

"When we consider that every floor is a heavy semicircular stone vault, the absence of external buttresses naturally forces itself upon our observation. No defect, however, has resulted from this, for by an admirable contrivance they are rendered unnecessary—the floors are vaulted at opposite angles. Thus, if the sides of the lower-room arch stand east and west, those of the arch immediately above are north and south, and so they keep alternating. By this simple arrangement, the weight of one floor or vault acts as a counterpoise to the arch beneath; and the efficiency of this construction is evinced by the state of the building. Not a crack is visible; and we predict that, until the stone disintegrates, the castle will stand.

"Within the rooms is a singular provision for communication, perfectly independent of the staircase. In the centre of each floor is a square stone, fitted into a groove. These stones, when lifted up, show an opening from the summit to the base of the tower, and by the aid of a rope and pulley the requirements of its inmates might be attended to, and all the inconveniences of carriage up the narrow staircase avoided.

"Our notice of Coxton commenced by stating that it has no historical record. There is, however, over its principal doorway, a large carved stone containing some time-worn initials and armorial bearings, and the date 1644. This has been inserted in the building at a period considerably later than that of its construction; and, judging from parallel examples of style, we should be inclined to fix the foundation of the tower fully a century earlier than this date."

CRAIGSTON CASTLE, ABERDEEN, SCOTLAND.¹

"This broad, square mass of building has some features in common with Fyvie, from which it is but a few miles distant. The high, deep arch joining the two towers, or wings, is one of these points of resemblance; but, in the general outline, Craigston wants the multitudinously spiral summit which gives so light and rich a character to its neighbor, and is conspicuous for a massive plainness of outline, which appears to have been a prevailing aim with the architect, as he had laid in the corbels of square turrets at the corners, but appears to have changed his mind, abstaining from conferring on the building the light, aerial effect of these terminations. Though thus severe in its outline, however, the edifice is not undecorated. Over the top of the arch, and from the one tower to the other, stretches a border of grotesque statuary. The inside of the castle is remarkable for a spacious hall, now converted into a handsome drawing-room, containing numerous specimens of curiously carved oak panelling, of the same age as the building, and the remains of its original decoration. These present the effigies of a very miscellaneous assemblage of heroes, kings, cardinal virtues and evangelists. Among others, one room contains the sovereigns of the Stuart family down to James VI; and another, the carved likeness of Prince Henry, the heir to the crown when the castle was erected; also of his brother, Prince Charles, both being represented as children. . . . Among the pictures in the castle are three by Jamieson; of these, one is a portrait of General David Leslie; another, that of William Forbes, Bishop of Edinburgh; and the third, that of Sir Alexander Fraser, of Philorth. There are also portraits of the last four members of the family of Stuart; namely, James, Prince of Wales, and his princess, Clementina Sobieski, with their sons, the Prince Charles Edward, and Henry, Cardinal of York. These, with full-length pictures of the last Earl Marischal, and of Captain John Urquhart, of Cromarty and Craigston, are originals, and painted about the year 1735 by Francesco Trevisani, an eminent portrait-painter of Rome."²

"The domain of Craigston appears to have belonged of old to the family of Craig, from which Sir Thomas Craig, the celebrated feudal lawyer, was descended.³ Of the building of the castle there is

a very distinct account cut in a stone in front, in the following terms: 'This vark foyndit y^e fourtene of March, ane thousand sex hunder four zeiris, and ended y^e 8 of Decemb^r 1607.' Before this event, the estate appears to have passed from the family of Craig to a cadet of that of Urquhart of Cromarty. It appears to have been erected by the same John Urquhart, to whom Arthur Johnstone dedicated the following epitaph:

"Oecidit Urchardus, quo nemo beatior, aevi
Jam fatur, et famulas quas sibi fecit, opum.
Posteritas, cui liquit agros et prœdia, disce
Illius exemplo vivere, disce mori."⁴

"The proprietor of Craigston, at the time when the castle was built, is frequently mentioned in local history as 'The Tutor of Cromarty.' So complete a supremacy attached to the head, genealogically speaking, of a family at that period, that the most honorable title by which an uncle belonging to a junior branch could be named was by his office of tutor to the young heir, incident to his relationship. The individual to whom the Laird of Craigston thus acted as tutor was no ordinary man—Sir Thomas Urquhart, the author of several strange works with long Greek names, the translator of Rabelais, and the narrator, if not the inventor, of the incidents which form the biography of the wonderful Admirable Crichton.

"The connection of its inmates with this erratic genius is, perhaps, the most remarkable instance that has to be recorded about this unobtrusive mansion. If we may believe his own statement, his early progress did much credit to his uncle's guardianship; for, when describing his companions as absorbed in the field-sports of the age, he says: 'I was employed in a diversion of another nature, such as optical secrets, mysteries of natural philosophie, reasons for the variety of colours, the finding out of the longitude, the squaring of a circle, and wayes to accomplish all trigonometrical operations by sines without tangents, with the same compendiousness of computation, which, in the estimation of learned men, would be accounted worth six hundred thousand partridges, and as many moorfools.'⁵

"The work by which Sir Thomas Urquhart is best known to the world is his 'Jewel,' in which he arranges the chronology of the history of the world by 'deducing the true pedigree and literal descent of the most ancient and honorable name of the Urquharts in the house of Cromarty since the creation of the world until the present year of God 1652.' It has often been supposed that, being written by the translator of Rabelais, the 'Jewel' is a satire on the flagrant genealogies of the seventeenth century; but there is far better reason for believing that it has been dictated by inordinate and almost insane self-conceit. The first thirty-nine names in the genealogy are founded on that scriptural pedigree, the greater part of which contains the common ancestors of all the world, and it is in the year 1810 of the world's age, and 2139 before the Christian era, that the house of Urquhart branches forth in the person of 'Escrinon,' married to 'Narfesia.' 'He was sovereign prince of Achaia. For his fortune in the wars, and affability in conversation, his subjects and familiars surnamed him *αγοραγορος*,⁶ that is to say, fortunate and well-beloved. After which his posterity ever since hath acknowledged him the father of all that carry the name of Urquhart. He had for his arms, three banners, three ships and three ladies in a field or, with a picture of a young lady above the waste, holding in her right hand a brandished sword, and a branch of myrtle in the left, for crest; and, for supporters, two Javanites, after the soldier habit of Achaia, etc. Upon his wife Narfesia, who was sovereign of the Amazons, he begot Cratynter.'⁷

"Such, if we credit the head of the house, was the origin of the family, a descendant of which still inhabits this mansion."

[Additional Illustrations in the International Edition.]

FOUNTAIN IN THE GARDEN OF THE GRAND TRIANON, VERSAILLES, FRANCE.

[Etching.]

TOMB OF THE MOLPURGO FAMILY, TRIESTE, AUSTRIA. HERR RENDIC, SCULPTOR.

[Gelatine Print.]

CITY-HALL, TRIESTE, AUSTRIA. HERR BRUNI, ARCHITECT.

[Gelatine Print.]

BEATEN BRASS DOOR: HOUSE FOR MR. E. LONG, R. A., HAMPSTEAD, LONDON, ENG. MR. R. NORMAN SHAW, ARCHITECT.

ENTRANCE: HOUSE FOR MR. E. LONG, R. A., HAMPSTEAD, LONDON, ENG. MR. R. NORMAN SHAW, ARCHITECT.

¹ It should always be kept in mind that these illustrations from the "Baronial and Ecclesiastical Antiquities of Scotland," (1845) by R. W. Billings, are republished very largely for the sake of giving instruction in one manner of the rendering of architectural drawings.

² Hay's "Castellated Architecture of Aberdeenshire," 100, 102.

³ Tyler's "Life of Craig," p. 2. Collections on the Shires of Aberdeen and Banff," p. 461.

⁴ Delitine Poet. Scot., 1, 618.

⁵ "Introduction to Works," p. 7.

⁶ So printed in the collected edition.

⁷ "Works," p. 156.

ST. ANDREW'S CHURCH, BRECHIN, SCOTLAND. MESSRS. ROSS & MACBETH, ARCHITECTS, INVERNESS, SCOTLAND.

THE outlay on the building, so far as executed, is about 6,000*l.*, but 1,000*l.* is still required to finish the tower and spire, etc. The building is executed of a warm gray freestone. The columns of nave are of red granite, and the inside walls faced with a warm red stone. The aisles are only four feet wide, and serve as passages, an arrangement which is found both convenient and effective, as giving the greatest nave space and view of the altar.

ROUX, FROM MOUNT ST. CATHERINE, AFTER A DRAWING BY JOHN SELL COTMAN.



[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 DIPLOMA AND A LICENSE FOR PRACTISING ARCHITECTURE.

TO THE EDITORS OF THE AMERICAN ARCHITECT:

Dear Sirs,—A diploma entitling one as an architect can best be accomplished by comparison—that is, a competition in design out of which, say, 50 per cent of the best would be selected. This diploma would be very useful for draughtsmen to readily obtain good positions; though they should not be allowed to practise architecture unless they have a license which could only be obtained by a fixed technical examination, to be participated in only by those having a diploma.

A technical examination to ascertain the capability to practise architecture is not sufficient—a test in design should be considered first, as it is the essential: without that ability he cannot be an architect, and only those who possess this quality can rightly enter a technical or scientific examination entitling them to practise.

Those who at present practise architecture should be given a license at once without the process of competition and examination, though the license thus obtained should hold good only an equal number of years to which they have been in practise; though they be allowed at any time to contest for a diploma and license if they wish to show their ability to do so, or to avoid a delay when their license has run out.

NICHOLAS GILLESHEIMER.

KELLER VS. THE N. Y., N. H. & H. RAILROAD.

TO THE EDITORS OF THE AMERICAN ARCHITECT:

Dear Sirs,—Your editorial notice of the settlement of my suit against the New York, New Haven & Hartford Railroad Company is inaccurate in some points. My claim against the railway company was not because Messrs. Shepley, Rutan & Coolidge substantially appropriated my design, but that the railway company made use of plans made by me in Hanover, Germany, and were greatly benefited thereby, and then denied having used them, and refused to compensate me.

I produced in court an enlarged sworn copy, on tracing-cloth, of the plans used by the railway company, which, when placed against the window-pane of the court-room over a tracing of my plan, the two appeared as if but one, the lines coincided so exactly. At this the defence immediately offered to compromise, though previously the company refused point-blank to pay me a cent. As I am not a whole railroad company, and cannot afford to retain a swarm of lawyers, I was driven to accept their offer, and to submit to an injustice that I could not afford to struggle against.

I trust you will give this letter a place in your widely-read journal.

Respectfully,

GEORGE KELLER.



FINDS AT LYCOSURA.—Dr. Waldstein writes from Athens to the correspondent of the London *Times* in Rome, Mr. Stillman, that the excavations of Mr. Cavvadias at Lycosura last summer have resulted in the discovery of the fragments of the group of Demeter and Despœna (Persephone) described by Pausanias (Arcadia VIII, 37), as he saw them in the Temple of Despœna, the statues and the throne on which they sat being of one piece of stone carved by Demophon. He says: "There can be no doubt that the temple he has excavated is that of Despœna, as described in Pausanias. The inside of the nave measures ten metres, and at the west end is almost (to about eight metres) taken up by the throne, upon which, according to Pausanias, were four figures—Demeter and Kore, with Artemis and Anytos. Of these statues nearly all the fragments apparently have been recovered.

There are over a hundred fragments, most of which have already been brought here, though not unpacked and not visible to the public, while some of the torsos were so large that they could not be transported on the roads that exist there. Special arrangements will be made for transporting them soon. There are also a number of smaller figures, which apparently belong to the decorations of the thrones. All these are of excellent workmanship, pointing to the close of the fourth century *n. c.*; but what most struck me were some large fragments of drapery belonging to these colossal figures. The folding is beautifully free, and one piece is decorated with figures of Niké and Tritons in very flat relief, reminding one of gold repoussé work. There is one still larger fragment with flowers worked in similar relief. There can be no doubt that all this class of work is a reminiscence of the Greek gold and ivory statuary carried over to the marble work of the fourth century. I saw some five small figures, about one and one-half feet high, the bodies ending in fishes' tails, carrying large baskets on their heads, similar to the one, the large figure from Eleusis, in the Fitzwilliam collection at Cambridge has on her head. Cavvadias thinks that these were supports to the throne. I am not quite satisfied about this. We may hope to be able to complete nearly the whole composition. What makes this one of the most important discoveries yet made is that we have here an original *agalma*, a genuine temple statue of a good Greek period which we can identify with a noted artist, Demophon of Messene, the most celebrated artist of that city, who flourished about the one hundred and second Olympiad."

WORKING-HOURS ABROAD.—A Turkish working-day lasts from sunrise to sunset, with certain intervals for refreshments and repose. In Montenegro the day-laborer begins work between 5 and 6 in the morning, knocks off at 8 for half an hour, works on till noon, rests until 2, and then labors on until sunset. This is in summer. In winter he commences work at 7.30 or 8, rests from 12 to 1, and works uninterruptedly from that time to sunset. The rules respecting skilled labor are theoretically the same, but considerable laxity prevails in practice. In Serbia the principle of individual convenience rules in every case. In Portugal from sunrise to sunset is the usual length of the working-day. With field laborers and workmen in the building trades the summer working-day begins at 4.30 or 5 in the morning and ends at 7 in the evening, two or three hours' rest being taken in the middle of the day. In winter the hours are from 7.30 to 5, with a shorter interval of repose. In manufactories the rule is twelve hours in summer and ten in winter, with an hour and one-half allowed for meals. Eleven hours is the average day's labor in Belgium, but brewers' men work from ten to seventeen hours; brickmakers, sixteen; the cabinet-makers of Brussels and Ghent are often at work seventeen hours a day; tramway drivers are on duty from fifteen to seventeen hours, with an hour and one-half off at noon; railway guards sometimes know what it is to work nineteen and one-half hours at a stretch, and in the mining districts women are often kept at truck-loading and similar heavy labor for thirteen or fourteen hours. The normal workday throughout Saxony is thirteen hours, with two hours allowance for meal-taking. In Baden the medium duration of labor is from ten to twelve hours; but in some cases it far exceeds this, often rising to fifteen hours in stoneware and china works and cotton-mills; in saw-mills to seventeen hours; while the workers in the sugar-refineries, where the shift system is in vogue, work for twenty-four hours and then have twenty-four hours free, and in too many of the Baden factories Sunday work is the rule. In Russian industrial establishments the difference in the working-hours is something extraordinary, varying from six to twenty. It is remarkable that these great divergences occur in the same branches of industry within the same inspector's district and among establishments whose produce realizes the same market price.—*Chambers's Journal*.

FUTURE OF GLASS IN MECHANICS.—In a recent attempt to determine the place that will ultimately be occupied by vitreous substances in mechanics, it is stated that M. de la Basile, a French chemist, has, during the past few years, conducted a series of experiments which have resulted in a method of rendering glass sufficiently tough for use in moulding many articles hitherto made of iron. It is premised that the huge, sub-Atlantic, pneumatic tube, for the connection of the old with the new world, the suggestion of which was received with indifference and incredulity some time ago, many eventually turn out to be not so chimerical as at first glance it was judged to be. A glass car fitted into a tube of the same material would spin away at an incredibly fast rate. No appreciable heat would be generated, and the great hardness and smoothness of the material would greatly lessen the retarding influence of friction, which will be one of the most important considerations in all systems of future rapid transit.—*New York Commercial Advertiser*.

MARBLE IN OREGON.—The find which has been recently reported of an extensive body of a rare species of variegated marble, resembling onyx, in Douglas county, in the southern part of Oregon, is a very remarkable one. The vein has been traced for thirty miles, and already a marble-cutting mill run by water-power has been set in operation, capable of cutting slabs of three to six feet square, of any thickness. The marble shows itself in immense tiers, one above the other, perfectly bare, to a height of 500 feet. From these wonderful cliffs of pure marble any sized blocks can be quarried without a week's work in clearing.—*Pittsburgh Dispatch*.

LIFTING A RIVER.—A triumph of engineering is reported from California in the lifting of the Feather River, a fast-flowing stream, fifty feet, and carrying it for more than half a mile, in an artificial bed, at that height above its old channel. It has been accomplished in a little less than a year. The object was to drain the river near Oroville, in order to reach the rich gold deposits believed to exist in its bed.—*New York Commercial Advertiser*.

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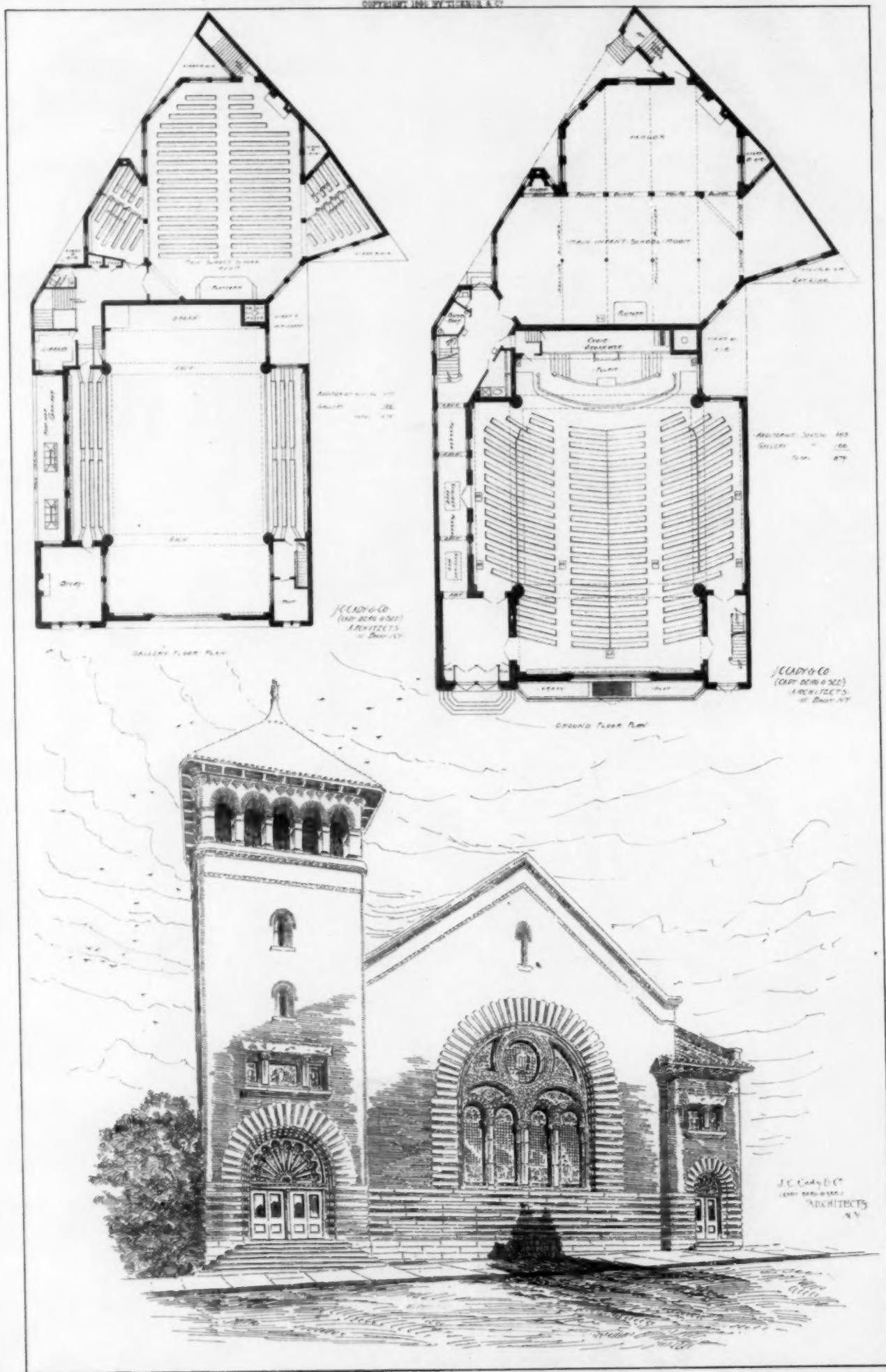
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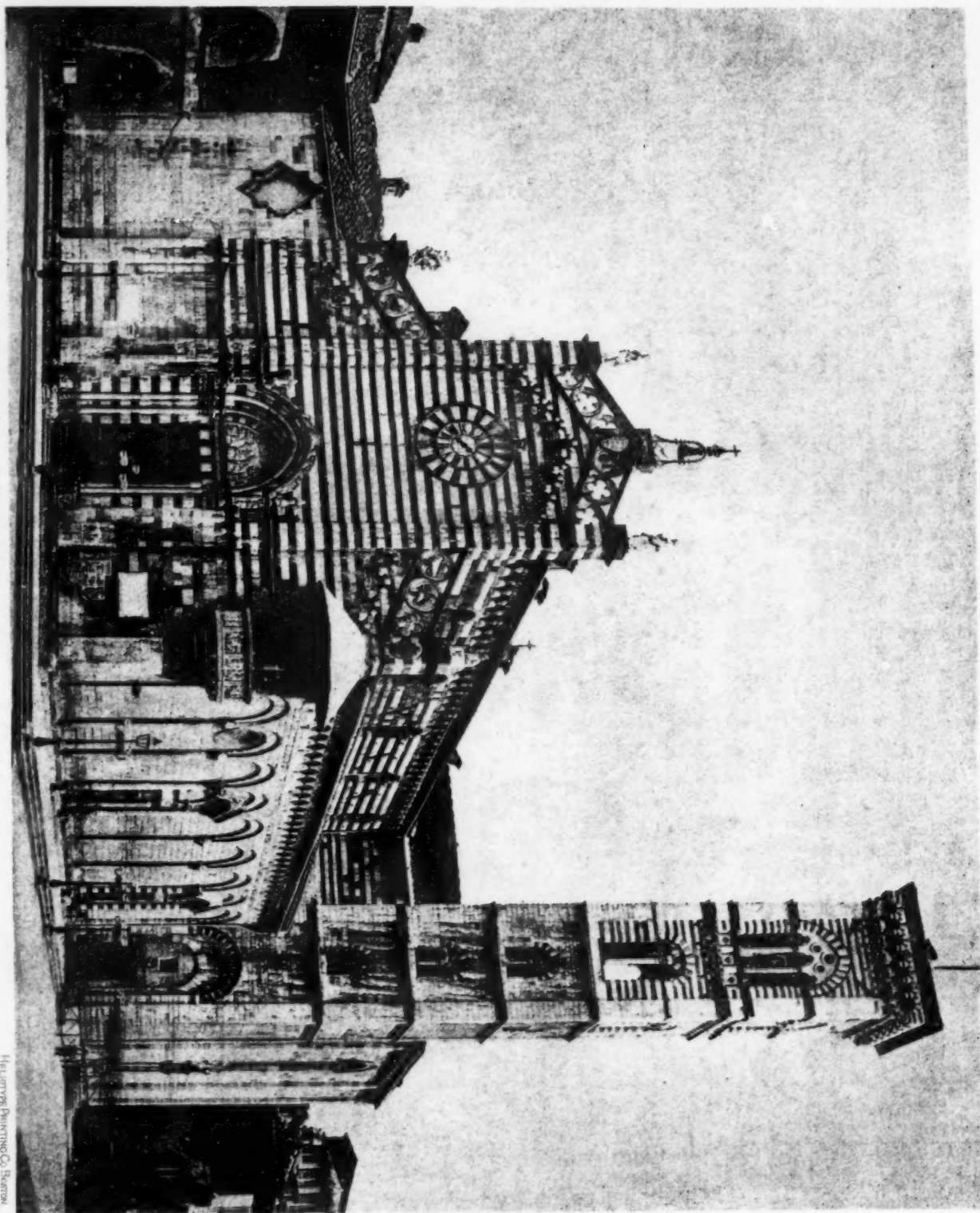
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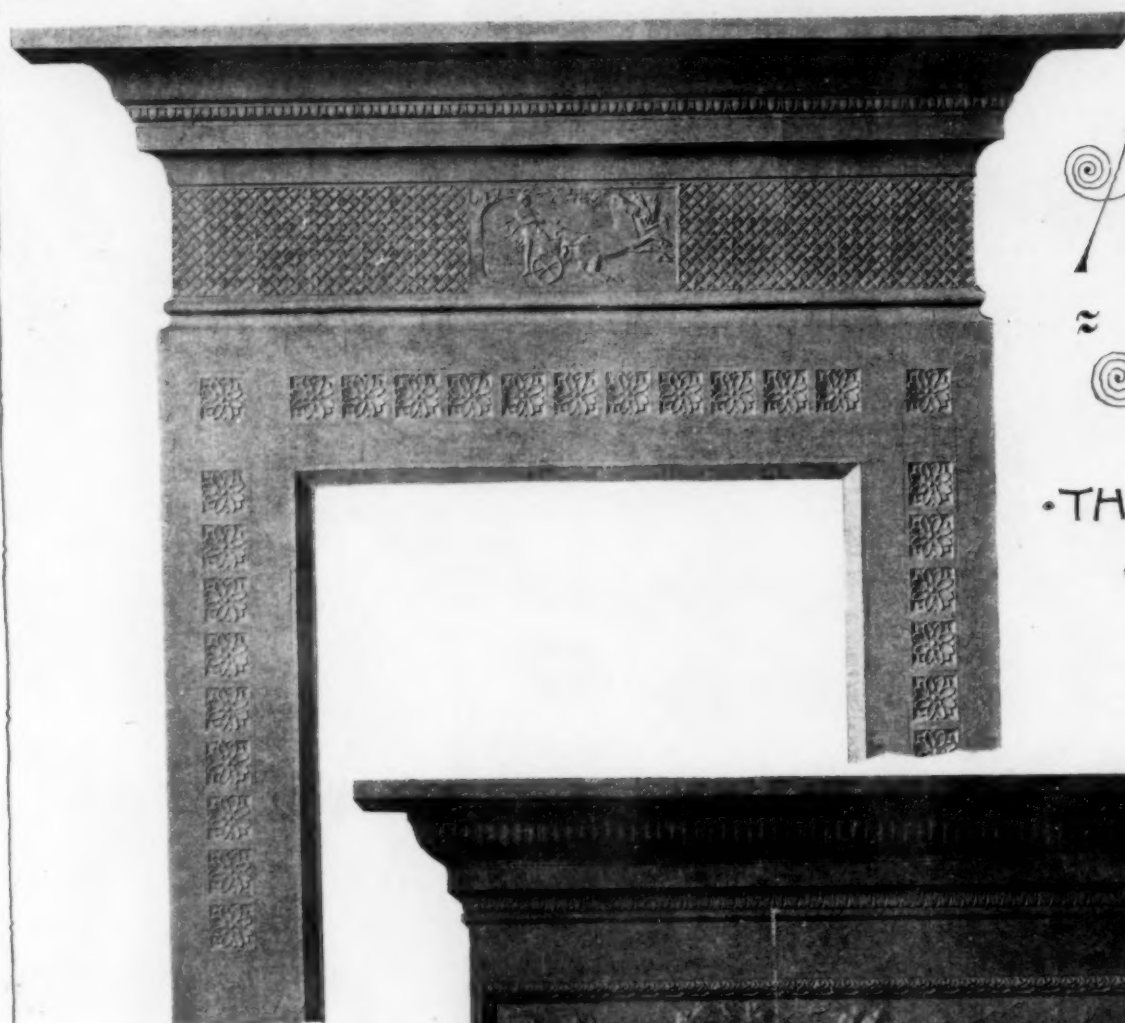
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This is a detailed architectural floor plan of the second floor of the New York Public Library. The plan is symmetrical around a central 'Public Hall' which features a large circular staircase. To the left of the hall, there are several 'Reading Rooms' and 'Study Rooms', along with a 'Library' and a 'Reference' section. To the right, there are more 'Reading Rooms' and 'Study Rooms', as well as a 'Library' and a 'Reference' section. The plan also shows various smaller rooms, including 'Bath', 'Clo.' (Closets), and 'Halls'. The overall layout is designed to provide a quiet space for study and research.

This is a detailed architectural floor plan of the second floor of a building. The plan is oriented with the entrance at the top. The layout is symmetrical, with a central corridor and two main wings. The rooms are labeled as follows:

- Top Wing (Entrance):** Includes a 'Bedroom' (top left), a 'Bathroom' (top right), and a 'Living Room' (center top).
- Middle Wing:** Features a 'Kitchen' (center left), a 'Dining Room' (center right), and a 'Living Room' (center bottom).
- Bottom Wing:** Contains a 'Bedroom' (bottom left), a 'Bathroom' (bottom right), and a 'Living Room' (bottom center).

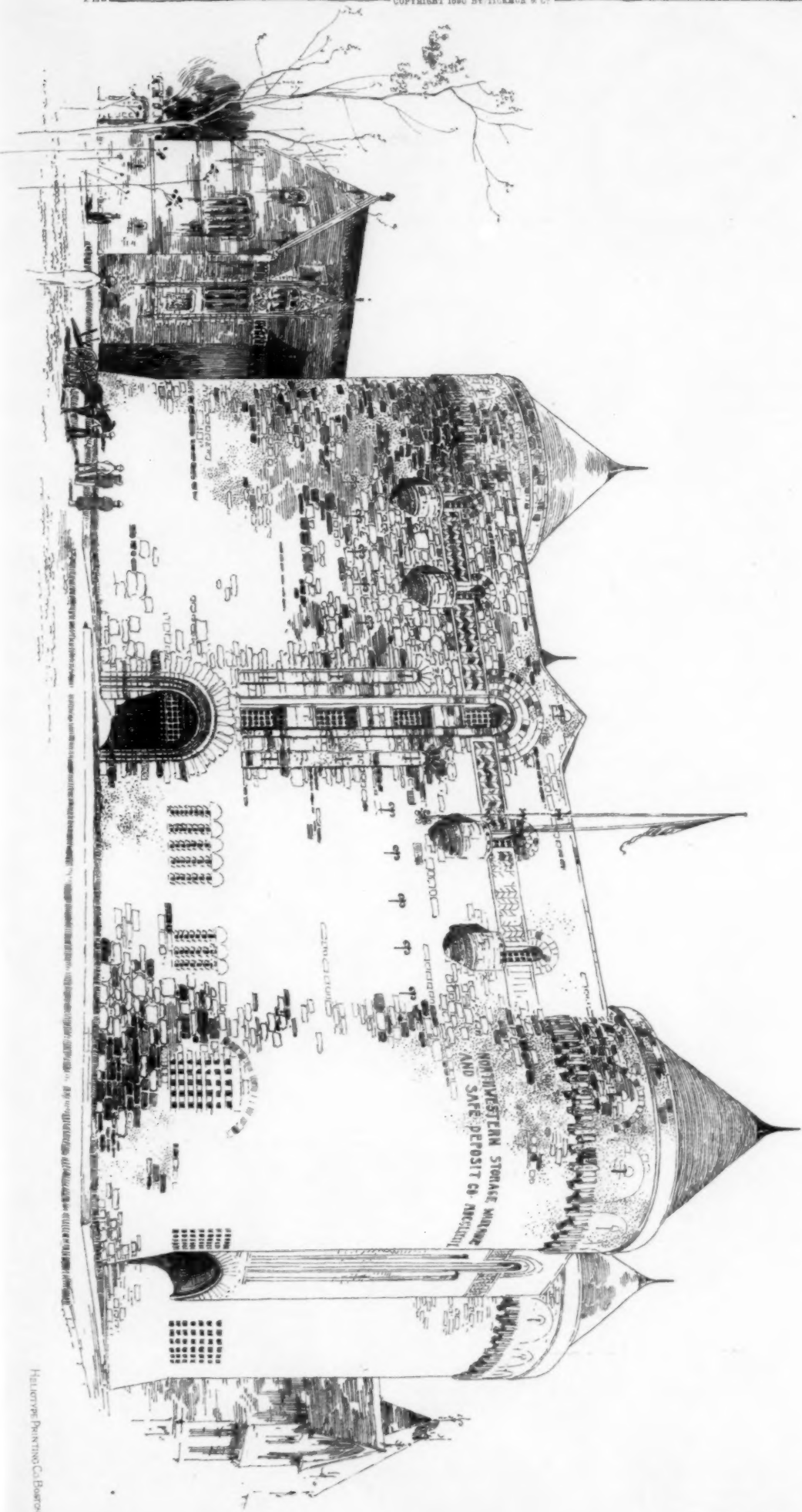
The plan also shows numerous smaller rooms, corridors, and staircases, indicating a complex and multi-level structure. The drawing is a black and white line drawing, typical of architectural plans.

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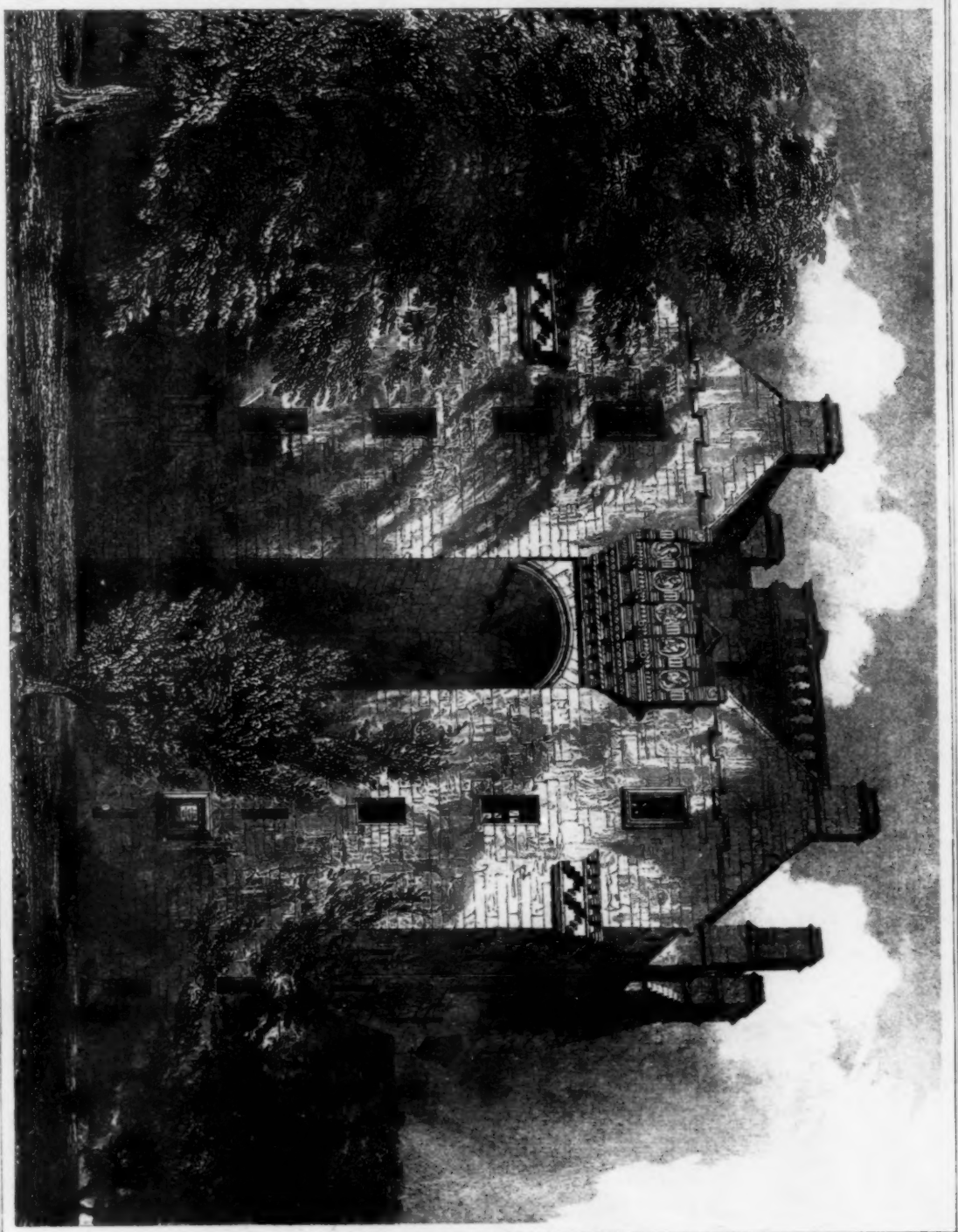
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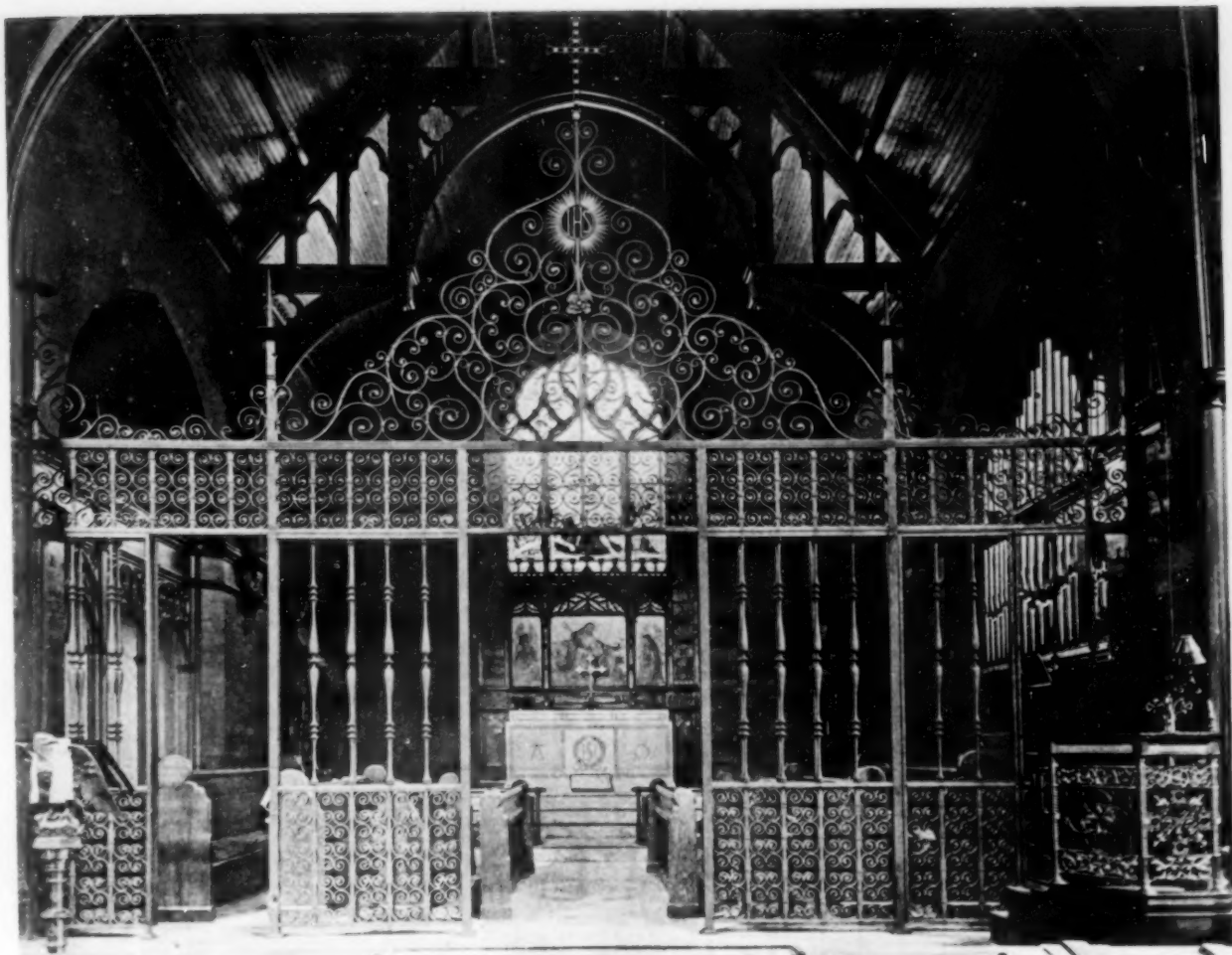


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