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APRIL 28, 1894.



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EVERY fire which affects one of the great protected metal structures of the present day teaches us an important lesson as to the resistance of such structures to fire, and the points in which that resistance can and should be strengthened. A week or so ago, the Athenæum Building in Chicago, an old four-story structure, with wooden beams, took fire and was nearly destroyed. The rear of this building nearly adjoins the side of the Schiller Theatre, a new sixteen-story structure of steel, covered on the outside with hollow tile, in imitation of stone ashlar. The smoke and flame from the Athenæum naturally poured up against the side of the Schiller Theatre, and through the upper windows, setting fire to some of the wood finish in the upper rooms. The fire-engineers, fearing what might happen if the sixteen-story building should get thoroughly ablaze inside, kept a large force of men in it, with hose and chemical fire-extinguishers, and, at the same time, kept the outside cool with streams of water. In thirty minutes, the fire in the Athenæum was subdued, and that in the upper rooms of the Schiller Theatre was soon extinguished, but the combined effect of the fire and water had been to break away the hollow-tile covering of the outside, so that in some places the steel framework was exposed. The framework itself, however, was not at all injured, and the comment of the Chicago architects, which seems to be approved by the insurance experts and fire-engineers, is that, if the tile had been applied in two layers, so that, after the outer one had been destroyed, the inner one would still remain, it would have taken a very long-continued and hot fire to affect the structure from the outside. Whether the fire inside would have burned itself out quietly, if the firemen had let it alone, is not so well settled. The opinion of the architects seems to be that, the rooms having nothing combustible in them but the wood finish and light furniture, these might have been left to burn out; but the fire-engineers maintain the correctness of the opinion on which they acted—that if means had not been taken to extinguish the internal fire, the upper part of the building, at least, would probably have been destroyed.

EVERY member of the Institute, and hundreds of people outside the profession, will hear with regret of the death of Mr. W. W. Carlin, of Buffalo, a former President of the Western Association of Architects, and of the New York State Chapter of the Institute, and first Vice-President of the American Institute of Architects. Mr. Carlin, like too many architects, died in the very flower of his age and usefulness, not having reached his forty-fourth birthday. He was a country-boy, having been born near Chautauqua, in November, 1850.

He studied his profession in the office of J. W. Smith, of Jamestown, and practised extensively in the principal cities of Western New York. As an architect, he was noted for his solid and sensible design, and his skill in construction, and was entrusted with a large number of important buildings. His professional reputation, with his unselfish willingness to do what he could to help his fellows, and his excellent judgment, early pointed him out for high office in professional circles. As the President, and most influential member, of the Buffalo Chapter of the Institute, he was mainly instrumental in securing the passage, through both houses of the New York Legislature, of the bill for the examination and licensing of architects, which failed to become a law only through the veto of Governor Flower. Personally, Mr. Carlin was one of the few men who inspire confidence and regard from the first in all who have anything to do with them. Earnest as he was in most things, particularly in matters affecting the interests of the profession, no personal or party feeling ever warped his clear understanding, or obscured the modest consideration for other people which endeared him to all his associates, whatever might be their way of thinking. In his death the profession in America has lost one of its most valuable members, and his memory will long be cherished in the Institute.

WE quoted not long ago the editorial opinion of the Boston *Herald* on the Burnham-Carlisle correspondence, to the effect that Mr. Burnham's now celebrated letter, far from meriting the indignation which Mr. Carlisle devoted to it, was simply a truthful summary of the evasions with which the reasonable representations of the officers and committee of the American Institute of Architects had been met by the Treasury Department. The New York *Sun*, which, whatever may be thought of its politics, is, in many respects, the most intelligent newspaper in the country, speaks of the matter in the same vein as the *Herald*, declaring Mr. Burnham's letters to be "entirely justifiable." The *Sun* goes on to say that "Mr. Carlisle cannot dismiss the question merely because he is angry. Enlightened public opinion is with the American Institute of Architects, and against the Administration, in this matter." As to the abuses which the Institute is trying to have terminated, and which the Secretary of the Treasury is trying to perpetuate, the *Sun* says, with its usual force, "The damage done to the public taste by the vile standard established and maintained by the Federal architects, so-called, is incalculable. The money wasted in the construction of the hundreds of costly Post-offices and Custom-houses, drearily commonplace, or startlingly repulsive, according to accident, is nothing in comparison with the permanent injury inflicted upon this generation, and succeeding generations, by the constant contemplation of these degrading objects." This is certainly to the point, but, vigorous as is the language in which the *Sun* expresses its opinion, what it says is true; and the fact that it should be true is all the more to be regretted, from the fact that this country is rapidly advancing toward the rank of the most artistic country in the world. The architects, artists and sculptors of the United States, if they had such opportunities as are afforded their fellows in all other civilized nations, could produce buildings which would vie in beauty and splendor with any in the world; yet, after the necessary legislative action has been secured, one man, out of pure caprice, for the Burnham correspondence shows conclusively that there is no reasonable excuse whatever for not putting the Tarsney law in force, chooses to stand between his country and the artistic glory which awaits it, and to condemn this generation, so far as lies in his power, to be represented to posterity by the clumsy, ill-planned, badly built and enormously expensive structures on which such vast sums of public money have been spent, rather than by such work as our architects do for private clients. Private information leads us to believe that Mr. Burnham regrets the necessity he was under to use plain words, and that Mr. Carlisle no less sincerely regrets that he created the necessity for using them. This being so, and since a public servant can acknowledge a mistake with less discomfort than can a private individual, it seems perfectly possible that the correspondence should be expunged from the record and negotiations again taken up at the point where the correspondence began.

THE Association for the Promotion of Profit-sharing, of which Hon. Carroll D. Wright, of Washington, is President, and General Francis A. Walker, of Boston, Mr. Henry R. Towne, of the Yale & Towne Lock Company, are two of the Directors, has issued a letter, inviting the attention of manufacturers to the importance of introducing some form of profit-sharing as a feature of their industrial relationships. As many factories and mills are now resuming work, after a long period of idleness, the time chosen for the issue of the letter is a very happy one, and it is much to be hoped that it will receive earnest attention. The Association, we are glad to see, puts its recommendation on the high ground of the importance of promoting a greater community of interest, and more friendly relationship, between employers and employed, and offers to give detailed information in regard to the working of the system in various establishments in this country and abroad, to any one who will take the trouble to apply for it to the Secretary, Mr. N. P. Gilman, 25 Beacon Street, Boston. Mr. Gilman is well known as the author of an excellent book on the history of profit-sharing, and it would be hard to find any one better qualified to indicate examples to be followed, or to give advice on the subject. Although we agree with the Association that the main thing to be kept in mind in the discussion of profit-sharing is the restoration of friendly confidence between employers and employed, too long estranged, it is worth pointing out that the first effect of the revival of this confidence is to disconcert the schemes of the politicians and socialist demagogues who have reaped such a rich harvest from their efforts to set up "workingmen" as a class apart from the rest of the world. Where profit-sharing exists, the walking-delegate and the socialist spouter find no place, and it is not surprising that, where the system has begun to secure an extensive foothold, the air resounds with the denunciations of the "champions of labor," who see their political influence, and their comfortable incomes, fast vanishing.

THE immense multiplication of appliances for the electrical transmission of force in and about our cities has led to some curious consequences, and is likely to lead to very serious ones. Every one knows that electrical currents move only in circuits, and that in order to obtain any electrical manifestation at any point, there must not only be some means of conducting the current from the generator, but a means of conducting it back again to the place that it started from. In all the earlier electrical installations, the earth was used as a great universal conductor for return currents, the "grounding" of the wire, after utilizing the current from it, being considered the only thing requisite for maintaining the continuity of the circuit through the generator, which had also its ground-wire for, so to speak, pumping up electricity from the common reservoir—the earth. Now, however, the earth, which conducts with comparative slowness, cannot be advantageously used to carry return currents for many sorts of apparatus, and "metallic circuits," in which the return current, as well as the outward current, is conveyed by copper or iron wire, are used for many purposes, of course at an increased cost. For the return currents of electric railways, it has been common to have two modes of conveyance, one through the rails, connecting these by metallic straps or wires, and another through continuous copper wires, laid between the rails. Both these together are, however, as commonly arranged, insufficient to convey the enormous currents which return along a line of electric railway, and the electricity continually leaks away, in search of an easier and less crowded road back to its source. It is apt to find this in the water and gas mains which pass near the tracks, and the consequence is that strong currents often pass through the mains into the earth, while the mains themselves, owing to the resistance which the current encounters in leaving them, are charged with electricity to an extent which may become dangerous, particularly as the ramifications of the mains, which extend into the houses supplied by them, partake of the charge. One of the electrical inspectors for the Boston Board of Fire Underwriters reports that he frequently finds water and gas pipes in houses in such a condition, owing to one of them having taken up an electric current at a point, perhaps, miles away, that a strong current will pass between them if they are either purposely or accidentally connected by a piece of wire. In one case, where the two sets of pipes came within a foot of each other,

the current obtainable in this way was strong enough to give a spark which would set fire to cotton-waste; and many ingenious residents on the lines of the electric railways, as he says, have put in electric-bells, electric gas-lighting apparatus, and so on, availing themselves of the current which they could obtain gratuitously by tying the supply-wire around a gas or water pipe. If the waste of the current were the only harm done, perhaps no one but the stockholders of the railway company need complain; but the leakage currents in the gas and water mains rapidly corrode them, so that large pipes have been eaten entirely through in three months. In one case, where a gas and a water pipe were brought into frequent contact by the jarring of an elevator, the gas-pipe was not only nearly corroded through, but a bright spark passed at every contact, so that, as soon as an orifice had been made through which the gas could escape, the gas would have been set on fire.

A GERMAN doctor is said to have been experimenting on the navigation of the air in a way which must give him a valuable personal sensation of the capacity of the atmosphere to support weight. The apparatus that he employs is very simple, consisting of a light frame covered with cloth, and with a hole in the middle, through which he puts his head and arms, while straps confine the affair in a suitable position just under his arms. It would appear that no provision is made for flapping these artificial wings, and the muscular power of a man's arms, even if assisted by his feet, as was provided for in an apparatus devised a hundred years ago or more, would be hardly adequate to raising his body into the air with any sort of artificial wings; but, instead, the surface of the cloth-covered frame is formed in peculiar curves, which experience has shown to be suited for making the buoyant power of the atmosphere available. Equipped with this apparatus, the doctor is said to take a start by running a short distance down a steep hill. After a run of a few minutes, he finds himself lifted off the ground by the air, and can then soar for a long distance before alighting. With favorable conditions of wind, he is said to have made in this way a flight of nearly a quarter of a mile, reaching a height of ninety feet or more above the ground. The account is well authenticated, and we feel justified in commending experiments of the sort to the attention of other investigators who are not troubled with nervousness. In relation to the general problem of aerial navigation, these attempts have great value in determining the conditions affecting what, as it seems to us, will be the most practicable mode of navigating the air—that is, soaring from a height, attained by some other means than that used for forward propulsion. It is evident that, if the air-ship of the future can be raised, at starting, a mile vertically into the air, a voyage of a hundred, or even a thousand miles from that point can be made with the employment of very little force beyond that of gravitation, and, if this preliminary raising can be effected by means, so to speak, outside of the craft itself, an immense freight of machinery, which would otherwise be necessary to lift the vessel, could be dispensed with. By the employment of hydrogen gas, used solely for this temporary purpose, it would be easy to lift the air-ship to the requisite height, and start her on her voyage, while stores of hydrogen, compressed into steel cylinders, could be carried along, for use in case it should be necessary to take a fresh start in the course of the voyage. In this way, a large part of the work of driving the vessel, say across the Atlantic, would be done on *terra firma*, without, as it seems to us, any loss of security to passengers, but rather the reverse, as the vessel would be lightened of a huge load of engines, boilers and fuel.

THE Town-hall of Palma, the capital of the Balearic Islands, was destroyed by fire a few weeks ago. Palma has within the last few years become tolerably well known, through books written by enthusiastic tourists, and by the verbal accounts of other tourists, who, in consequence of the books, have visited the place; and all the visitors have something to say about the Town-hall, or Ayuntamiento, with its rich sculptures, and its huge, carved, wooden cornice, projecting ten feet over the street, and carried by a row of brackets in the shape of human figures. The building dated from the sixteenth century, and contained a splendid picture, by Vandyke, of the Martyrdom of St. Sebastian, besides a curious collection of portraits of Balearic notables.

STYLE.¹—I.

STYLE, especially in architecture, has been but little studied from a philosophical standpoint; this is because artists seldom write, and also because writers are deterred from undertaking the subject by their lack of familiarity with its technical difficulties.

The geographical position of a people offers necessities whose influence is felt upon its morals as well as in its social and political interests, forming by an *ensemble* of certain qualities and certain defects what is called a national character. Artists are far more susceptible to these influences than the majority of the nation and it is chiefly among them that we find exaggerated expressions of the national character. In southern countries this character almost always bears the stamp of indolence and of contemplativeness, carried even to dreaminess. The artist who daily experiences the languishing effects of perpetual sunshine, in a land where fragrant spring and autumn with her sweet fruits seem to divide the year between them, beholds the sun toning into harmony the most vivid colors and giving to the slightest projections a vigorous relief; he contemplates the simplicity of lines so in consonance with the calm of a cloudless sky; he finds that the lightest sound acquires a charming intensity in the pure atmosphere; in short, the sun himself becomes man's accomplice here, forcing nature to surrender her treasures and relieving him of the trouble of seizing them. It is easy to understand how man, surrounded by such favors, should have but little love for those labors of analysis which philosophy would demand; he is content with what he sees, with what he hears, with what is about him, and, in these admirably prepared surroundings, he is born an artist, consulting in dainty fashion the ever open book of gracious Nature and impressing his art with the same sense of ease and abundance. Among the people of the North, the national character is something very different. Here, man and artist are laborious, industrious, inquisitive and prudent even to an unreasonable extent; they have all the excellences of the southerner's defects and all the defects of his excellences. Obligated to battle with the inclement weather of all seasons, the man of the North is forced to violent exercise and is compelled to demand from rude industries the bread which rebellious nature often denies him. Under a lifeless sun, the palest colors always seem hard to him, and, to produce any appreciable effect, he is driven to projections which would appear exaggerated if they were not necessary; beneath a lowering sky, to respond to the chaos of the elements, he piles form on form, roof on roof; the noises that come to him through a mist-laden atmosphere are softened to his ear and cause him to turn to music for powerful effects; lastly, his constant struggle against the effects of the *milieu* in which he is constrained to live obliges him to go back to causes in order to find the remedy, so that the artist is, within, a philosopher.

While one of the two artists whom we are considering will seek after the great effects of shade and small surfaces of light, on the exterior of his building, in order to produce the desired impression of coolness, the other, by broad lighted surfaces and strong shadows of slight extent, will throw the greatest possible amount of sunlight on his; in the interior, everything will be arranged to bar out the heat and devouring brilliancy of day in the first case; in the other, all will tend to enclose and protect, but without excluding the sunlight. However,

opposite though these two methods may seem in their results they rest upon the self-same principle, namely, to secure the comfort of the inhabitant. Man is the point of departure for all that is for his use. Harmony will prevail to the same degree in the art of both regions, though with different local accents; graceful majesty will be the portion of the South, manly pride the lot of the North.

With less strongly-marked characteristics, the art of intermediary people is subjected, in turn, to extreme influences; after frequent efforts to recover itself, it assimilates these influences, while at the same time so tempering them, as often to produce a genuine creation.

As we have implied above, artists cultivate the arts as it were without knowing it, as the result of their surroundings, and without any control over the origin of their sentiments. The writers who have analyzed the works of artists have sought for the philosophy of art in painting, sculpture and music; architecture has been seldom, if ever, approached by them, on account of the technical difficulties that stand in the way, and the people of the North, almost without exception, are the only ones who have produced artists sufficiently philosophical and patient to write on the subject. And, yet, if the art, the literature and the institutions and beliefs of a people must be consulted in order to resurrect its extinct civilization, with how much reason, *a fortiori*, should its architecture, which embodies all these things—because of the considerable efforts that it represents, and of the accent of truth it contains—occupy the first place.

But, before treating of style in architecture from a philosophical standpoint, it seems to us desirable to view the subject in general according to our understanding of the term.

Philosophy (from the Greek *φίλος*, friend, and *σοφία*, wisdom) claims, however incorrectly, to be a guide for life. How many victims, nevertheless, have been sacrificed in its name and in the name of liberty!

The two principal philosophies are the idealistic and the materialistic. The aim of the former is the quest of an ideal, outside of and above matter; while the latter is kept confined to the examination of the material manifestations of our senses. Thus, materialism has considered man as a molecule attracted or driven unconsciously toward the gratification of wants necessary to the support of his physical life. The brain, says this science, secretes the fluid indispensable to thought: therefore, thought is wholly in this fluid; if the fluid is abundant, thought is abundant. Man is a machine that beholds the *ego* disappear with free will, and, free will ceasing to exist, conscience can no longer exist: finally, without conscience, the notion of a God apparently becomes nothing but a sublime folly, and the moral code, which is derived from God and the conscience, is facultative and disappears in its turn. It is evident, then, what society would become if it should lose respect for all law, for the laws rest on moral guaranties and the observance of contracts, both of which would have already disappeared; therefore, punishment could not be exercised with sufficient vigilance to compel the performance of the social duties and secure the social rights of each individual. A state of good fellowship would shortly be followed by a state of savagery; justice would be replaced by force, solidarity by isolation; to plenty would succeed famine, for who would voluntarily consent to work to-day, only to be pillaged to-morrow? And we should go back to a condition of slavery, where the stronger would impose his will on the weaker. Sinister dream, shameful degradation, the work of ignorant men!

With materialism, then, society would be impossible; it regards life purely as a mechanical action, and, without any ideal, with the essentially deceptive basis of the senses; it affirms, nevertheless, that being matter it will return to matter.

What incomprehensible despair in the presence of the most striking proofs to the contrary! In fact, do we not see man living in society as a consequence of the observance of social contracts, imposed by material needs, and of the divine law, resting upon respect for morality—morality, the existence of which, joined to free will, imposes the *ego*? This *ego* is, then, able to do good or evil, rise or fall voluntarily; this *ego* which has a comprehension of the best of perfection, that is to say of the possibility of performing an act which, although not profiting the individual and being possibly even a disadvantage to him, may be an improvement, an advancement in a realm distinct from matter; force reigns in matter, force constituted by the *ensemble* of the wonderful laws that control the body, laws to which divine wisdom has subjected the universe, and

¹ From the French of Léon Labrousse, in Planat's *Encyclopédie de l'Architecture et de la Construction*.

which no one can escape except by the divine will, therefore, no one can without error assume that this wisdom would consent to the overthrow of its own laws, in obedience to a human injunction. The body, its task accomplished, demands rest and shrinks from a new effort; the soul, its duty fulfilled, rejoices and aspires to a new sacrifice. The social laws forbid us to do evil to our neighbor, the divine law compels us to serve him; if this law were obeyed, how many miseries would be avoided; for evil comes to us almost wholly from the selfishness of men, or from material necessities, while all good and all consolation come from God and morality. Matter is created perfect for the mechanical uses to which it is reserved; we cannot change its combinations without altering its nature; hence, it is not perfectible, but merely capable of modification. Why do I possess the sense of justice and the sense of perfection, notions of which do not come to one directly from nature? Why have they entered the human mind? They do not profit me, they do not answer my physical needs. They are then outside of matter and imperiously demand the *ego*, an *ego* composed of immaterial needs distinct from the needs of my body. Now, if I am conscious of immaterial needs, it is to feed and give life to something immaterial in me which would perish without nourishment, as my body requires material nourishment to supply its needs; this thing which is immaterial in me I call the soul, and this soul, which in its essence cannot be decomposed, is perforce indestructible, imperishable. Mathematical truths are absolute and eternal; from them we are able to affirm also that, every product being of the same nature as its factors, if my body is the product of matter, an immaterial factor is requisite to my soul—God, the infinite limit of all perfections. Materialistic philosophers have been deceived by appearances, and it seems to us puerile on their part to fix the bounds of the intellectual horizon by the length of range of their own vision, this range differing for each individual. If we reflect that the immaterial soul can be put in communication with the material nature only by means of the intermediary instruments of our body, called organs, the impressions and manifestations of which are summed up in our senses, we shall understand that the soul, while remaining entire, will have impressions dependent upon wrongs done to these organs, and that it will lose the notion of truth and even of the material life.

What would you say if you were asked to give correct results with only false instruments at your disposal? You would declare the thing quite impossible. What would you say if an instrument did not work in which one of the main parts was broken? You would probably consider that perfectly natural. Strange deduction! Why should you, because you are a materialistic philosopher, arrive at opposite conclusions? Because man never enjoys the decree that condemns, and because he prefers neither to hear nor see.

Our object in touching upon the questions of idealism and materialism in this article was to show in what sense we believed philosophy was to be followed, and we sincerely hope that a real service has been rendered to art by demonstrating that without the ideal neither a social state, nor art, nor progress would be possible.

(To be continued.)

THE ITALIAN RENAISSANCE.—I.

NOTES FOR ARCHITECTURAL STUDENTS.

IN the *American Architect* for March 31, there appeared an editorial paragraph calling attention to the travelling class in architecture for the study of the Renaissance in Italy, which Professor Hamlin, of Columbia College, is to conduct this coming summer. In view of the interest which this proposed enterprise has developed among architects generally, it has been thought that a somewhat detailed account of the intended work and an itinerary of the class might prove useful and suggestive to a considerable number of architects and students whose studies must be pursued at home, but especially to such as hope at some future time to travel over the same ground themselves. The bibliography and list of monuments recommended for special study, which is being prepared for the use of the class, is of course far from exhaustive, but being intended for the practical use of its members, can hardly fail to be of service to many others who are seeking by reading and travel to become more or less acquainted with the history and works of the Italian Renaissance.

As announced in the editorial referred to above, the class is scheduled to meet in Naples early in June. It is expected that most of its members will sail from New York on May 26 by the "*Kaiser*

Wilhelm II," the balance starting a week later by the "*Werra*." These will, of course, lose five or six days of class-work, the intention being to begin active study on or about June 7, remaining in Naples until the 15th or 16th, when the class will start for Rome, stopping over at Caserta on the way to visit the royal palace and gardens there. Naples, in June, is a very agreeable place, and with the surrounding attractions of Ischia, Sorrento and Capri, Pompeii and Vesuvius, there is much to beguile the traveller into a longer stay than the purely architectural interest of the region would warrant.

The Renaissance was late in reaching Naples, and its monuments are almost entirely the work of others than Neapolitans. The city possesses a number of fine Gothic churches and fortifications of the thirteenth and fourteenth centuries, but very few structures of the latter part of the fifteenth century except chapels and tombs. Even the cinque-cento produced little that is notable in Naples. The most conspicuous monuments are those belonging to the seventeenth and eighteenth centuries, and one can here study to his heart's content the cold and elegant classicism of Domenico Fontana, the splurge and extravagance of the Rococo and "Jesuit" styles, and the still later work of Vanvitelli and his successors.

If one excepts the Palazzo Gravina, the Arch of Alphonso and the Porta Capuana, and the florid productions of the decadence, really the most instructive and interesting manifestations of the Renaissance in Naples are to be sought in the tombs and monuments, chapels, altars and doorways of the latter part of the fifteenth and of the early sixteenth century, in churches built at much earlier dates. These Gothic churches have, many of them, moreover, been altered, "restored," and decked with Palladian façades at various times, so that mediæval and Renaissance work is mingled in a way impossible to set forth in a tabular list without an amount of detail and a minuteness of enumeration quite unnecessary for our purposes.

The literature on the Renaissance in Naples is scanty. The voluminous work of Sasso, "*Monumenti di Napoli*," is so full of gross and ridiculous errors of date and attribution of the designs as to make its text worthless, except for the works of the eighteenth century, which it illustrates and describes with some detail. The student in search of detailed historical information will find his Murray and Baedeker quite the handiest and most useful books of reference. Two or three of the chief monuments are illustrated in the Schütz portfolios of heliotypes ("*Die Renaissance in Italien*") and referred to in the general works on architectural history.

On general works of reference for the Renaissance period, a few words should be said here. The only work of this class in English of real value to the architect is Fergusson's "*History of Modern Architecture*," in the revised edition (London, 1892). The lively and entertaining style of this book must commend it to the general reader, to whom it will prove very valuable if its critical estimates of particular monuments be taken with a due grain of salt, or with a certain reservation of the reader's judgment. The list of monuments enumerated is, however, not nearly so complete as that in Lübke's "*Geschichte der Architektur*," which, by reason of this very abundance of monuments cited, takes on in places almost the character of a catalogue, and is less interesting to read, even to a thorough master of German. The little hand-book of Peyer Im Hof, "*Die Italienische Renaissance*," is valuable for its illustrations—mainly elevations in outline—of notable buildings; it can be had of any importer of German books for \$2.50. Unquestionably the most valuable work for the student of the Italian Renaissance, if only he can read German, is Burckhardt's "*Cicerone*," especially the section devoted to architecture, and to which the Schütz heliotypes may be taken as the illustrations. It is a pity this part of the work has not been translated into English.

A brief sketch of the Italian Renaissance in architecture is found in the first section of Gwilt's "*Encyclopædia*" (pages 131 to 151), and a much fuller account, with illustrations, in Palustre's "*L'Architecture de la Renaissance*," (livre premier). This little hand-book belongs to the "*Bibliothèque de l'Enseignement des Beaux-Arts*," published by Quantin, in Paris; it is to be hoped that the volume just cited may be soon translated. The price of the book is \$1.35.

Lives of a number of the great architects of the Italian Renaissance (Brunellesco, Alberti, Bramante, Peruzzi, the San Galli, Michael Angelo, etc.) may be found in Vasari, "*Vite dei Pittori*," in Italian, or in English translations; and in Quatremère de Quincy's "*Vies des plus illustres architectes*," a work long out of print, but accessible in the larger public libraries. Lists of architects of the Renaissance with dates and chief works may be studied in the text of Letarouilly's "*Edifices de Rome Moderne*," and in Gwilt's "*Noctua Italiana*" (somewhat incomplete as to dates)—a rare work printed in 1818, in London.

For the historical, literary, political and intellectual aspects of the Renaissance there are abundant works to read or consult. We might mention especially Walter Pater's "*The Renaissance*"; Symonds's "*The Renaissance in Italy*," especially the volume on "*The Fine Arts*," which, however, treats much more fully of the painting and sculpture than of the architecture of the period; and Middlemarch's excellent translation of Burckhardt's "*The Civilization of the Period of the Renaissance in Italy*" for the political and social aspects of the Renaissance movement.

The monuments of the Renaissance in Naples enumerated below are those specially recommended for study by the travelling class. Of course, the list is far from exhaustive, and there doubtless exist many interesting bits and fragments of Renaissance work which the

members of the class will discover, that are not mentioned even in Murray or Baedeker.

Fifteenth Century.

THE BRANCACCI MONUMENT in church of S. Angelo a Nilo: about 1440, by Donatello (1386-1466) and Michelozzo (1391-1472).

ARCH OF ALPHONSO OF ARRAGON (or gate of the Castel Nuovo): 1470 by Giuliano da Majano (1432-1490); or by the Milanese Pietro di Martino.

PORTA CAPUANA: 1484 by Giuliano da Majano for Ferdinand I of Arragon.

PALAZZO CUOMO: end of fifteenth century by Florentine architects.

PALAZZO GRAVINA: 1499 by Gabriele d'Agnolo (1480-1510); much altered in subsequent times.

CHURCH SAN SAVERINO: 1490-1520 by Mormando of Florence.

CHAPELS AND TOMBS: by Giovanni da Nola, Benedetto da Majano (1442-1497) and others in many of the older churches, especially Monte Oliveto, S. Domenico Maggiore and S. Maria la Nuovo.

Sixteenth Century.

CHAPELS IN CATHEDRAL AND S. GIOVANNI A CARBONARA.

CHURCH OF S. GIACOMO DEGLI SPAGNUOLI: 1540, perhaps by Merlino da Nola (Gwilt).

S. MARIA LA NUOVO: "restored" in 1525, by Agnolo Franco.

S. TRINITA MAGGIORE (or the Gesù Nuovo): 1584.

NATIONAL MUSEUM, (Museo Reale Borbonico): 1586, by Domenico Fontana of Rome, (1543-1607).

S. PAOLO MAGGIORE: 1590, by Grimaldi.

Seventeenth Century.

CAMPANILE OF SANTA CHIARA: about 1600.

PALAZZO REALE: 1600-1615, by Domenico and Giovanni Fontana.

FOUNTAIN, on terrace of Santa Lucia: Domenico d'Aurea and Giovanni Merlino. (?)

CHAPEL ST. JANUARIUS in Cathedral: 1608.

S. FILIPPO NERI (Ch. dei Gerolomini): 1620.

Many new façades, ceilings, stucco decorations in older churches.

Eighteenth and Nineteenth Centuries.

CHURCH OF SANTA CHIARA: modernized 1752, by Luigi Vanvitelli (1700-1773).

CHURCH OF THE ANNUNZIATA: 1757, by Luigi Vanvitelli.

HEMICYCLE OF SPIRITO SANTO: 1757, by Luigi Vanvitelli.

PALAZZO PRINCIPALE D'ANGRI: 1760, by Luigi Vanvitelli.

CHURCH OF SAN FRANCESCO DI PAOLA: 1819, by Pietro Valente.

THEATRE OF SAN CARLO: 1810, by Medrano.

GALLERIA UMBERTO: 1839, by di Mauro of Rome.

In addition to these are the Renaissance objects in the National Museum; and, of course, the student of the Renaissance cannot afford to pass over the splendid treasures of Classic art in that Museum and at Pompeii, since Classic art was the foundation and inspiration of Renaissance design.

CASERTA.

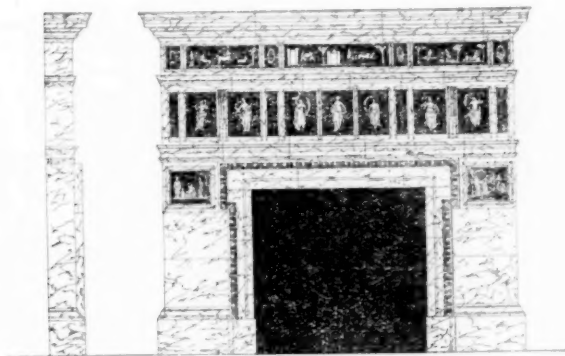
Here one monument alone engages our attention, the splendid Royal Palace erected about 1750-60 from the designs of Vanvitelli; with its four courts, magnificent staircases and sumptuous gardens, of which the unrivalled *château d'eau* is the most important single feature.

From Caserta the class proceeds to Rome for a stay of about four weeks.

A. D. F. HAMLIN.

[To be continued.]

SIR PHILIP CUNLIFFE-OWEN.



A Modern British Chimneypiece, South Kensington Museum. Drawn by Giles Whiting.

THE death of Sir Philip Cunliffe-Owen will be deplored by many thousands of British industrials who had been brought into close contact with him at International Exhibitions, and who never found him wanting during those periods of difficulty and high pressure. Few persons are privileged to leave behind them as wide

a circle of friends and admirers, or so successful a record as Sir Philip Owen, and his death can be regarded as no ordinary loss, although he had for some little time past resigned his active official life. Since 1855 to the date of his death Sir Philip Cunliffe-Owen was closely associated with exhibition work, and since 1873 he occupied the elevated position, as Sir Henry Cole's successor, of Director of the South Kensington Museum. To him may be ascribed the organization of that splendid institution, as well as the establishment of the Bethnal Green Museum, the extent and completeness of which are but little realized at the west end of London. From its commencement, the career of Sir Philip Cunliffe-Owen was strictly an official one, and it is an evidence of his great powers that forty years of Government routine had failed to hamper him with the bonds of officialism. Capt. Cunliffe-Owen, of the Royal Navy, intended that his son should follow the same profession in which he had won reputation, and for five years he wore midshipman's uniform in active service, but his health was not equal to the calling, and he retired in early youth to turn to some more congenial work. This was shortly after the brilliant success of the first World's Fair of 1851 had encouraged the Prince Consort to persevere in the great work with which his name will be always associated; the Science and Art Department was the embodiment of the Prince Consort's scheme, but the primitive home of that department, which was destined to develop into the magnificent buildings it now occupies, had not been commenced when young Owen took service under Sir Henry Cole. A very few years later, the first opportunity offered that laid the foundation of a great reputation. Paris, in 1855, followed London's example of 1851; an important British section formed a part of the first French International Exhibition, and a situation as superintendent was given to Owen. One can easily imagine that he was admirably well adapted for his position, and that the potential ability and energy within him made themselves felt for the comfort and well-being of the exhibitors placed under his charge. Exhibitions, great and small, had a freshness and attractiveness in those days, when medals and jury-awards were worth striving for, and the calling of the exhibition-monger was unknown. Owen saw the path for a great career opened to him at the Palais de l'Industrie in 1855, and he followed it steadfastly to the last, winning honors and friendship as he went. An accomplished linguist, a born diplomat, possessing an experience rare in those early days, and allied by marriage to a distinguished German house, Philip Cunliffe-Owen was richly equipped with natural and acquired gifts to perform the important duties of promoting English industrial progress abroad, and to safeguarding British commercial interests. The record he had made at Paris in 1855, coupled with the fact that in 1860 he was appointed Assistant Director at South Kensington, under Sir Henry Cole, naturally led to his being elected to fill the important position of Director of the Foreign Sections at the London International Exhibition of 1862. The tact, patience, and sympathy he brought to bear upon this task, combined with his great ability and energy, established his foreign reputation, and made it evident that at all future exhibitions held within the limits of his active life, the voice and influence of Owen must be predominant. Naturally he went to the second Paris Exhibition of 1867, this time not as a superintendent, but in charge of the entire British section. It must have been a period of well-deserved triumph, and his administration was certainly a pleasant one, not only for the exhibitors, but for himself. The British Government was very liberal, and more than 120,000*l.* were granted to uphold British interests on the Champ de Mars. It was much the same story eleven years later at the great Paris Exhibition of 1878. Very many remember with what credit this country was represented on that occasion, when money was again plentiful, and exhibits numerous. But, as every exhibitor knows, a generous treasury is not the only, nor indeed by any means the most important, element in the successful administration of a foreign section. What is of vital moment is the character of the executive chief. He must combine experience, tireless energy, unlimited tact, patience and geniality; he must be all things to all men; his ears must be open to all the grievances, real or imaginary, of the exhibitor, and he must be ever ready to attempt to remove the one or explain away the other; his eye must be everywhere, and he must show by his constant presence that he is worthy of the great trust reposed in him; and with all these qualities must be combined inflexibility of purpose, boldness of action, and promptness in decision. British exhibitors who have enjoyed the advantage of Sir Philip Owen's management will endorse our statement that he possessed these qualities, and more than that, those who knew him best can testify that the geniality was real, the sympathetic nature ever rang true, the warmth of interest in the smallest exhibitor was never simulated. The epoch of exhibitions will pass away without such a one as Owen coming again amongst us, and his name in connection with them will remain famous, not in this country only, but throughout the world.

But although Cunliffe-Owen's more brilliant triumphs were those of Paris, 1867 and 1878, and perhaps that of London, 1886, to our mind his real greatness shone out most brightly during the troublous period of Vienna in 1873. His enemies—for of course Sir Philip Cunliffe-Owen had enemies, and the bitterest of them were those who owed him the deepest debt of gratitude—accused him of lavish extravagance; even his friends (and surely few men have passed away leaving behind a longer and a truer list) considered that he carried open-handed generosity to a fault. Let us recall the story of

1873. Twenty years after the first great International Exhibition — the World's Fair of the Prince Consort — the Archduke Ranier announced that an International Exhibition of the arts, industries, and sciences would be held in Vienna in 1873, and all the nations of the world were invited to attend. The following March the Austrian Ambassador, Count Beust, informed Her Majesty's Secretary of State for Foreign Affairs of the great anxiety of the Austrian Government that Great Britain should be worthily represented at the approaching exhibition. In accordance with the desire expressed, a Royal Commission was appointed. This Commission was narrowly restricted in its financial power; only 6,000*l.* had been voted by Parliament, and this sum would barely suffice to pay very limited office expenses in London and Vienna, and to inform British manufacturers of the nature and scope of the exhibition. The Commission was a most distinguished one, having H. R. H. the Prince of Wales as its president, and consisted of fourteen members with Mr. Philip Cunliffe-Owen as secretary, appointed to this post, not by the members of the Commission, but in Her Majesty's Warrant. By virtue of this Royal appointment, the labor and responsibility of creating and controlling a creditable British section fell on Cunliffe-Owen. To achieve this result he had at his disposal a sum of 6,000*l.*, and he was handicapped by the fact that, for the first time, exhibitors were to be charged for the space they occupied by the Exhibition authorities. It was not a large tax, amounting to less than 2*s.* a square foot in the front part of the buildings, and falling to about 3*d.* a foot in the parks. Still it was an innovation objectionable to the British exhibitor, and the prejudice it occasioned had to be overcome by tact and perseverance. At a later date the Government grant was increased to nearly 29,000*l.*, but this addition proved entirely inadequate to meet the expenses associated with the administration of what proved to be an important British Section. The strong personality of Sir Philip Owen enabled the Commission to make good the deficiency. It was he who influenced the noble generosity of Sir Richard Wallace, and induced him to take the whole charge of the Fine Art exhibit, which, it will be remembered, was a highly successful one. Following this example, other members of the Commission subscribed liberally to meet certain necessary charges, which alone enabled the British portion of the exhibition to be opened in a state of completeness on May 1, 1873. It was Sir Philip Owen who arranged, to the benefit of exhibitors, facilities for transit for themselves and their goods, at rates unheard of before that time, and it was he who, after the close of the exhibition, and a triumphant record for the British section, collected and issued four volumes of closely-printed reports, covering nearly 3,000 pages. There were about 800 industrial exhibitors, and it will be remembered by many that the agricultural and live-stock groups were essentially worthy of the high reputation of England. Quite apart from the pecuniary assistance Mr. Owen managed to obtain for the benefit of the Section, nothing but the most rigid economy and watchfulness, combined with great ability and skill, enabled him to carry his work to a successful conclusion, having satisfied nearly all and leaving behind him, on the part of exhibitors and officials, the most pleasant associations. The record of the British section of the Vienna Exhibition contains a complete refutation of the charge of reckless expenditure that has been raised against the exhibition management of Sir Philip Cunliffe-Owen.

It was in 1873 that he succeeded Sir Henry Cole as Director of the South Kensington Museum, a post he retained till the time of his retirement, a year ago, finding leisure at not infrequent intervals for taking a responsible part in exhibition work. His reputation in the United States was assured in 1875, when, as Executive Commissioner for Great Britain at the Centennial Exposition of Philadelphia, he visited that city officially. All the preliminary work of the Section at that exhibition was done by Sir Philip Owen, who, however, retired from the work before the buildings were opened to the public. A recent experience showed us that, brief as his visits to America were, his name alone is still remembered by Americans, in connection with the British Sections of 1876. We have already spoken of the Paris Exhibition of 1878, and the Indian and Colonial Exhibition of South Kensington is fresh in the minds of all; it was as a recognition of his distinguished services at this exhibition that he was created a K. C. B. The government did not recognize the Paris Exposition of 1889, and for this, if for no other reason, Sir Philip Owen would have been unable to take any part in that celebration; but his experience and counsel were always at the service of those actively engaged, and it was to no small extent due to his guidance and advice, that Sir Polydore de Keyser was enabled to do so well, with limited means, and under conditions of exceptional difficulty, as he did at Paris in 1889. As a member of the British Royal Commission of the Columbian Exposition, Sir Philip Owen, until a year ago, took an official part in the administration. Before that Commission was formed, he, together with General Donnelly, were consulted by the Government, and the Department of Science and Art would probably have accepted the responsibility, had not Sir Philip considered that the grant of 25,000*l.* was wholly inadequate; he stated that 60,000*l.* would be required, and it will be remembered that the grant was subsequently raised to that sum. If the larger sum had been voted in the first instance, there is no doubt that once more Sir Philip Owen would have accepted the position of Foreign Commissioner at Chicago, and the Section would have been placed under his wise and sympathetic control. It is very doubtful, however, whether he could have withstood the fatigue of

the work involved, for his health was already failing, and the time of his retirement was at hand. His term of service at South Kensington expired last year, and though he had intended to remain at his post still for a short time, a dangerous and sudden illness precipitated the abandonment of the position he had so ably filled for twenty years. For the last twelve-month his life had been full of suffering, borne with cheerfulness and resignation, in the full knowledge of the approaching end to a long career of usefulness. Perhaps it was better that he has been spared years of enforced inactivity, and was taken from us when his work was done, crowned as it has been with many honors, and the love and esteem of many friends. The esteem and the honors had been fairly won, and not, as it too often happens, gained through accident or influence. The list would be too long for us to give here, but we may mention some of the more conspicuous. In 1873 he was made a C. B., and after the Paris Exhibition of 1878 was created K. C. M. G. and C. I. E., while at the close of the Indian and Colonial Exhibition he received the distinction of K. C. B. Of foreign orders he possessed an endless variety (including the Grand Officer of the Legion of Honor), and decorations from almost every country in Europe. Her Majesty the Queen and H. R. H. the Princess of Wales sent touching tributes of their regard to Sir Philip Cunliffe-Owen's grave, which was surrounded by many friends, by whom, as by a far larger circle, he will be always remembered as essentially a man of his time. — *Engineering.*

THE PYRAMID OF DASHUR.

THE discoveries made by the French Director of Excavations in Egypt, M. de Morgan, near one of two ancient brick pyramids not far from Cairo, are exciting the deepest interest in London and Paris, as well as among the tourists and European residents on the Nile. Brief allusions were made early in the month in the current news of the fine arts, but these finds are so important that further notice is necessary.

The tombs and presumably the brick pyramid (since bricks found in the subterranean tombs are like those of that monument itself) belong to kings and princesses of the Twelfth Dynasty.

Egyptologists have divided the dynasties of the Pharaohs into thirty and group the thirty into dynasties one to eleven, twelve to nineteen, and twenty to thirty. This is merely for convenience, and was unknown to Herodotus, Manetho, Josephus and others who have written about the early kings. Nor did the Egyptians themselves have any such system. From the first group (one to eleven) we have only the slenderest details and no jewelry or gold ornaments. Indeed, it is not till we reach the eighteenth that we get in our museums and that of Egypt, certain objects that belong to the minor arts of personal decoration, and so forth. The excitement that M. de Morgan's find has aroused is, therefore, natural; for here are art-works of very great beauty from the tombs of at least three Pharaohs — Usertsen II and III, and Amen-em-hat III, whose reigns are placed by Mariette between 2366 and 2300 B. C., or about 4,000 years ago.

Concerning Usertsen II, we know that a Semitic tribe called the Aamu came from a country named Absha with tribute. Concerning Usertsen III, we are told by the inscriptions that he made a great campaign up the Nile against the black Nubians and built a temple at Elephantiné. As to Amen-em-hat III, he is of even greater note, since it was he who built in the Fayum the great artificial reservoir for his people, which was called Lake Mæris, the site of which is still debated. He also built the labyrinth, said to have had 1,500 rooms above ground and 1,500 below. Lake Mæris stored up the water of the Nile during the seasons of floods, and was tapped in the dry season as required.

Herodotus has a quaint story picked up in Egypt about 450 B. C., which may relate to one of the brick pyramids at Dashur, concerning a king of the unrecognizable name Asychis. He wrote on a piece of stone the following apology: "Do not disparage my worth by comparing me to those pyramids composed of stone. I am as much superior to them as Jove is superior to the rest of the deities. For, thrusting poles down into the lake, and collecting the mud deposited on the poles, bricks were fashioned, and in this manner was I made." The meaning of which may possibly be, that, in the opinion of the king, or of the Egyptian who told Herodotus this particular yarn, it was more honorable to a pyramid to be built of the fertile mud of the Nile than the dead stone of the desert.

Humility like this seems to have failed to put the grave-robbes off the scent for funereal treasures, since the brick pyramid in question has been ruined in every direction, and is now only ninety feet high, a long mound of disintegrated, sun-dried brick, with its top a mere crater. Even the tombs at some distance were rifled long before Herodotus, yet the robbers either missed some of the spoil, or themselves proceeded to bury some with the intention of returning at a better moment. Some side chapels, or niches, were found still walled up, but the richest treasures were discovered several feet under the floor of a gallery strewn with skulls, broken or empty boxes, and fragments of sarcophagi.

M. de Morgan must be credited with a good deal of sagacity in this discovery. He is the third important director of excavations in Egypt since Napoleon III lent Mariette to the Egyptians. After Mariette came Maspéro; after Maspéro came Grébault; now it is his turn to uphold the honor of France in a field opened by

Napoleon the Great a century ago. His excavations in the Caucasus for the French Government some years ago prepared him for this work. Having selected the brick pyramid as a good site for very early tombs, he drove a shaft directly through its centre to the bed-rock without positive results. Then he moved to some distance and began sinking shafts, well knowing the efforts made by these kings to conceal their tombs. Finally, on February 28, he struck an unimportant tomb. But the bricks were like those of the pyramid. He had found the radius. On March 2 his foreman reported a door of cut stone; breaking through that, a low tortuous gallery was found heading toward the pyramid and ending in a tomb, with the remains of a sarcophagus and a statue carved in diorite, which robbers had broken up, perhaps thinking that they contained treasures concealed in the stone. — *N. Y. Times.*



T-SQUARE CLUB.

THERE was a meeting of the T-Square Club on Wednesday, April 18. The subject for competition was "A Memorial Library for a Small Town." First mention was awarded to Robert C. Heath; second to E. L. Powers; third to Geo. G. Bassett. This is the last regular meeting of the Club until October.

GEO. BISPHAM PAGE, Secretary.

AMERICAN INSTITUTE OF ARCHITECTS.

MEETING of the Executive Committee of the American Institute of Architects, at the rooms of the Institute, New York, April 21, 1894.

Present: President Daniel H. Burnham, Vice-President George B. Post, Treasurer Samuel A. Treat, Secretary Alfred Stone and Messrs. E. H. Kendall, C. F. McKim and R. W. Gibson.

An announcement was made of the decease of the following Fellows of the A. I. A. since the meeting of the Board of Directors, January 8th and 9th:

George H. Edbrooke, New York, January 25, 1894; George Walter da Cunha, Montclair, N. J., January 31, 1894; August Bauer, Chicago, February 8, 1894; William Worth Carlin, March 23, 1894, and proper minutes in regard to the same were ordered to be made by the Secretary.

The death of Mr. Carlin having created a vacancy in the Board of Directors, Mr. A. Page Brown, of San Francisco, was elected to fill the vacancy.

The death of César Daly, of France, for many years an Honorary Member, was announced, and Mr. R. M. Hunt and the Secretary were appointed a committee to prepare a suitable minute and to communicate the same to the family of the deceased.

The death of John Baird, a Corresponding Member, was also communicated to the Committee.

The letter-ballots were opened and the following persons were found to be elected as Fellows of the A. I. A.

WILLIAM SCHICKEL.....	New York, N. Y.
FREDERICK PERKINS.....	Chicago, Ill.
CHARLES F. BALDWIN.....	Newark, N. J.
GEORGE EDWARD HARDING.....	New York, N. Y.
JAMES WARRINER MOULTON.....	New York, N. Y.
ARTHUR PAGE BROWN.....	San Francisco, Cal.
JOSEPH WOLF.....	New York, N. Y.
JOHN HEMINGWAY DUNCAN.....	New York, N. Y.
JAMES BROWN LORD.....	New York, N. Y.
LAWRENCE J. O'CONNOR.....	New York, N. Y.
ROBERT WILLIAM GILBERT.....	Marquette, Mich., and Superior, Wis.
JOHN STEWART BARNEY.....	New York, N. Y.
WILLIAM TYSON GOOCH.....	New York, N. Y.
JOHN GODDARD STEARNS.....	Boston, Mass.

It was voted that J. S. Walker, architect and engineer of Samoa, be recommended by the Board at the next annual meeting for election as Corresponding Member of the A. I. A.

Messrs. Kendall and McKim and the Secretary were appointed, on behalf of the Institute, to act with a committee of the New York Chapter to make the necessary arrangements for the annual convention to be holden in New York on October 16th and subsequent days.

The President was requested to arrange with not less than six persons to prepare and read papers at the annual convention.

The Secretary read a communication from the Secretary of the Boston Chapter of the A. I. A., in regard to the publication of the "Thesaurus of Architecture" by Baron von Geymuller and a resolution in regard to the same passed by the Boston Chapter; whereupon the President was requested to correspond with Baron von Geymuller and represent to him the views of the Institute as expressed in the communication and resolution referred to above, that the great value of the work would be impaired by confining its issue to thirty copies at \$5,000 a copy, and that it would very much increase its value and usefulness to change the manner of its publication, increasing the number of copies to be printed so as to enable it to be sold for \$1,000 a copy, and thus bring it within the means of a larger number of societies and individuals and secure for it a large constituency and wider distribution.

A communication in regard to uniform coinage was postponed for further action.

A communication from Mr. R. M. Hunt, Chairman of the Committee to procure data for a history of the Institute, was received, stating that the committee had arranged with Mr. A. J. Bloor, for so many years the Secretary of the Institute, to furnish from his abundant store of knowledge such data for the use of the Institute.

It was voted that the President appoint a committee of five to consider the Bill now before Congress in regard to Government architecture, said committee to make suggestions in regard to the Bill and its provisions, with full power to take such action for and in behalf of the Institute as it may deem proper and wise.

It was voted that Executive Committee of the A. I. A. takes this, its first opportunity, to unanimously endorse and approve the action of Daniel H. Burnham, the President of the Institute, in the conduct of the correspondence which he has carried on, in behalf of the Institute, with Hon. John G. Carlisle, the Secretary of the Treasury, with reference to the designing of buildings for the Federal Government. [Adjourned.]



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

THE HOO-DEN OR PHENIX PALACE, ON THE WOODED ISLAND, WORLD'S COLUMBIAN EXHIBITION, CHICAGO, ILL.

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

STORES AT SOUDERTON, PA. MR. MILTON B. BEAN, ARCHITECT, LANSDALE, PA.

THE front of the building, 88' x 110', is three stories. The exterior is of Philadelphia press brick, light gray, in tinted mortar; the cornices, etc., are all galvanized-iron; the interior is finished in oak. The cost was \$18,000.

COMPETITIVE DESIGN FOR THE UNIVERSITY OF CINCINNATI, O. MESSRS. DESJARDINS & HAYWARD, ARCHITECTS, CINCINNATI, O.

COMPETITIVE DESIGN FOR THE UNIVERSITY OF CINCINNATI, O. MR. W. S. DUTTON, ARCHITECT, CINCINNATI, O.

CASINO AT WEST HARTFORD, CONN. MR. F. R. COMSTOCK, ARCHITECT, HARTFORD, CONN.

CENTRAL FIRE-HOUSE, PHILADELPHIA, PA. MR. JOHN T. WINDRIM, ARCHITECT, PHILADELPHIA, PA.

WHOLESALE WAREHOUSE FOR THEODORE WETMORE, ESQ., MINNEAPOLIS, MINN. MR. H. W. JONES, ARCHITECT, MINNEAPOLIS, MINN.

[Additional Illustrations in the International Edition.]

THE INDIANA STATE BUILDING, WORLD'S COLUMBIAN EXHIBITION, CHICAGO, ILL. MR. HENRY IVES COBB, ARCHITECT, CHICAGO, ILL.

[Gelatine Print.]

DESIGN FOR A MUSEUM OF ANTIQUITIES, BY PERCIER.

[Copper-plate Photogravure.]

TYNTESFIELD, BRISTOL, ENG.

NEW MINERS' HALL, SILKSWORTH, NEAR SUNDERLAND, ENG. MR. HENRY GRIEVES, A. R. I. B. A., ARCHITECT, SOUTH SHIELDS, ENG.

This building contains on the ground-floor a large assembly-hall, with gallery and recessed platform, also reading-room, committee-rooms and retiring-rooms; on the first floor, billiard and recreation rooms. The elevations are carried out in red bricks, with stone dressings and carvings. The roofs are covered with Westmoreland green slates. The cost has been about 3,400l.

NEW BOARD SCHOOL, SOUTH SHIELDS, ENG. MR. HENRY GRIEVES, A. R. I. B. A., ARCHITECT, SOUTH SHIELDS, ENG.

This school will give accommodation for 490 scholars, and contains on the ground-floor a large schoolroom, two classrooms, teachers'-room and cloak-rooms, etc., and on the first floor a school-room, three classrooms, teachers'-room and cloak-rooms. The two school-rooms are fitted with sliding partitions, and can each be converted into two class-rooms when required. The elevations are of red brick, with stone-dressings, etc. The roofs are covered with Welsh slates. The cost will be about 3,500l. The building will be heated throughout by hot-water.

EXHIBITIONS.

BOSTON, MASS.—Annual Spring Exhibition of Water-colors, Pastels, Black-and-Whites, and Sculpture: at the Boston Art Club, April 9 to April 28.

Charcoal Drawings by F. Hopkinson Smith: at Doll & Richards Gallery, 2 Park Street, April 20 to May 2.

Loan Collection of Paintings by William Morris Hunt: at the St. Botolph Club, April 3 to April 28.

Several hundred Specimens of Textile Designs of all countries, from the second century to the present time, from the collection given by Denman W. Ross; also a collection of Japanese Color-prints: at the Museum of Fine Arts, during April.

Water-colors by S. P. Rolt Triscott: at Chase's Gallery, 7 Hamilton Place, opens April 20.

Water-colors of Bermuda by C. Scott White: at Gallery of Foster Brothers, 164 Boylston Street, April 18 to May 5.

BUFFALO, N. Y.—Exhibition of Architectural Drawings: at the Buffalo Library building, now open.

CHICAGO, ILL.—Annual Exhibition of Water-colors: at the Art Institute, April 3 to May 6.

Drawings and Etchings by Joseph Pennell: at the Art Institute, April 17 to May 7.

Sixth Annual Spring Exhibition of the Chicago Society of Artists: at the Society's Galleries, April 16 to April 28.

NEW YORK, N. Y.—Sixty-ninth Annual Exhibition, National Academy of Design: 23d Street and Fourth Avenue, April 2 to May 12.

Bookbindings: at the Grolier Club, open until April 28.

Exhibition of Amateur Photography: at the Galleries of the American Fine Arts Society, 215 West 57th Street, April 16 to April 28.

ST. LOUIS, MO.—Exhibition of Architectural Drawings by St. Louis Chapter, A. I. A.: at the Museum of Fine Arts, April 25 to May 9.

NOTES AND CLIPPINGS.

SMOKE-ABSORPTION.—A system of smoke-absorption, invented by Colonel Duilier, has been applied at the City Saw Mills, Glasgow, and careful data taken by Mr. R. R. Tatlock, public analyst of that city. The boiler in use is a Babcock & Wilcox's water-tube steam generator working a 220-horse-power engine, and consuming daily about 3 tons of coal and $\frac{1}{2}$ ton of wood scraps and chips. Before entering the usual chimney the gases ascend a short brick flue, and then descend a flue of steel plates dipped at a high temperature in a tar composition, entering the ordinary stalk at the bottom. At the bottom of the ascending flue is a jet of steam at boiler temperature, while at the top of the descending flue is a fine spray of water. The carbon is thus separated and, with the water, drops into a sump at the foot of the descending flue, being thence carried off in pipes. The coal used showed 31.40 per cent gas, tar, etc., 48.70 per cent fixed carbon, .84 per cent sulphur, 6.56 per cent ash and 12.50 per cent water. Before treatment, analysis showed that the products of combustion contained 5.8 grains of sulphuric acid per 100 cubic feet, and after treatment 2.8, while in another case the reduction was from 9.5 to 4.2. As to soot, the first test showed a decrease from 73.5 grains to 2, and the other test from 23.3 to 1.5 grains. In other words, from 94 to 97 per cent of the soot was removed, and fully a half of the sulphuric acid. Tests showed that the draught was not affected, being .5 inch in the flue, and .4 inch in the chimney. The water used was 8,000 gallons per day, costing 2d. in Glasgow. Of course, with the apparatus, inferior coal can be used without the usual emission of dense smoke.—*Engineering.*

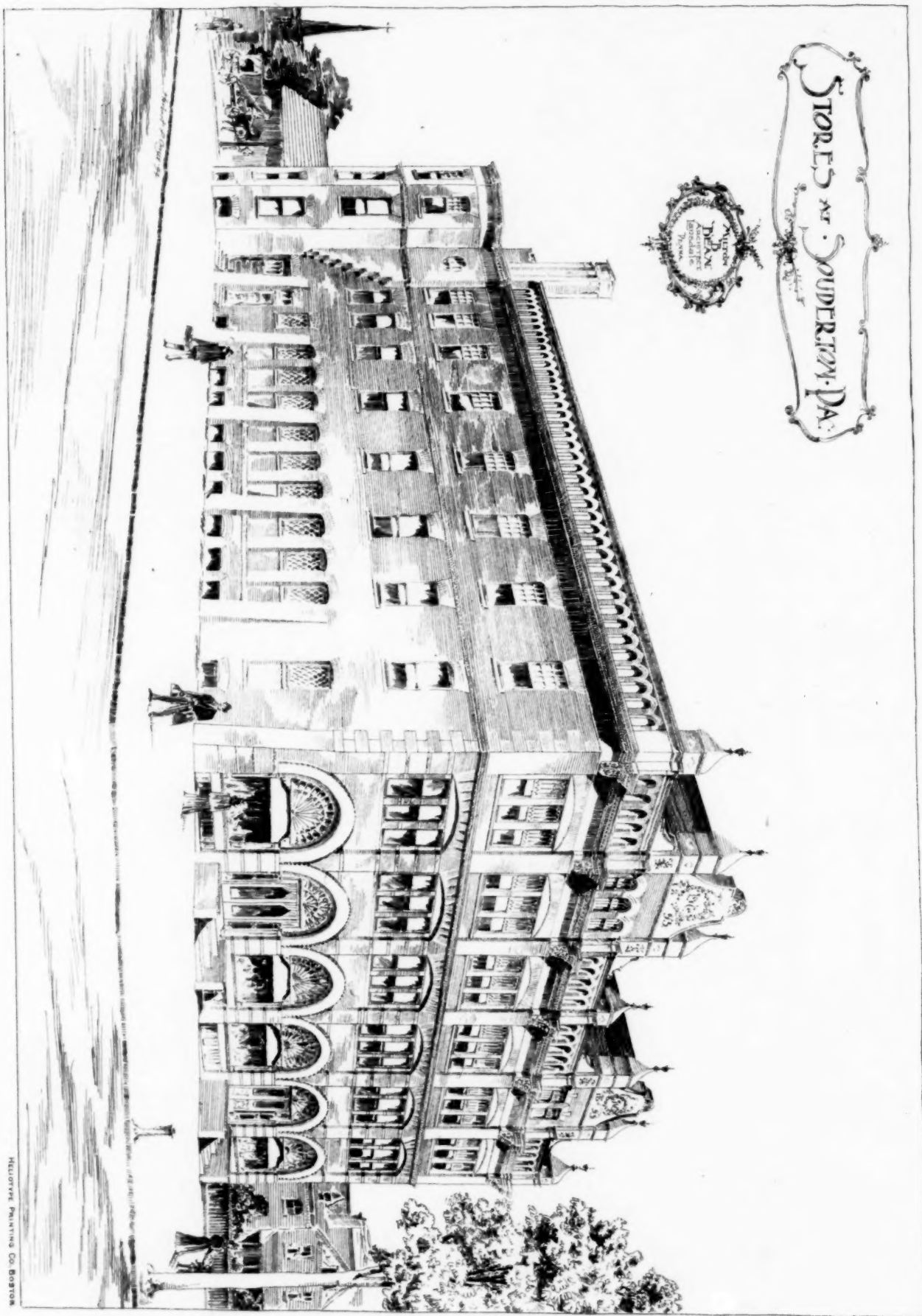
HOW WALNUT VENEER IS OBTAINED.—A consular report from Persia gives some interesting facts respecting loupe cutting—a trade which has an important bearing on furniture manufacture. The loupe is an excrescence found on walnut trees of great age, and said only to affect trees growing on rocky or mountainous soils. Most of the loupes are exported to France and England, via Russia, and when once they are in the hands of the manipulator in France or England, they are used for veneering purposes. The block is steamed to a very high degree, the effect of which is to render the wood of the substance of cheese. When in that state, a large blade cuts off sheets so thin, that every inch of thickness produces 100 sheets for veneering purposes. The natural designs on the best samples are very beautiful. One loupe has been known to fetch as much as £800. Only walnut loupes are exported; the other trees, such as oak, produce these excrescences. It might be worth while cutting them if the price obtainable in England would be found sufficiently remunerative by the louter. Loupe cutters are mostly Russian subjects who come to these parts accompanied by their special workmen, who bring their appliances with them. At first, loupers were wont to purchase the commodity at the price of two tumans per walnut tree, taking as much as they wished, and either destroying the parent tree, or not, as they chose. The owners of trees, however, discovered the value of the loupes, and the price increased year by year. The louter has more and more difficulties to contend with. The prices having risen so much and the loupes becoming rarer close to the coast, they have to obtain them farther inland, in less accessible places, where wheeled traffic is an impossibility, and where only bullock tracks across the mountains exist. They nevertheless continue working this business, which proves that it yields a fair profit.—*Illustrated Carpenter and Builder.*

DERIVATION OF "CAMPANILE."—One thousand five hundred years ago the first bell, similar in form and composition to the bells of to-day, rang out from the cathedral steeple of Nola in Campania. The wise and pious Bishop Paulinus is its inventor. This explains the fact why the Latin terms for bell are *campana* and *nola*. The legend which tells of Bishop Paulinus's invention of the bell is quaint and beautiful. The sun was declining, as the Bishop strolled thoughtfully through a lovely meadow. Its purple and gold rays dyed the green leaves on the tree-tops. The peacefulness of the hour filled the soul of the holy man with gratitude. He folded his hands and exclaimed: "Be praised, Great Ruler of the Universe, and in this earthly heaven give me a token that you will abide with me until the end of my day!" As he finished his prayer, he heard soft ringing noises round about, and saw the little bluebells, with which the meadow was thickly studded, rock their heads to and fro in the breeze. In memory of this sacred hour Paulinus designed and had made a giant blue-bell, which was hung in the tower of his church in Nola, and henceforth called the faithful to worship.—*St. Louis Post-Dispatch.*

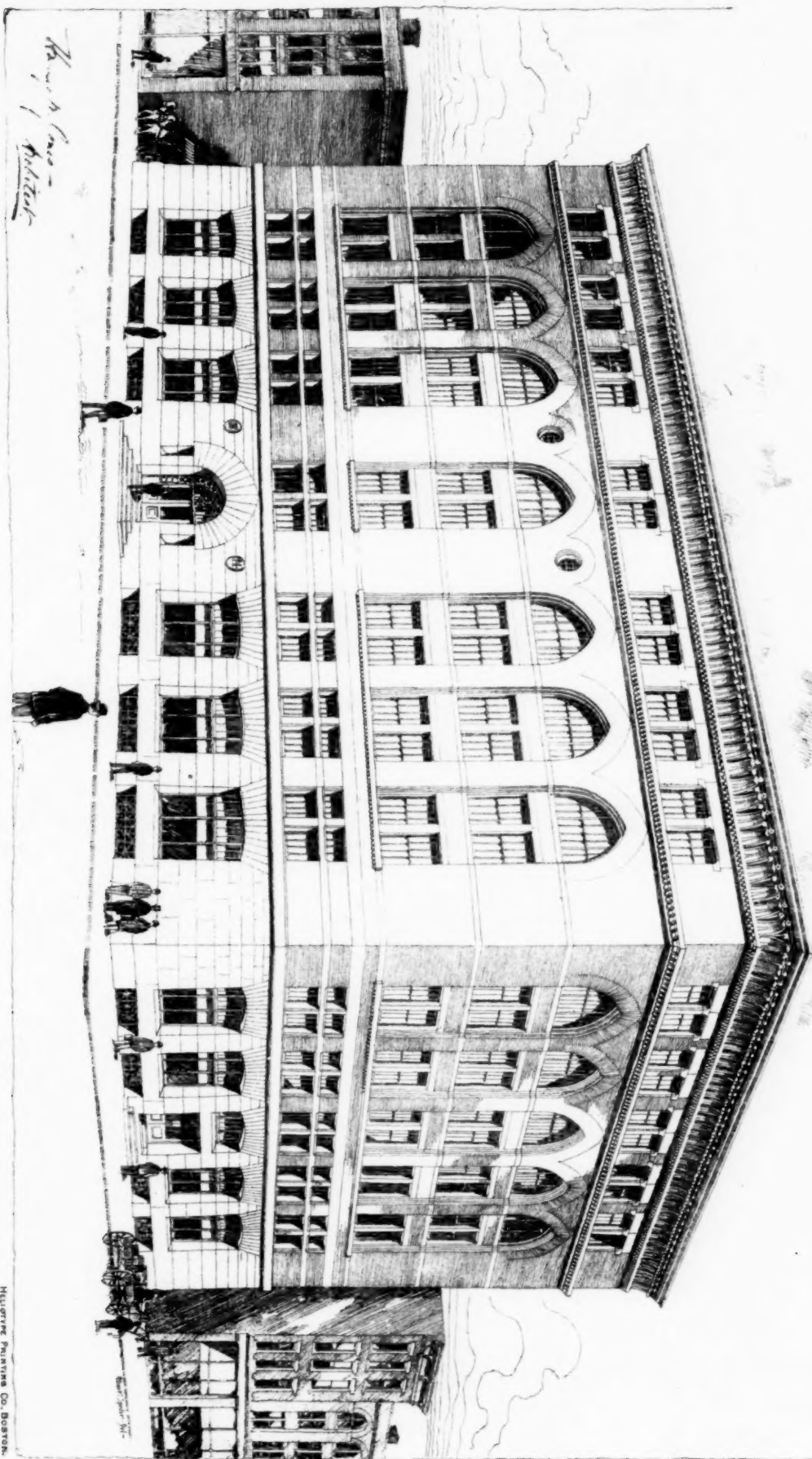
CLEANSING MECCA AND MEDINA.—Inasmuch as the holy cities of Medina and Mecca have always been regarded as the hot-beds of cholera, and as the point of departure of those terrible visitations that have scourged not only Europe, but even the United States, it must be a matter of universal relief and congratulation to learn that the Sultan of Turkey has at length yielded to the urgent solicitations of the last international sanitary conference, and is now taking steps for the improvement of the sanitation of the cities where the Prophet was born and buried. He has sent out a special mission to the Yemen, under Marshal Assaf Pacha, to superintend the construction of various establishments for the accommodation, boarding and medical treatment of pilgrims at the holy places. Asylums, hospitals and dispensaries are now being built, the wells are being disinfected and cleansed, the tanks increased in number, and a large and competent staff of doctors stationed at Mecca, Medina, El Thor, and at the Red Sea ports where the pilgrims land. The Sultan is reported to take a keen interest in everything connected with cholera, and is sufficiently "up to date" to abandon those fatalist ways of the old-fashioned Mahometans, who would refuse to administer medicine to the sick, for fear of running counter to divine wishes, or even to remove the flies that settled on the eyes of poor little infants, because "they had been placed there by Allah."—*N. Y. Tribune.*

MODERN FOUNDATION-WORK IN VENICE.—Visitors to Venice are always interested in the foundations of its houses. How these are formed to support massive buildings rising out of the water is a puzzle. As I saw the foundations of a new palace laid, perhaps I may be allowed briefly to describe the process. First, a strong cofferdam was constructed to keep out the water of the canals. Next, into the bottom thus laid bare were driven wooden piles. The work of driving these is one of the unique sights of Venice. Strong men raise with their arms a heavy hammer that slides on an upright beam, and let it fall on the top of the pile. The leader of the gang meantime keeps singing an old Venetian song, to the music of which the hammer is raised and allowed to fall. The work is very deliberate, as two whole lines are sung whilst the hammer is in the air, and other two before it is raised after it has fallen. It looks to be very slow work, but the men continue thus at it many hours without fatigue. The piles used in this case were beams of oak from 12 to 14 feet long, and a little less than 3 feet in circumference. Of these, 3,000 were used, which were driven, not close together, but leaving irregular intervals between them. Then into these interstices was poured a mixture of cement and stones and water, which formed a mass, solid as stone, in the course of twenty-four hours. The palace is 70 feet high, and the width of this foundation was 9 feet. On this, to the height of 6 feet or so above the level of high water in the Grand Canal, was raised a massive wall of Istrian stone, gradually diminishing in width. Above this were raised the walls, which are of brick, dipped in a solution the invention of the *capo-mastro*, Signor Marco Torres, which makes them resist damp and the weather. These brick walls also taper gradually, until at the top they have a width of only 1½ feet. The whole façade thus becomes to a certain extent a great buttress. In the construction of the old palaces no cement was used, but the piles were driven in, one close to another. Had this old method been pursued in this case, instead of 3,000, 15,000 piles would have been used. The Church of the Madonna della Salute adjoining stands on not less than one million and a half piles. In the old foundations, too, piles were not of oak, but of poplar, pine and various kinds of wood. Away from air and light they do not readily decay. Whole forests of wood are buried beneath Venice, as every building, with the exception of a few side walls of some, stand on piles. The foundations are the most expensive part of a building in Venice, and in the case of this palace they cost about 60,000 francs (2,400*l.*), those of the façade on the Grand Canal costing 20,000 francs alone (800*l.*). The cost of building space on the Grand Canal is at present about 30 francs (1*l.* 4*s.*) a square yard, but elsewhere in Venice only from 4*s.* to 4*s.* 6*d.* a square yard. Of course there is hardly an inch of clear building-ground in Venice (exclusive of garden ground, of which there is a very large amount), and as was the case in this building site, inferior or ruined buildings have first of all to be removed. This palace is not yet finished for occupation, and its erection has taken more than a year. I may add that, as in all buildings in Venice, the floors are laid with a kind of concrete peculiar to the city, which consists of cement and marble broken into small pieces, and of different colors. This is afterwards polished and oiled or waxed, when it presents a clear, smooth and solid surface, shining like a mirror, but a little slippery to walk upon. The ceilings are all left unplastered, and show magnificent beams of wood partly carved, from 40 to 60 feet long, cut from the great giant forests of the Dolomite Alps, which are able to supply Venice now, as they have done for hundreds of years back, with timber for her fleets and palaces.—*Correspondence of the Scotsman.*

STORY OF DOUBLEDAY, PA.

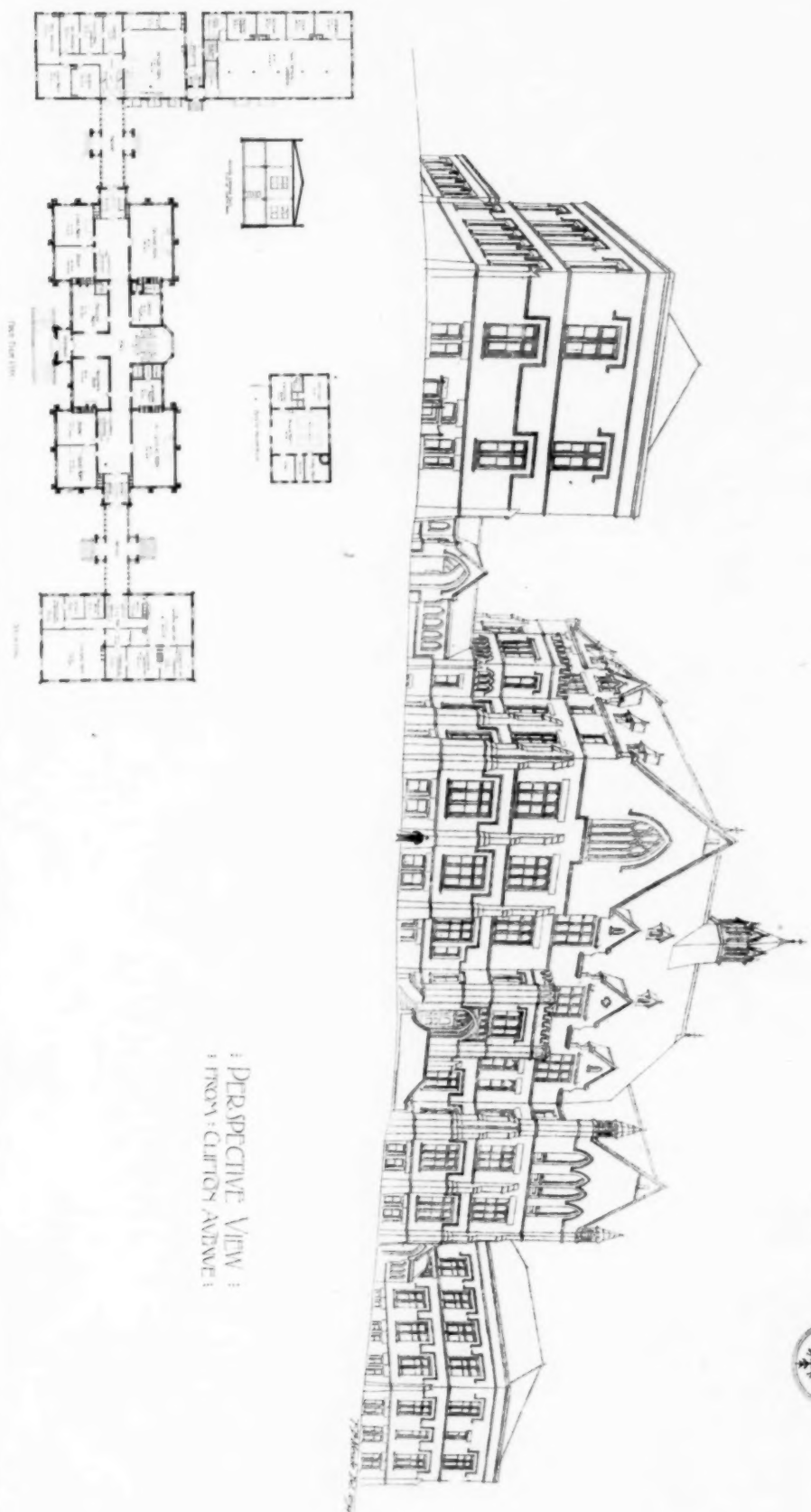


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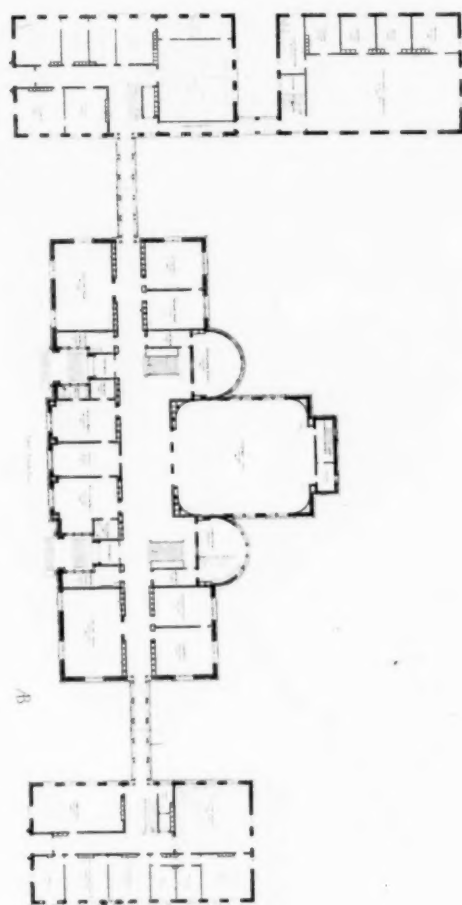
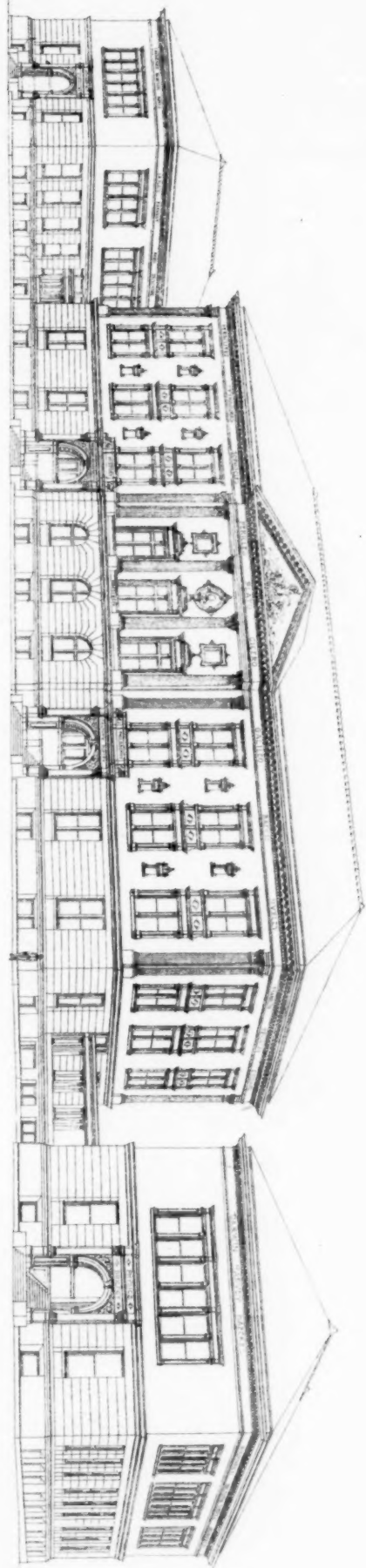
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WILLIAM DUTTON
ARCHITECT

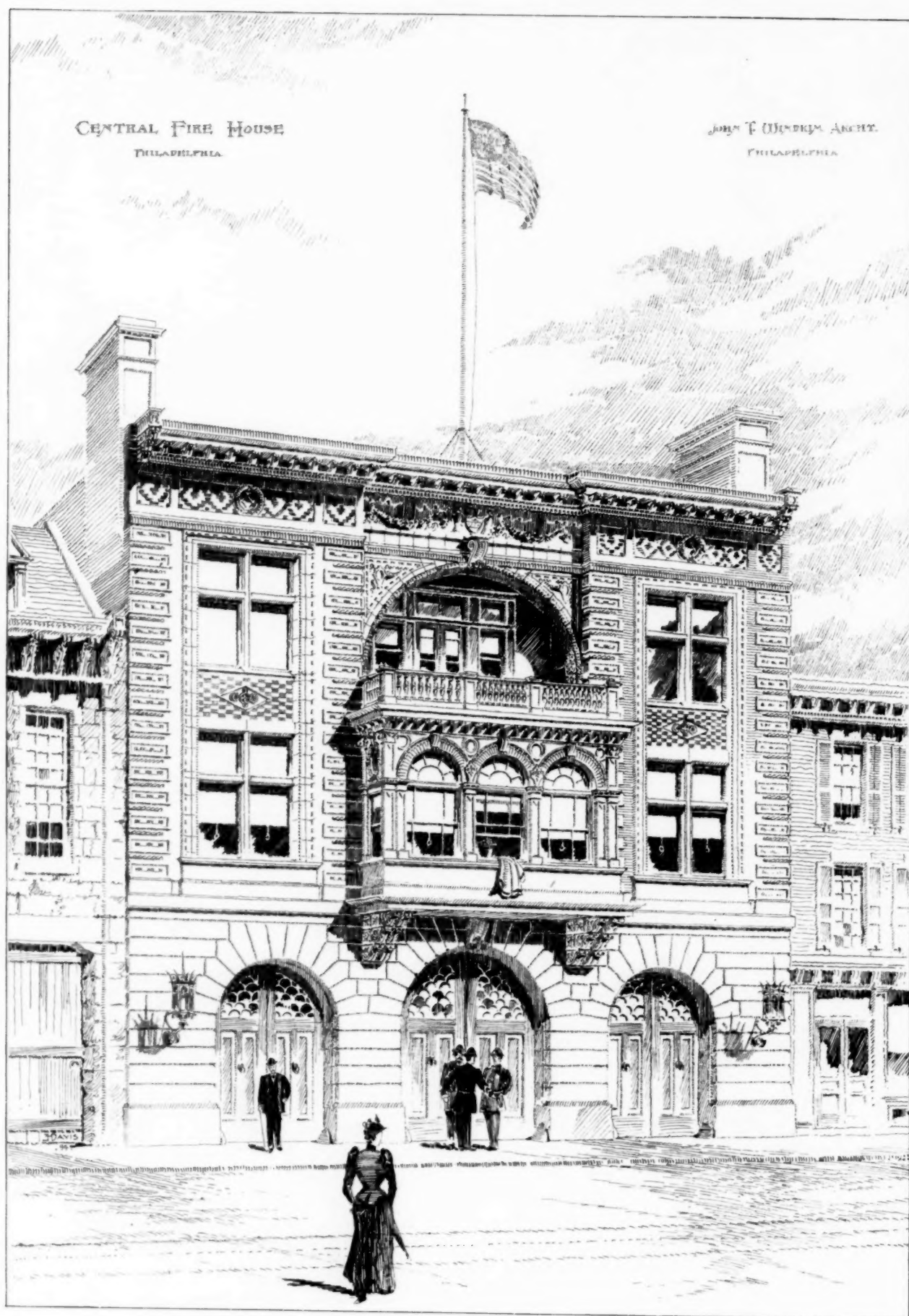


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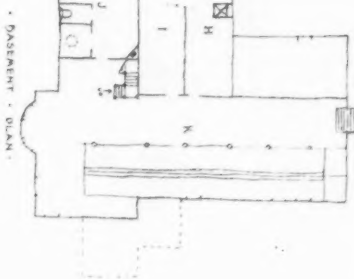
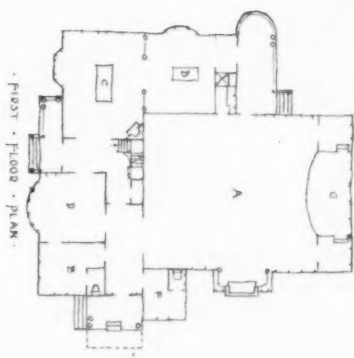
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Competitive Design
 UNIVERSITY OF CHICAGO
 DEPARTMENT OF ARCHITECTURE
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 - K - DOWLING ALLEY.



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