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THE so-called "Mazet Commission," which is inquiring into various reputed abuses of official power in New York, has begun with the Building Department, and has brought out some curious testimony. The newspapers have not looked with much favor on the Mazet Commission, believing it to have been a device of one set of political corruptionists to extort, by a pretence of exposure, from another set of corruptionists a larger share than it now enjoys in the plunder of the great city of New York; but, if this was the purpose of those who had the Commission appointed, they made an unfortunate choice of their counsel, Mr. Moss, for anybody less disposed to smooth matters over, and avoid bringing out unpleasant truths, it would be hard to find in New York. Every architect and builder who has practised in New York has heard innumerable hints at the corruption of the Building Department, with, probably, some definite stories of direct or indirect bribery of officials. So far as the head of the Department is concerned, we are glad to be able to say that we never heard but two of the chief inspectors directly accused of corruption, and both of these were in office many years ago, but it is quite likely that subordinates are not always so scrupulous, and, naturally enough, any instance of apparent favoritism is at once attributed by the people who do not enjoy the goodwill of the Department to bribery of some sort. There has been, however, of late years, a singular system, which is, we believe, peculiar to New York, by which certain outside parties have been reputed to be so influential with the Building Department that they could have plans examined or passed which would not be approved without their favor. A certain Harlem saloon-keeper is said to have been one of these magnetic persons, and a firm of attorneys appears, according to the testimony given before the Commission, to have enjoyed a similar influence. What the end of the matter will be, no one can even conjecture, but, even if the investigation serves no other purpose than to furnish "political capital" for the opposition to the present régime, it will do good.

SO much money is now invested in building operations by syndicates, or associations of persons who buy stock in a corporation, elect trustees, and erect buildings through the medium of such trustees, that it is interesting to follow the financial history of such associations of the kind as have held their investments long enough to show whether they are likely to be profitable. Statistics of some of the Boston building-syndicate operations show that this form of investment is popular, for, at the price at which the shares in completed schemes are sold, the dividends rarely pay more than four per cent interest, and often not so much. The shares in the State Street Exchange, for instance, sell at twenty-five per cent above par, although the annual dividends are only four per cent; and stock in the Tremont Building Trust, which is under nearly the same management as the State Street Exchange, sells at the same price, the dividend rate being the same. Other Boston building syndicates are not quite so successful. In the Winthrop Building Trust, for instance, which is financed with two sorts of stock, the preferred shares are quoted at only seven hundred and fifty dollars, the par being one thousand. There are said to be other syndicate buildings in Boston which are even less profitable than the Winthrop Building, but no quotations on the shares seem to be available. In other cities, where, perhaps, promoters take greater risks than they do in conservative Boston, syndicate building has sometimes been very unfortunate for those concerned, and, if we are not mistaken, two such enterprises in New York have been sold out under foreclosure. One of the largest syndicate structures in the country, the Ellicott Square Building, in Buffalo, is said not to have paid running expenses for a long time after its completion. Where an enterprise of the sort is, as in this case, in strong hands, it is reasonable to suppose that the natural growth of population will ultimately fill it with tenants, and the owners of a well-planned and well-built fire-proof office-building or apartment-house may comfort themselves with the reflection that their income is likely, on the whole, to go on increasing indefinitely, while the owners of a mine, for example, are constantly drawing out their capital to provide themselves with dividends.

THE landscape architects of the country are invited to join an association, known as the National Society of Landscape Architects, which has already been organized in New York, by the choice of Mr. John C. Olmsted, of Boston, as President; Mr. Samuel Parsons, Jr., of New York, as Vice-President; Mr. Daniel W. Langton, of New York, as Secretary, and Mr. C. W. Laurie, also of New York, as Treasurer. The Society defines a landscape architect as a person "who practises the art of arranging land and landscape for use and enjoyment, whose compensation is received directly from his client, and not directly or indirectly from labor, plants or other material used in fitting land for use, or from persons supplying the same," and hopes that the people who answer to this definition may find it a powerful factor in increasing the influence and efficiency of the profession. Junior and associate members will also be admitted, and the organization should do much to develop and bring to public notice the beautiful art of landscape gardening.

THE London Chamber of Commerce recently appointed a committee to inquire into the subject of secret discounts and commissions, by which many persons endeavor to secure business, at the expense, of course, of honest people. The report of the committee showed the extent of the evil, but without proposing any definite means for correcting it; and the architects, who see more than other professional men, perhaps, the injustice done to innocent persons by frauds of this sort, seem to have been roused to an earnest desire to have them corrected, if possible, by some sort of concerted action; and as the same evil flourishes here, our architects will watch with interest the course of their English brethren. In England, as here, the trouble does not seem to lie so much with the giving of bribes, which have small attraction for architects, whatever they may have for official persons, as with the practice of certain dealers and manufacturers of having a variety of prices for the same thing, varying in inverse proportion to the honesty or inexperience of the purchaser. We heard of a case recently, for example, where a certain appliance for steam-heating was called for by name in the specification for a building. The article was a good one, and the architect undoubtedly thought he was doing his employer a service in demanding it in the specification. About the same time, another contract of nearly the same importance was carried out for steam-work, in which the contractor, although not restricted except by a general provision that he should do a good job, used the same

appliance. In everything but price the articles used under the two specifications were exactly similar, but the contractor who was required by his contract to use that particular thing, and no other, had to pay more than three times as much for it as the contractor who was left at liberty in the matter; and, of course, the extra cost came out of the pocket of the owner of the building. As any architect knows, this is a very common experience, and, notwithstanding the impassioned appeals of manufacturers to specify their goods, and their gratuitous supply of specifications mentioning them, the older men in the profession are very reluctant, and with good reason, to call for any appliance or material whatever by name in their specifications. In many cases, knowing the superior quality of a certain article, they would be glad to do so, if it were not for their conviction that they would in that way expose their clients to the risk of being robbed; and they prefer to leave the matter open to competition, even if they have to accept something not quite so good as they would like. That this state of things is not satisfactory either to architects, who wish their clients to have the best things made, or to the manufacturers, who think that their efforts to improve their goods ought to be encouraged, is evident; but the latter have only themselves, or, more probably, their selling agents, to thank for the view which architects take of the matter. No doubt injustice is done to some honorable manufacturers by the suspicion and discredit which the tricks of the other sort have aroused in the profession; but this is not the fault of the architects, who have no means of judging, except by analogy, of the conduct of parties not personally known to them, and our columns are always open to the affidavits of dealers who can lay their hands on their hearts and swear that the net price of their goods to contractors is exactly the same where they are called for in the contract as where they are struggling to "introduce" them in competition with other articles of the same sort.

THE question of the mural decoration for the Memorial Hall in the Boston State-house has taken a new turn, by the introduction of a bill from the Committee on the State-house of the Massachusetts House of Representatives, providing for the appointment of a Commission of seven persons, four of whom must be artists resident in the United States, to act as a jury, and the announcement, within fifteen days after the passage of the act, of a competition of designs, open to all artists resident in the United States, for five mural paintings, for the execution of which twenty-five thousand dollars is to be paid. Whether the bill will be passed by the Legislature is uncertain, but no serious objection has yet been made. We do not know how far the State may be under obligations to Mr. Simmons, and we should not wish to see injustice done him; but a competition of this art, under a good jury, is the proper means for starting the decoration of a public building, and we are only sorry that it was not thought of before.

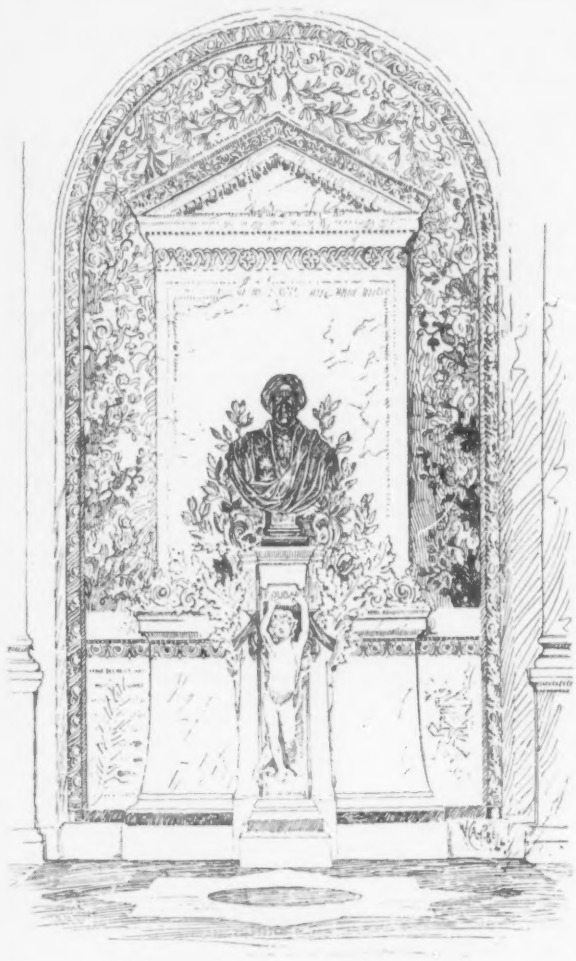
THE State of New York contemplates making additions to some of its prisons, utilizing for the purpose the labor of convicts, and certain labor unions have formally protested against the employment of convicts, on the well-known theory that honest men are in this way deprived of work which they would otherwise have. In reply, Mr. Lispenard Stewart, the President of the State Prison Commission, points out that a Constitutional amendment, adopted with the approval and endorsement of the labor unions, expressly requires that the labor of convicts in prisons and reformatories, after the necessary supplies and materials for those institutions have been provided for, shall be devoted to the State, and to the public buildings and institutions thereof; so that the employment of convicts in erecting additions to prisons is strictly in accordance with the law. Mr. Stewart adds that it is also in accordance with a sound public policy, and most people will agree with him. While much is to be said in favor of the claim that vicious persons, supported by the State, should not be allowed to reduce the wages of honest people by competing for employment with them in the open market, no one would now argue that the convicts ought to be kept in idleness, and to employ them on public work, the expense of which the taxpayers, who support them, must otherwise bear, is as promising a way out of the difficulty as has yet offered itself. The Governor of Massachusetts, a year or so ago, proposed, by an extension of this principle, to have convicts employed in cutting a canal across Cape Cod. Such a canal would be the means of saving many lives each year, to say nothing of its value to coastwise commerce; and as it has been found impracticable to carry it out by private or corporate enterprise, convict labor might, it would seem, be advantageously employed for the purpose. Unfortunately, the Legislature, after listening to dreadful tales of the horrors of the Georgia and South Carolina chain-gangs, could not bring itself to risk the repetition of such horrors in Massachusetts, and rejected the proposition.

THE Trustees of the Boston Museum of Fine Arts have issued their twenty-third Annual Report, from which it appears that the institution has benefited, during the past year, by an unusual number of bequests and gifts, available for meeting expenses, and has utilized them for making needed repairs and improvements. On the other hand, the annual subscriptions have fallen off, and the Trustees appeal to the public again to remember that these form the main reliance of the Museum for its regular support, the income from its invested funds being either specifically restricted, or virtually so, through the knowledge of the Trustees of the wish of the giver, to the purchase of works of art. Among the purchases so made for the year are three original Greek marbles, including a statue, a head, and a sculptured pedestal; forty-seven antique bronzes, four Greek mirrors, sixty-four vases, and a large number of specimens of antique jewelry, gems and cameos, and various books, prints, etchings and engravings, besides two paintings. A very curious and valuable acquisition is a set of fifty-nine moulds for pottery, found at Arezzo, in Italy, and dating from the first century before the Christian era. The Arretine pottery is distinguished by its decoration in relief, and this, which was, as the signatures show, modelled by Greek workmen, shows much of the characteristic quality of Greek sculpture. Casts have been made in plaster from these moulds, which are sold at the Museum for a trifle.

ARCHITECTS and builders will not grieve much at the information that the proposed combination of cement manufacturers, by which nearly all the cement works in the country were to pass into the hands of a great corporation, capitalized at fifty million dollars, is likely to fail, through the persistent refusal of the Atlas Company to join in the scheme. Whether the trust will be formed without this company, as is threatened, remains to be seen, but, in any case, the Atlas people deserve the gratitude of the building-world. So far as concerns the maintenance of prices, architects and builders do not greatly care whether manufacturing is carried on by a trust or not, since it is the owners that pay the bills. But most architects and builders have suffered enough from the insolence and unreasonableness of the representatives of powerful trusts to appreciate the value of trade competition, which, if it does not lower prices, at least makes it worth while for manufacturers' agents to try to get business by courtesy and regard for promises.

PROFESSOR MELANI, of Milan, tells us, in *La Construction Moderne*, that another of the cherished notions of our youth is in danger of being overthrown. We have partially recovered from the shock of learning that Giotto had nothing to do with "Giotto's Campanile," at Florence; that Bramante had no part in the designing of "Bramante's masterpiece," the Palace of the Cancelleria, at Rome, and that the "Pantheon of Agrippa," at Rome, was not built by Agrippa, but by Hadrian, with additions by Septimius Severus, on the site of an older building by Agrippa; and now we are called upon to believe that the Cloaca Maxima, the "greatest work of the Tarquins," was not the work of the Tarquins, but of the republican period; and that, in the third or fourth century B. C., the well-known three-ringed arch was put over what may have been either an open ditch, or a conduit covered in some other way, which existed long before the time of the Tarquins, and was probably formed to drain the lowlands during the construction of the "Romulean" city. Professor Melani does not consider that this view of the Cloaca Maxima rests on such incontestable evidence as that which has destroyed the Giotto and Agrippa legends, but the extended explorations of recent years have not brought to light a single instance of the use, in buildings of the Tarquinian period, of the travertine of which the vault of the Cloaca Maxima is composed; and there are indications that the original covering was simply a corbelled vault, like those of the Egyptians and Greeks.

BERNINI AND THE ITALIAN REVIVAL OF THE BAROCCO.



Monument to Duban at the Ecole des Beaux-Arts, Paris. Guillaume, Sculptor; Bernier, Architect.

THERE has just been celebrated at Rome the centenary of Giovanni Lorenzo Bernini, often called "Il Cavalier Bernino." This signifies much more than homage paid to a great artist: these festivities in honor of Bernini show a new orientation of artistic taste in Italy where, since the first years of the century, one could not speak of Bernini or of the Barocco style.

Let us first recount the merits of this great Italian artist whose genius filled his time. He was a Neapolitan, born December 7, 1598. His father, Pietro Bernini, was a Florentine painter and sculptor, who left Florence and went to Naples, where he married Angelica Galante, of that city, and at Naples was born December 7, 1598 Giovanni Lorenzo Bernini, who gave early evidence of phenomenal precocity. He began his artistic studies with his father, and at the age of only eight years executed a splendid head (reproduced in all the biographies of Bernini) which excited the admiration of everybody. On his family's establishing itself at Rome, he continued his studies, and Pope Paul V, who employed his father, amazed at the precocity of the child, once demanded of him the drawing of a head. "Which one?" asked Bernini, to whom Paul V said, "Evidently he knows how to make them all!" So a "St. Paul," which the pontiff settled on, was produced in a half hour, to the surprise of the Pope. It is at this point that began the artistic life of Bernini, who practised his art during seven pontificates, and put himself at the service of the most illustrious courts of his age; in short, the Michael Angelo of his time, he filled his career to perfection, and I join his name to those of the greatest Italian architects and sculptors — Brunelleschi, Bramante, Michael Angelo, Giovanni Pisano, Donatello. Of a surety, the place of Bernini is at the side of Buonarroti, and since his death Italian art has had no artist equal to him.

As for his architectural work, I must recall at once the Piazza of St. Peter's at Rome. This was a most happy success, and, without contradiction, is the most magnificent on the peninsula. St. Peter's required an atrium from whence Michael Angelo's dome might be visible, and this atrium, on an elliptical plan, with its nearly three hundred columns, has a scenographic effect that is enchanting. To the eye it appears circular and to have a greater depth than it does have. The richness of the entablature and the statues complete the general effect of this design, worthy at all points of that architectural hymn the temple of St. Peter.

All this you know, so I prefer to rummage amongst inedited material. You remember the most monumental fountain at Rome, the Fountain of Trevi, a work truly unique? Earlier, Domenico Fontana and Giovanni Fontana created one, the "Fontanone dell' Felice" (near the Baths of Diocletian), and the other "the Acqua Paolina," with colossal walls and niches decorated with great sobriety, and they caught the water in ornamented basins. The architect and sculptor of the Fountain of Trevi, on the other hand, for architectonic effect substituted a picturesque motive for the sake of showing water in all possible functions and surroundings; everywhere forceful, and not restrained by puerile artifices. He made it jet out of a group of rocks, while the basin seems to have the depth of a lake. Never was a more picturesque idea embodied in any fountain by any artist. Now everybody knows that the work has been credited to an artist of secondary rank, almost unknown, a Roman by the name of Niccolo Salvi. It is well known that Clement XII (1700–21) ordered Salvi to build the Fountain of Trevi, and that up to to-day the paternity of this monument has been generally accepted as his, but the serious examination of this unforgetable work brings the name of Bernini to mind, and suggests the supposition that here, possibly, is question of a work of the architect of the Piazza of St. Peter's, executed in the eighteenth century. Lately there have been discovered the drawings of Bernini for the Fountain of Trevi, with the admirable Neptune, who is the prominent central figure of an incomparable group. In short, Salvi was the artist who worked-out the suggestion of Bernini, and the latter's drawings have been discovered in a collection at Rome.

Again turning to unpublished matter, Bernini practised his pen in the field of caricature, and to-day we possess drawings of his which show a good deal of dash and satiric vigor. One of his biographers, Baldinucci, has written that "the Cavalier Bernino," a faultless draughtsman, had given certain caricatures to art, and, in the "*Journal du Voyage du Cavalier Bernin en France*," printed quite recently, based on manuscripts in the library of the Institut de France, Charles Perrault, brother of the celebrated architect of the Louvre, wrote that Bernini was a fine talker, full of words and parables, stories and "*bons mots*," with which he seasoned the greater part of his talk. Lately, at Rome, a student, charged with arranging the Corsiniana collection of engravings and drawings, discovered certain pen-drawings, which, although they bore no signature, are very reasonably supposed to be caricatures executed by Bernini. He practised this manner of drawing, they correspond in age with that in which the sculptor-architect flourished, and some of them represent personages whom Bernini knew and for whom he worked. These drawings have a comicality and an execution so firm and sure that they show that, whoever the artist was, he possessed a practised hand and a caustic wit.

I have mentioned above the travels of Bernini to France. Our artist had filled the world with his name, and Colbert, who wished to finish the Louvre, believed at one time that he had found in Bernini the artist whom he dreamed of for the palace of Louis XIV. A French biography informs us that after many *pourparlers*, after the exchange of different suggestions, the trip into France was decided on in the month of April, 1665. "It is not believable," says Charles Perrault, in his memoirs, "how many honors were paid to the Cavalier Bernini," but it is not to this that I, gleaner of unpublished matter, wish to draw attention, but altogether to a matter which is wholly unknown. This point is the influence which our sculptor-architect was able to exercise on the architectural genius of England in the seventeenth century. You understand at once, of course, that I am speaking of Sir Christopher Wren. A certain English writer makes certain reservations as to the worth of this architect whose rôle, nevertheless, was so preponderant in his epoch, and in his country, that he became the very arbiter of art in England. Wren, comprehending the insufficiency of his artistic studies, resolved to visit France, and spent considerable time at Paris studying its principal monuments, and in particular the Louvre. It was at this moment that public attention was absolutely captivated by the arrival of Bernini, and, preceded by an immense reputation, laden with honors, as affirmed by Perrault, the famous Italian architect made an immense impression on the imagination of the architect of St. Paul's. The fact is not generally known but it is certain that Wren was much interested in informing himself as to the schemes conceived by Bernini for the grand façade, which, after many vicissitudes, was to be built by Claude Perrault. It seems certain, nevertheless, that Bernini's schemes made a great impression on Wren's mind, who testified to his admiration of the Italian architect in letters full of enthusiasm. So Wren intended to visit Italy, although he did not actually do so, being hindered because of the terrible fire of London in 1666, which caused him to return to England. But on considering Wren's work we see that his real inspiration was drawn from Bernini and that he must have studied his designs, and in no way the French works of Pierre Lescot and Philibert de l' Orme.

Finally, Bernini is the most interesting representative of the Barocco of which the Jesuits were the missionaries — missionaries of a surprising activity, who, especially in Austria, erected a considerable number of buildings that are both grandiose and picturesque. And this art, this architecture which produced in Europe a veritable era of construction of every kind — churches, palaces, châteaux, altars, fountains, funeral monuments — has been condemned and forgotten, as if this Barocco architecture contained no work of excellence, as if in its entirety this architecture had no merit. Rome, Naples, Turin are full of Barocco buildings, and the disdain of yesterday is of late years being translated into a respect which will be followed by admiration for certain of the products of this style. Only fifteen years

ago Italy, the land of Classic art, the land of the Renaissance, which rejected in bulk all that was Barocco in art (the very word being a symbol of contempt) would not have allowed, according to artists, a discussion of the products of this condemned style. And yet not only enlightened architects now know how to appreciate the beauties of the Barocco style, but they envy with all their hearts the artists of the seventeenth and eighteenth centuries the liberty of their thoughts, the gradeur of their compositions, the always capricious accent, the always magnificent impression of their degenerate art. Degenerate? Great God! It is only *just* to accept with some reserve the art of the Barocco, but we can welcome with satisfaction its rebirth in the country of Bernini, where it has as yet attracted only a portion of the Italian lovers of art — for there still exist in Italy a large number of persons who think that Barocco work is wholly void of interest.

Though there have been published biographies of certain Barocco artists, a good work on the despised style still awaits an author and a publisher. So up to the present time we must study the architecture of the period in a work of mediocre worth by Cornelius Gurlitt, published at Stuttgart,[1] which is far from being well known in Italy. But it will be better known, for the love of Barocco work does not seem likely henceforth to undergo a fluctuation, and the origin of its renewing can be found in the liberty of examination which is possible to-day. Once it was only the Classic styles which could reveal the road to the beautiful, so far as Italian artists were concerned, but for some time past the study of Classic styles has brought about the love of all styles; the last of them in date has been the Barocco, which began to be appreciated anew first by the industrial artists. We began by making Barocco furniture, after the style of Louis XV. Surrounded by this furniture in our rooms, we began to open our eyes to the delicacies and elegances of Barocco-work, and after furniture came tapestries, jewelry, and so on, and the love of Barocco-work has swelled and mounted until at last a fête was celebrated in Rome the other day in honor of "Il Cavalier Bernino," concerning whom there was a time in Italy when it was not possible to speak, I will not say with praise and sympathy, but merely with indulgence. In the eyes of people mortally serious, the architect of the Piazza of St. Peter's at Rome was a corrupter, and the one chiefly responsible for the decadence of art: an original, yes, but of a mind depraved.

"*Le temps est un grand maître, il régle bien des choses,*" I will say with Corneille.

Alfredo Melani.

THE LATE SIR DOUGLAS GALTON.

IN his seventy-and-six years Sir Douglas Galton, whose death occurred recently, we record with great regret, played many parts, and if the young generation forgets his services in connection with fortifications and other munitions of war, and later in the furtherance of safety in railway travel, it is only because in recent years he identified himself mostly with hygiene and all that makes for improved conditions of living. Apart altogether from his military and railway service, his sanitary work will entitle him to prominence among the beneficent scientists of the Victorian Era, along with Budd, Farr, Southwood-Smith, Parkes, Rawlinson, Chadwick, and Richardson.

Douglas Strutt Galton was born in 1823, the second son of Mr. John Howard Galton, of Hadzor House, Droitwich, and he was buried recently at the Hadzor Church, near-by his old home, and from his country-seat, Himbleton Manor. He was educated at Rugby School, having earlier in life acquired an intimate knowledge of the French language and literature at Geneva. Choosing the Army as a profession, he entered the Royal Military Academy, Woolwich, where, in his class successes, he gave promise of that concentration of study and rapid assimilation of data which displayed itself in later years when he was called upon to apply himself to the solution of large and varied problems. Passing through the college with distinction, he took a commission in the Royal Engineers when seventeen years of age, and early in his military career found his opportunity, being engaged under Sir C. W. Pasley in the raising of the "*Royal George*," which had sunk with such disastrous loss of life in 1782. It was on the fifty-seventh anniversary of the sinking of the ship that the first effort was made, on August 29, 1839, to blow up the vessel, as it was an obstruction to the navigation of the Solent. Cylinders were sunk with heavy charges, but it was not until well on in 1840, and after the services of divers had been secured, that the wreck was finally got rid of, 52,963 pounds of gunpowder having been used. A large amount of metal was recovered (including 86 guns), and 59,000 cubic feet of timber, but, strange to say, only two guineas were found out of the large sum of money that went down with the ship. It was at these operations that a voltaic battery was first used to fire explosives.

Galton afterwards served for two or three years in connection with the fortifications at Malta and Gibraltar. Returning to England, he was for a short time engaged on the Ordnance Survey, and in 1847, becoming associated with the Board of Trade, a new field was found for his energy, great perception, and common-sense. He was first in charge of the statistical department, and subsequently became the secretary of the Royal Commission appointed to inquire into the application of iron in railway structures. His early studies in physics stood him in good stead, and many of the tests in connection with the inquiry were made by him. Early in the fifties he was appointed an inspector of railways, becoming in 1856 a secretary of the railway department at the Board of Trade. In the same year he visited the United States on official business, and the result of his visit was a report on American railways, which abounded with interesting data, and which, in fact, was by far the best record of American practice extant at the time it was written. It was during his connection with the Board of Trade also that he read his first paper at the Institution of Civil Engineers, of which he became an Associate Member in 1850. The paper came at an appropriate time, when the public were inclined to take a pessimistic view as to the accidents on railways, and when there was a great cry for legislative interference. The paper entered into an examination of the causes of railway accidents. The deaths owing to railway disasters, it was pointed out, were not abnormal, and the author expressed himself as adverse to State acquisition or undue legislative control. Recognizing possibilities of improvement, Galton, then a captain of the Royal Engineers, urged the railway companies to organize an association for the collation and assimilation of data derived from separate experiments, counselled a more intimate control by the board of directors, one of whom should give his exclusive services, and contended for a higher status for all workers, so that dismissal for carelessness would involve greater hardship. It is not necessary to point to the evidences of the realization of these ideas or to the advantages accruing from them. We have more and more come to realize that safety, as well as success, depends as much, if not more, on the men working a system than upon the system itself. In 1866 again Galton raised a vigorous voice against State purchase, as a member of the Royal Commission of that year.

About this time, in 1859, difficulties were being experienced in connection with submarine telegraphy; and as the Government had given a financial guaranty, they appointed a Committee of Investigation, of which Captain Galton was chairman. Not only had the Atlantic cable broken down, but the Red Sea and Indian line had proved unsatisfactory. The Committee, during their nine months' labors, collected data from every source, and in 1861 published a report which was an admirable guide in all submarine telegraphic problems. Galton was a few years later appointed a member of the Consultative Committee, to advise on all questions in the laying of the 1865 cable. Lord Kelvin is now the only surviving member of this committee.

The vigorous policy which was pursued at the War Office after the disastrous bungling in the Crimea campaign resulted in Captain Galton's return to military duties. He had always shown a penchant for sanitary science, and was a member of Rawlinson's famous Commission which reported in such strong terms as to the state of barracks at home and in the Mediterranean station. This, as much as anything, was the cause of his appointment as Assistant Inspector-General of Fortifications in 1860, in which capacity he designed and constructed the Herbert Hospital, at Woolwich, which embodies his views on the subject of Healthy Barracks. From this point his sympathies and influence in sanitation, alike for dwelling-houses and barracks, were ever widening, and, while other work claimed attention, he never forgot this branch of science. He was Assistant Under-Secretary of State for War from 1862 to 1870, and here also his work was in part associated with sanitation. Without aiming at absolute chronological order, some reference may be made to his work in this direction during this seventh decade of the century, when he was, perhaps, at his best. He was a referee on the subject of the main drainage of London, and strongly argued that Barking and Crossness were too near to the Metropolis as outlets for the sewage, and it is unnecessary to show that time has proved the accuracy of his view — that the volume of tidal water there is rather small for thorough dilution. He held strong views on such questions and fearlessly expressed them, and this was partly the reason why he resigned his position at the War Office in 1870.

An equally congenial post was offered him as Director of Public Works and Buildings at H. M. Board of Works, where he continued until 1875, in which year he first became general secretary of the British Association. In the following year he again visited the United States — his first visit was, as we have already stated, as a Board of Trade official in 1856, and this, his second, as a judge at the Philadelphia Exhibition. The paper which he subsequently read at the Institution of Civil Engineers is a testimony to his perspicacity, affording as it does a clear conception of the railway practice in America at that time. The Paris Exhibition of 1878 also occupied much of his time, and in 1878 he entered upon his series of tests of automatic brakes, which are historical. They were conducted on the Brighton, Northeastern, Lancashire and Yorkshire, and other railways, and the results were embodied in three papers read before the Institution of Mechanical Engineers, of which he had become a member in 1862. The first paper was read at the Paris meeting in 1878, the second in London, later in the year, and the third in 1879.

Many other branches of work engaged the attention of Sir Douglas Galton while he was doing good service as general secretary of the British Association, an office he held for twenty-five years, demitting it for the president's rostrum in 1895. His address at the Ipswich meeting dealt with the progress in all scientific pursuits since the founding of the Association, in 1831. Galton was a member of several of the research committees of the Association. He pleaded for the highest recognition for scientists at a time when it was not always regarded as a nobleman's pastime to work in the laboratory, and he lived to see such recognition accorded to many of

[1] "*Geschichte des Barock-Stiles in Italien.*"

his colleagues — to Sir William Thomson, Lister, and others. He himself was made a C. B. in 1865, when at the War Office, and a K. C. B. in the Queen's Jubilee year, 1887. He was a Commander of the Legion of Honor, and held the orders of the Crown of Prussia and of the Medjidie of Egypt. The Royal Society elected him a Fellow in 1863, Oxford made him a D. C. L., Durham and Montreal an LL. D. It was peculiarly appropriate that the Institution of Civil Engineers should elect him an honorary member during the presidency, in 1894, of his great friend Sir Robert Rawlinson. The Institution of Mechanical Engineers first elected him to the council in 1888, and then as a vice-president in 1892. He took an active part in the work, especially in the administration of the Institution's affairs. He was a Fellow of six or seven other learned societies, which need not be named; but latterly he gave most attention, perhaps, to the Sanitary Institute, of which he was one of the founders in 1876. Indeed sanitation was the subject to which he always returned with zest — his two best works are on "*Healthy Dwellings*" and "*Healthy Barracks*." He has been vice-president since the incorporation of the Institute, in 1888, and contributed largely to the *Proceedings*.

Sir Douglas Galton was also one of the originators of the Joint Examination Board, instituted by the Local Government Board, the Sanitary Institute, and other public bodies, and the certificates given as a result of these examinations afford a guaranty of the fitness of inspectors under the Public Health Act. He was an active agent in connection with the Parkes Museum, now supported by the Institute, where teachers and professors are encouraged to give practical demonstrations with the apparatus and exhibits. He was chairman of the International Congress of Hygiene and Demography in London in 1891, and of the Childhood Society for the scientific study of mental and physical weakness of children, which was formed as an outcome of the Congress.

Bearing these facts in mind, there was a peculiar fitness, therefore, in the fact that his last public appearance was at a meeting of the Sanitary Institute, on February 13, when he presided at a meeting held to consider a paper by Mr. R. E. Middleton, "On the Water-supply of London." Sir Douglas then expressed the view that it was prudent for London to be satisfied with the Thames area, and to improve, as far as possible, the water obtained from that area by storing it and by removing those sources of pollution which exist in the upper Thames valley and in the valley of the Lea. At the meeting he expressed himself as experiencing the influences of his advanced years, and was slightly indisposed, but no alarm was entertained until blood-poisoning set in, and from this he died on Friday, March 10th, at two o'clock in the afternoon.

He was buried, as we have already stated, at Hadzor Church, Droitwich, on Tuesday, while his professional friends in large numbers were glad to avail themselves of the opportunity of paying respect to his memory and showing their sincere sympathy with his widow and two daughters by attending a memorial service in St. Peter's Church, Eaton Square, on Thursday afternoon.—*Engineering.*

PUBLIC BATHS AND WASH-HOUSES.[1] — III.

BRANCH ESTABLISHMENTS.

Carpeaux's Bust of Garnier. From *L'Architecture.*

It will be remembered that the primary motive of these branch establishments is that the chief proportion of the ablutionary baths for the poor, and the whole of the public wash-house facilities, should be accommodated in much smaller buildings, erected at much more frequent intervals throughout the poor and populous neighborhoods; and that I have divided these branch establishments into two types and sizes of establishments, calling the first "A" (baths and wash-houses), and the second "B" (people's baths). Typical plans of both are given. These, although but little more than sketches, will serve to sufficiently illustrate my suggestions.

TYPE "A" (BATHS AND WASH-HOUSES).

This, the larger of my branch establishments, is capable of being accommodated on the site of four small houses, and preferably a corner one. Those on the plans are respectively 80′ x 80′, and 80′ x 42′. In both sets the establishment accommodates on the ground-floor the public wash-house, and on the first and second the slipper and rain-douche baths. The basement readily in this case accommodates the boilers.

[1] Portions of a paper read by A. Hessell Tiltman [F.] before the Royal Institute of British Architects, Monday, February 6, 1899, and published in the *Journal of the Royal Institute of British Architects*. Continued from No. 1215, page 13.

PUBLIC WASH-HOUSE.

The present arrangement of the public wash-house in all its details requires overhauling, and in describing the small installation here the direction of some of these will be indicated.

The accommodation in both sets of plans is strictly limited to compartments for from twenty-eight to thirty-seven washers, the whole of which is contained on the ground-floor. The following rooms are required and shown: Wash-house, mangling-room, waiting-hall, cloak and bonnet room, *crèche*, ticket-office.

Wash-house. — In order to plan this apartment properly we must first of all decide what arrangement of drying-closet shall be adopted. The common, and in England the invariable, practice is to collect the drying-horses into one or more steam-heated closets down one side of the room, with the washing-compartments arranged on the other side of it. Each washer has the sole use of a washing-compartment and one drying-horse, both numbered to correspond. The compartments are usually ranged back to back, preferably down both sides of a short bay, and opening at the drying-closet end on to a good wide main passage or gangway. This arrangement, while it minimizes passage-space, keeps the whole of the washers under the eye of the attendant, in patrolling the main passage between the compartments and drying-closets. It also admits of some little classification of the *habituées* of the establishment — a very desirable point. Each compartment is about 3′ 6″ wide, 2′ in depth, and 4′ 6″ high, and contains ordinarily two troughs; one, that at the back, for boiling and rinsing, and the other for washing. Steam is supplied to the back trough for boiling purposes, and hot and cold water supplied to either by means of two cocks with long movable nozzles. The main hot and cold water-supplies may be carried upon iron standards fixed along the top of the divisions, while that for steam should be carried along under the floor, with upward branches to each compartment.

Along the top of the back division is fixed a wooden latticed shelf to take the linen when washed, and underneath receptacles for soap and soda. The divisions are commonly constructed of cast-iron, galvanized or painted; but it is greatly to be desired that some other material could be used for them. I know of no kind of painting that will stand the hot soap and water, and the galvanized metal gets to look in time unutterably dirty.

The clothes, after having been washed, boiled and rinsed, are then taken to the hydro-extractors or centrifugal wringing-machines, which removes about fifty per cent of the moisture from the clothes. It is a great mistake to employ the large-size machine one so frequently sees for this work, and when the gearing is overhead it is then very cumbrous, if not absolutely dangerous. To prevent this, the machines should be of a smaller diameter, 22″ say, and increased in number. They should be entirely under-driven, and so arranged that the washers may readily use them without danger or even supervision.

The heating of the closet is by means of coils of steam-pipes, by which a temperature of 140 degrees Fahr. should be maintained, and in conjunction with *efficient* ventilation the articles of the washers should be dried in twenty minutes.

In this matter of drying the clothes there is room for much improvement; for, although there are several modes of effecting the process, none are perfectly satisfactory. Another point of importance is a better control, by the washer, of her own drying-horse. In the old days of the baths and wash-house movement a system was introduced consisting of the combination of the drying-closet with each washing-compartment, and this was carried out in some few establishments, notably those in Glasgow, London, Hamburg, Berlin, Augsburg and Metz. Although, apparently, this system was abandoned, it yet, to my mind, contains the germ of a perfectly practicable solution of this part of our problem.

Almost more than any other department, the public wash-house demands the best attention and skill of its architect and engineer, to find some efficient means of removing the large amount of vapor that in certain states of the atmosphere accumulates about its upper part. It is, however, a part of the very important question of the ventilation of all parts of the building, into which I must not go to-night.

The drainage into open channels from the wastes of the troughs, and the general surface-drainage of the floor, together with the material and construction of the latter, require great care. The walls should certainly be faced with glazed bricks, and the construction of the skylights and interior of roofing over be of such a character as to be unaffected by moisture. It may be useful to remember that the average stay of a washer in the public wash-house is two-and-a-half hours, and that the average quantity of water used by her is about forty-five gallons.

Mangling-room. — This adjoins the wash-house, and should contain one large and one small steam-driven box-mangle, and tables for folding, etc. Little or no ironing is done in these establishments, the washer preferring to do this at home. It is well, however, to provide a small gas-stove for heating irons to meet the very occasional demand.

Waiting hall. — A considerable amount of waiting takes place in this department, and provision should be made for some fifteen to thirty washers, each one of whom may possibly be waiting to take her turn in the wash-house as a compartment becomes vacant.

Cloak-and-bonnet Room. — The best form of fitting this is by means of a series of small ventilated cupboards with lock and key; the same key should also be made available for the drying-closet, corresponding in number of ticket or tally. If room can be found to provide a dry receptable for bonnet, shawl, etc., in the washing-compartment, so much the better.

Crèche. — This is quite a new provision, and is really the outcome of an experiment which has recently been made in Edinburgh, and has been found to be a great boon to the frequenters of the wash-house. It consists of a large, light and airy room immediately adjoining the washers' entrance, where any washer having young infants, with no one to take care of them at home, may leave them here free of charge during such time as she is engaged in the wash-house. In addition to the large room, a store-room, bath and sink room and water-closet should be provided.

In the first days of the movement it used to be customary to provide for two classes of users of the wash-house, and in any provision for more than fifty washers this practice might with advantage be resumed.

Baths. — These are proposed to be accommodated as follows: slipper and rain-douche baths for men upon the first floor, and with a due proportion of same on ground-floor for women. One class of bathers only is catered for in these establishments, but there would be some difference in the prices charged for the use respectively of slipper and shower baths. A large waiting-room with table, chairs, etc., is provided for each group. The second and third floors are appropriated to the use of the manager and his wife. The basement will amply provide for the necessary boiler, engine, etc., for the requirements of the building, and storage for coal.

TYPE "B" (PEOPLE'S BATHS).

This, the smaller type of my branch establishments, is intended to meet, in the very cheapest and simplest manner, the needs of the very poor for cleansing facilities. It consists of very small establishments of rain-douche baths, built at very frequent intervals, in the poor and populous districts, after the manner of the Germans and Austrians, to the different systems of which countries I have already referred. There is a fear in some quarters that this system of warm and cold shower-baths would not conform to the Baths and Wash-houses Acts. This view is readily corrected by a reference to the Amending Act of 1847.

The accommodation consists of the double cells, 6′ x 3′ 3″, serving as dressing-room and washing-compartments. The temperature of the water would be limited by mechanical means to a temperature of 98 degrees Fahr.; and the supply of this and the cold water is regulated by levers in the foot-gratings or by chain-pulls. The average supply of water consumed per bather in this bath is found to be about thirteen gallons. The divisions to the compartments should be constructed similar to those named for slipper-baths.

These establishments can be made so small and compact as to permit of their erection under our streets in a manner similar to our underground lavatories and conveniences, and I trust ere long to see them so provided.

CONSTRUCTION.

Every part of the public baths, especially those used by the rougher class of visitors, is subject to very rough treatment. The construction should therefore be of such a character as to be able to resist the action of water in every form, whether from carelessness or from the necessities of frequent cleansing. Every part should be comfortable in its arrangement and appointments; and yet easily kept clean, free from vermin, and especially so with respect to the transfer of contagious matter; and last, but not least, it should give the impression of neatness and scrupulous cleanliness in all its parts.

The task of satisfactorily complying with all these requirements in institutions of this kind is by no means an easy one, especially when coupled with the necessity for wise economy in their resolution. Fortunately, the evil results attending the adoption of materials and labor of a cheap and unendurable character are now more generally appreciated. Such a policy has too frequently carried with it its own punishment in the form of excessive periodical repairs, and frequently the cost of entire structural renewal at an early date.

ARCHITECTURAL TREATMENT.

Upon the subject of the external architecture of baths and wash-houses, I would venture to recommend the general adoption of the principle, that the design of the building should clearly express its purpose, quite apart from all questions of style. I mean that a bath and wash-house establishment should appear exactly what it is, and not ape the dignity and expression of the modern town-hall. In the treatment of the natural outcome of the plans themselves there are infinite opportunities for an original and distinctive treatment peculiarly suitable to its purposes and expressive of them.

It will be seen that the subject of this paper is a very large one, and that it is impossible to do justice to it in one evening. I have, however, done my best with each portion of it relatively to its importance in the time at my disposal.

South Africa and Rome. — An effort has been made by Lionel Philips, a South African millionaire who was implicated in the Jameson raid, to buy of the Italian Government a block of houses standing over the site of the Basilica Æmilia, near the Forum. It is believed that an excavation of the Basilica will reveal Greek sports. — *Springfield Republican.*

ONE VIEW OF THE ÉCOLE DES BEAUX-ARTS.

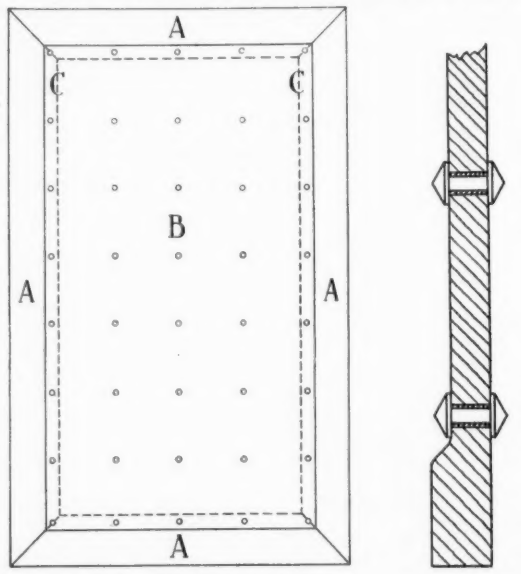
"THE Hôtel Pourtales, of which I have made a ⅜-inch scale elevation, has taken such a time in preparation that I do not feel like putting any more time on that, as I have been nearly a month at it steadily out of the *atelier*. The *atelier* work has been so hard and has taken so much of my time that I have absolutely no chance to work upon other things and have to depend upon night-work to accomplish anything. I had the good fortune to assist in the preparation of three different sets of *diplome* drawings, to say nothing of many regular *esquisses*, so that I have been literally head over heels in work, thus escaping service entirely, and having the best chance to observe and profit by the methods employed here.

"I have purposely avoided making such sketches as would be characterized as 'pretty,' as I felt that more good would come by study of form that I understood than color that I did not understand, until I was in such a position as to study color alone.

"Much pressure has been brought to bear on me here in Paris to stay here two years and study, but I thought that the study of buildings already built would give me what I have been told is gained only by study in Paris, and nowhere else; but I am afraid that the testimony of those who come straight from college directly to Paris to study architecture, and who hold only the opinions of such as are enamored of Parisian life and training, must be taken carefully and not unconditionally, for I can but think that for him who would study the old buildings as they are more good would come than through association with men whose taste in other things is execrable, who as far as plans and planning are concerned are abject followers of books whose subjects are the very buildings I would see and touch; men whose minds seem to be carried away by what might be considered as artistic talismans of success, men to whom any building is 'good' which in plan answers their self-instituted canons of judgment, the exterior of which, no matter how much it may be almost the very incarnation of vitiated taste, is still palatable to them: even as their ill-manners and immorality are condoned because evidences of Bohemianism. I have felt that education of the eye and taste was quite as important as the ability to plan after the French methods, of which I had seen much already, and so I have decided to be on my way as soon as I can to the South of France and thence to Italy."—*Extract from a Private Letter.*

FIRE-RETARDENT DOORS.

IN regard to the recent fire by which the Home Life Insurance Company Building was seriously injured many favorable deductions were made, to the effect that that so-called fireproof building, although injured itself, had probably stopped the spread of a very dangerous and possibly very destructive fire. The facts in the case are that the firm of Rogers, Peet & Co., whose warehouse was burned, occupied two separate buildings of about the same type, one of which was completely destroyed with its contents, developing the fire in the upper stories of the Home Life Insurance Building. The other building occupied by Rogers, Peet & Co. was separated by



a brick party-wall, parapeted out above the roof. In this brick party-wall were doorways at nearly every floor, protected on both sides with automatic fire-doors made of wood encased in tin. The side of the doors toward the fire was exposed to all the intensity of the heat developed in the complete destruction of that building. Yet those doors were but slightly impaired, while the second door on the other side of the party-wall was in perfect working order after the fire was extinguished. This calls attention to the fire-door, while the absence of fire-shutters on the Home Life Insurance Building calls attention to that great negligence.

Some suggestions may therefore be made on the application of fire-doors in other places. By whom it was discovered that the wooden door encased in tin would resist fire where iron became distorted, usually curling outward at the corners, letting the fire pass while it obstructed the fire-service, no one has kept the record. These fire-doors were first introduced in factories by the late William B. Whiting, then in the service of the Boston Manufacturers Mutual Fire Insurance Company. The sliding fire-door running upon a slanted track was devised by the late Byron Weston, of Dalton. The automatic arrangement was first invented by myself in a crude method, since very much improved by others. I have no record of the failure of these doors to stop a fire in any of our risks. We have many instances in which they have resisted fires of great intensity and of long duration.

Many mistakes have been made in their construction. It has been assumed that the metal might be placed only on one side or that it might be placed on both sides, leaving the edges unprotected. These mistakes are due to want of consideration of the true theory of the door, namely, that when the wood is wholly encased in tin or other sheet metal — unpainted tin being preferred on account of the reflection of heat from the bright surface — the wood may be carbonized slowly, but, for want of sufficient oxygen, it will not ignite. It is, however, necessary to put the tin on in small sheets nailed under the lock so that when the sheets of tin are turned on the locked edge the heads of the nails will be protected. Small sheets are used because otherwise the expansion of air bulges the tin.

I now venture to suggest a new method for constructing fire-doors of this type which may be applied not only in factories but also in so-called fireproof office-buildings and hotels, which are usually fitted with expensive wooden doors of hardwood varnished, the varnish being very objectionable, subject to being ignited and burning very rapidly.

The modern method of making tinplate is to roll it in large sheets, which are afterward cut up to order in different sizes. Fire-doors may therefore be made of wood encased in tin in whole sheets, the previous difficulty having been the danger in exposing the heads of the nails to the direct influence of the fire. My device consists in boring a hole through tin and wood and bushing it with a metallic tube, flanges turned over on both sides; then insert bolts with bosses or screw-heads of an ornamental type for fancy doors, or riveted on one side for factory doors. These surfaces may be flat, or, where it is expedient on the inner side of a sliding-door, one large panel may be recessed to the depth of the bolt-heads, so that the outer surfaces of the door all around will be in close contact with the wall and with the door-frame. A drawing of this type is submitted herewith.

In one case, where the doors to a factory counting-room needed a little more of the customary ornament, the main part of the door was made solid encased in tin; then outside of the tin an imitation of panels was made by fastening on a veneer corresponding to the framework of a door; the whole being then grained, the appearance of the door corresponded to an ordinary door. In the factory or wookshop it is much better to leave the surface of the tin unpainted, although we have as yet no test or measure of the reflection from unpainted tin.

With respect to the doors of offices or of hotels, why not give up the conventional form of panels, cover with fine steel, either embossed or treated in *repoussé*, making use of the bolts or bosses for ornamental purposes? The old oak doors of Mediæval type covered with bosses were surely artistic and suitable for their purpose. Steel-clad doors may be made to serve as fire-stops without giving up the æsthetic appearance.

It is tolerably well assured from the experience of the Netherland Hotel, in New York, with a fire which destroyed the contents of one room (this room is kept as the fire left it), that even with ordinary doors a fire may be held in the room in which it originates, provided the fire-department of the hotel is well organized. According to our experience, unless an internal fire-department is thoroughly organized and frequently drilled the internal or private fire-apparatus of the establishment serves to give a delusion of safety but is apt to be useless in an emergency.

In office-buildings there is much more need of fire-doors. Incombustible desks and office-furniture have not yet been adopted in a very large number of the offices. There is a sufficient quantity of the varnished, combustible material to put a great strain not only upon the doors but even upon the construction of the building itself in case a fire gets well under way. Therefore both in hotels and in office-buildings there is an excellent opportunity to substitute an ornamental steel-clad wooden door made of cheap wood. It is probable that such doors can be supplied at much less cost than the heavy hardwood doors finely finished in combustible varnish.

Where transoms are needed over doors they may be glazed with wired-glass and held open by the same type of fusible link which on melting releases the automatic fire-door and will release the transom-window, stopping smoke and flame from passing into hallways.

EDWARD ATKINSON.

ANOTHER SUB-THAMES TUNNEL. — Tunnels under the Thames below London Bridge are multiplying. Hardly has the Blackwall Tunnel been opened when another at Rotherhithe is projected. It is to be 30 feet in diameter, 3 feet more than the Blackwall Tunnel, a mile and a quarter long and to cost $7,000,000, of which $4,000,000 will go for the land needed for approaches. — *Boston Transcript.*

SOCIETIES

NEW YORK SKETCH-CLUB.

THE regular monthly meeting of the Sketch-Club of New York was held at the rooms, Saturday, April 1.

Mr. Charles A. Rich gave a very interesting talk on Egypt and its Architecture, illustrated by many fine lantern-views.

This being the annual meeting, the following officers were elected for the ensuing year: *President*, E. J. Moellen; *Vice-President*, A. M. Duncan; *Recording Secretary*, A. Mertin; *Corresponding Secretary*, W. Ford Howland; *Treasurer*, Edward E. Atkins; *Current-work Committee, Chairman*, E. G. Smith; *Entertainment Committee, Chairman*, W. Buckland; *House Committee, Chairman*, F. S. Roeschlaub.

N. HAUSMAN.

WASHINGTON ARCHITECTURAL CLUB.

THE following resolutions were adopted at last meeting: —

ADDRESSED TO THE ARCHITECTS AND LAYMEN OF THE U. S.: —

We, the members of the Washington Architectural Club, a representative body of architects of the District of Columbia, in meeting assembled, believing that,

While it is true that for a long time in the history of the office known as that of the Supervising Architect of the Treasury there existed a state of affairs which deserved the adverse criticism of the profession at large, those conditions have now been so altered for the better that adverse criticisms are unjustifiable and detrimental to the best interests of the profession, do hereby

Resolve, That this Club extend to the Supervising Architect and his staff its moral support, and desires to uphold them in their earnest efforts to improve Governmental Architecture, and

Resolve, That this Club resents the unjust and sweeping charges of incompetency and mismanagement which have recently been made in the legislative halls of the National Congress, and it is hereby further

Resolved, That this Club believes it unjust to hold the present Supervising Architect responsible for work executed under the direct supervision of his predecessors in office.

EDWARD W. DONN, JR., *President.*
ARTHUR B. HEATON, *Secretary.*

ILLUSTRATIONS

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

HOUSE, FORMERLY, OF MRS. SLOANE, SEVENTY-SECOND STREET, NEW YORK, N. Y. MESSRS. CARRÈRE & HASTINGS, ARCHITECTS, NEW YORK, N. Y.

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

THE WOMAN'S CLUB-HOUSE, BEACON ST., BOSTON, MASS. MR. C. H. BLACKALL AND MISS JOSEPHINE WRIGHT CHAPMAN, ARCHITECTS, BOSTON, MASS.

CHURCH OF ST. JOHN CHRYSOSTOM, PHILADELPHIA, PA. MESSRS. BAILY & TRUSCOTT, ARCHITECTS, PHILADELPHIA, PA.

THIS building is professedly based on Wren's famous Church of St. Stephen, Walbrook.

INTERIOR OF THE SAME CHURCH.

HOUSE OF BISHOP JOHNSON, PASADENA, CAL. MESSRS. LOCKE & MUNSELL, ARCHITECTS, LOS ANGELES, CAL.

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

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

THE RAILWAY-STATION, TOURS, FRANCE.

THIS plate is copied from *La Construction Moderne.*

THE ROYAL PAVILION: EXPOSITION OF 1900, PARIS, FRANCE. MR. E. L. LUTYENS, ARCHITECT.

THIS plate is copied from *The Builder.*

[Additional Illustrations in the International Edition.]

ST. PAUL'S CHAPEL, BROADWAY, VESEY AND CHURCH STS., NEW YORK, N. Y.

[Gelatine Print.]

WE think it would be difficult to pick out a more impressive scene in any American city than this view presents, or one that would offer more suggestion to the student of American manners and customs, past and present. The quiet graveyard in the foreground with its historic dead and the bare indecencies (or rather indecent bareness) of the Park Row Building and St. Paul's Building in the rear form a contrast one would like to escape. The aristocratic sobriety of the old Astor House on one side suggests one period of the city's history, the Post-office, fit symbol of a corrupt and corrupting officialdom, another, while the dome of the *World* building reminds us of other forms of degradation. Even "Knox, the Hatter" is symptomatic of the present times, so far removed from those which saw the founding of the old church which forms the central feature of the group.

CLUB-HOUSE OF THE GERMAN SOCIETY OF CIVIL ENGINEERS, BERLIN, PRUSSIA.

[Gelatine Print.]

THIS interesting building is the outcome of a general competition held among German architects in 1894. It was erected during 1896 and 1897, by Herren Reimer & Körte, of Berlin, the successful firm of architects, on a corner lot 40′ x 93′, all of which area is covered by the building, save a small *courette* of about 130 square feet. The price paid for the site being very high, it was decided by the Society, in order to get the largest possible return for the capital invested, to fit up the first story as a banking-room, the second story also for mercantile offices, reserving only the two upper stories and the attic for the purposes of the Society, an arrangement plainly expressed in the design of the exterior. The material of the façades is a fine-grained, gray sandstone, except the base, which is of granite. The style is German Renaissance in a somewhat free treatment. The bronze bust on the corbel under the bay-window opening out of the room of the Governing Board represents the late Friedrich Grashof, of Karlsruhe, the famous mathematician and mechanical engineer, and ex-president of the Society. The two seated statues over the bay-window, flanking the coat-of-arms of the Society, personify "Theory" and "Practice" respectively. The sculptured reliefs in the five panels under the window-sills represent engine-building, mining, ship-building, and other branches of mechanical engineering. The models for the sculptured work were furnished by Herr G. Riegelmann, of Berlin. The bay-window and big dormer are covered with sheet-copper, the main roof being slate. The net cost of the building amounts to $63,000, this sum being equivalent to a rate of $17 per square foot, or 24 cents per cubic foot. The high cost per square foot is explained by one German source as being due to the comparatively large extent of the expensive façades, in proportion to the area of the site, and, further, to the extra expense incurred through the necessity of making the subcellar water-tight, it reaching below the subsoil water-line.

CREWE HALL, CREWE, ENG.

WEIGH HOUSE CHAPEL, DUKE STREET, GROSVENOR SQUARE, LONDON, ENG. MR. ALFRED WATERHOUSE, ARCHITECT.

NOTES AND CLIPPINGS

STRANGE MARKS IN ENGLISH CHURCHES. — There are on the walls of many English churches, particularly those of the South Midland counties, mysterious marks, some fairly large, many very small, that have puzzled ecclesiologists ever since that inestimable race existed. They are most common on the south wall of the nave and aisles. Almost invariably they are at such a height as would show that they cannot have been made by village idlers of the class who have favored us with so many cup-marks. They fall into three main classes: (1) a dot surrounded by one or more concentric circles; (2) circles containimg radii, more or less numerous; and (3) dots arranged in squares, sometimes connected by lines and sometimes not. With regard to these last, I own I am unable to even suggest a theory. I could give a list of things they cannot possibly mean, but what they do is, as "Jeames" is reported to have remarked, "wropp'd in mystery." The second variety I want to speak of is the circle with radii. Sometimes there are twelve radii, sometimes twenty-four, sometimes an odd number. Sometimes the radii are confined to one part of the circle, sometimes not. It is, confessedly, about this variety that the interest in wall-marks culminates. In some instances there can be no doubt that they are incomplete sun-dials, though in these cases, as at Redbourne (Herts), they are so unastronomically arranged as to lead to the conclusion that our early ancestors were as indifferent as if they had been Orientals, to the flight of time. But the majority cannot by any stretch of the imagination have been time recorders: no one would put a dial on the south inner wall of a church. Another theory which has been started is that these marks are a survival of an ancient belief in orientation. But these marks are not to be found in Norman churches. The earliest we can absolutely date are First Pointed. Why, then, should a heathen belief have lain dormant for a couple of hundred years at least, and then have been suddenly and without reason revived? I desire to reward my readers by propounding a brand-new theory. It is remarkable that we do not find these circular marks containing radii common on our cathedrals or great fanes. Nearly all are on the walls of obscure village churches. We know now that in building minsters and abbeys the workmen had plans and elevations much as they have to-day, but that such was the case with small and unimportant, if equally artistic, buildings is highly improbable. Yet the very regularity of design shows that there must have been some master-mind who directed the whole building. The theory I wish to propound is that some at least of these wall-marks with their varying radii were intended, if the lines were continued, to mark such salient points of the building as the base or springing lines of windows, the elevation of a moulding, of the coping-stone of the gable, or what not. If this should have been the intention of the inscribers it is difficult to imagine any more useful guide to those who desire, either with a view to restoration or for mere study, to discover what like was an ancient church. — *The Church Gazette.*

FLEUR-DE-LIS AND DOUBLE-HEADED EAGLE. — The fleur-de-lis is such a hopeless puzzle that grave authorities regard it as the corrupted figure of a frog, others recognize a phallic emblem, others a bee with wings spread; this last view commended itself strongly to Napoleon. There are serious arguments and illustrations in favor of each origin; the one fact tolerably certain is that Frankish kings bore a cognizance which has developed into the fleur-de-lis, as soon as history gets a clear view of them. Almost certainly, however, that cognizance was not a flower of any sort in the beginning. The history of the double-headed eagle in Europe is known well enough. The German Emperor Conrad saw it at Constantinople when crusading in 1147. Learning that the device represented sovereignty over East and West, he thought it adapted to his own case, and annexed it. The Counts of Flanders were equally struck in the next Crusade, and followed the same course. It was finally appropriated by the House of Austria in 1345; afterward Prussia and Russia yielded to the fascination of its beauty. But when we quit these modern inanities and seek the double-headed eagle in its native home, we are led into the very beginning of things. Tracing the symbol upward, it is found as a common ornament among the Mamluks of Egypt, evidently introduced by the Mesopotamian artists whom they favored. In the Museum at South Kensington are several exquisite works of that period showing the double-headed eagle. It has been suggested that Saladin bore it. His cognizance was certainly an eagle, but one may think that Christian chroniclers would have mentioned it had the bird been double-headed. But the device appears at an earlier date on the coinage of the Prince of Singar, in Mesopotamia; also it was sculptured on the walls of the city of Amia in that region. Passing an indefinite number of centuries, we find it upon the golden ornaments of Mycenæ. But the original is identified, so far, among the most mysterious of peoples, the Hittites. With them it was a very holy and powerful symbol evidently, though the significance is not yet ascertained. On the enormous monoliths of granite before the palace at Eyuk double-headed eagles are carved, holding an animal. So in that wondrous cave-temple of Borghas-Keui, where the gods are sculptured in procession, two of them ride upright on the mystic bird. It is carved above the gates of cities and on their massive walls. We shall know more, doubtless, in good time. — *Pall Mall Gazette.*

A GREAT DRAINAGE CANAL IN INDIANA. — By far the largest system of drainage ever attempted in northern Indiana has been filed by the commissioners of Noble County. The main ditch is 10 miles long, and the width of the bottom varies from 11 to 16 feet. The digging of this canal will lower the water in High Lake 6 feet, Bear Lake 7 feet, Long Lake 6 feet, Munce Lake 7 feet, Port Mitchell Lake 7 feet, and other small lakes which it passes about the same amount. In all there are sixty-six branches. The total length of the main ditch and laterals is 74 1 2 miles. In a straight line they would extend half-way across the State of Indiana east and west. Of the ditch 20 miles are to be tile. The cost of construction will be $75,000. Altogether eighty sections of land will be benefited, or 51,200 acres. — *Correspondence, Chicago Times-Herald.*

THE HIGHEST CHURCH IN EUROPE. — The highest church in Europe — in point of situation, not ritual — is said by the *Home Magazine* to be the pilgrimage chapel of S. Maria de Ziteit, above Salux, in the Swiss canton of Graubünden. It lies 2,434 metres above the sea-level — nearly 8,000 feet high above the forest, near the limits of perpetual snow. It is only open during the summer-time of that region — or, as the folk thereabouts reckon, from St. John the Baptist's Day to St. Michael's Day — and is used only by the Alp herds, who remain there through the summer with their cows and goats, and occasionally by hunters in search of the chamois and marmot. All the inhabitants of Salux climb up thither on Midsummer Day to assist at the first mass and hear the first sermon of the year, and there is also a crowded congregation on Michaelmas Day, at the last service of the year.

A PROBLEM IN WINDOWS. — A New Castle, Pa., congregation is about to build a church. One parishioner offered to subscribe $1,000 providing nothing but white glass was used in the windows. He wanted the pure, bright and glorious sunlight of heaven to fall upon him when at his devotions. But another member of the church said he would give $1,000, and even more, if the windows should be of colored glass. He wanted the lights and shadows that play about him to be softened by the beautiful and delicate tints of the glass-stainer's art. The Building Committee is perplexed to know how they can get both subscriptions. *Philadelphia Press.*

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