

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. LII

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No. 1068.

Entered at the Post-Office at Boston as second-class matter.

JUNE 13, 1896.



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It will be remembered that the City of Philadelphia recently offered prizes for the best competitive designs for the decoration of the Council-chamber in the Public Building. The prizes offered were liberal enough to attract competent artists, and thirty-nine designs were sent in, nearly all by American artists of high reputation. The jury of award was also worthy of the occasion, consisting of Mr. C. Howard Walker, of Boston, Messrs. R. W. Vonnob, E. E. Simmons, Frank Duveneck, J. J. Boyle and John Lambert, Jr., and Miss Emily Sartain. The first prize, of three thousand dollars, with, we hope, the execution of the work, was awarded to Mr. Joseph De Camp; the second prize, of one thousand dollars, to Mr. C. Y. Turner, the third to Mr. F. W. Benson, and special mention to Messrs. E. W. D. Hamilton, F. W. Sheefer, and T. Ketterer. Mr. De Camp is very well known throughout the country as an excellent artist, and the city of Philadelphia is to be congratulated on the noble work which it is to acquire at his hands; Mr. Turner is practised in decorative design, having taken the second prize in the Oyer and Terminer Court-room competition, in New York, while Mr. Benson won recently the Shaw prize at the Exhibition of American Artists, in New York, and Mr. Hamilton has lately received professional honors.

We should not like to be accused of sentimentality, but we are willing to run the risk of that for the sake of calling public attention to the bright prospect which these competitions, and, still more, the fashion which they are rapidly disseminating, of having public buildings worthily decorated, by real artists, offer for the future of art in this country. The great obstacle to the development of painting here has always been the lack of public appreciation of good work, a lack which comes principally from the fact that the public has almost no opportunity of seeing such work. In every Continental country, the churches, which are always open to everybody, are filled with altar-pieces and other painted decorations by the best artists of their time, and the constant study of these works soon establishes a standard in the public mind. Here, there is practically nothing of the sort. The museums contain good pictures, and, so far, are of great service, but a heterogeneous collection of small canvases in a gallery does

not do much to prepare the mind for the unity of a great picture, and it is not surprising that the judgment even of the people who know pretty well the Pre-Raphaelite room, and the Barbizon room and the Impressionist room of their local museums is apt to hesitate in regard to the merits of a picture in that best of all styles, the style which has no name. From this uncertainty the extended practice of mural decoration will do much to relieve us. No Venetian who had attended public receptions under Tintoretto's ceilings in the Ducal Palace, or had studied Titian's and Veronese's sacred pictures in his more solemn moments, could be imposed upon by the cheap, factory-made paintings which sell by the thousand in this country, and to furnish our people with good painting in public places is to introduce a sympathetic and imaginative race almost for the first time to the greatness and beauty of the most easily appreciated of the fine-arts. We may be sure that the lesson will not be lost upon them, and the next thing will be to try to guide the artists employed for such work in a direction in which they may themselves meet, and be inspired by, the public interest which they awake. There is enough pictorial suggestion in American life and American character to furnish all our artists with all the suggestions that they need, and the American public needs to have its sympathies and aspirations expressed in its fine art. It is a satisfaction to know that Mr. De Camp, Mr. Benson and Mr. Hamilton at least are thoroughly American,—not in the way of plastering screaming eagles over their canvases, but in their understanding of the finer American qualities, and their work, done on a great scale, and with the enthusiasm which a great opportunity inspires in every true artist, may be a revelation.

The architect of the City Hospital of Newark, N. J., has, it is said, in conformity with the requirements of the city authorities, furnished bonds, to the amount of twenty thousand dollars, to indemnify the city against expenditures in excess of two hundred thousand dollars, or those incurred by reason of the neglect of the builders to conform to the specifications. We trust, for the sake of the profession, as well as of the architect of the hospital, that the story is not true, for the obvious reason that either the contractor or any member of the building-committee can ruin the architect without difficulty if he should take a fancy to do so. As for the contractor, nothing is necessary, if the architect should offend him, but a hint to his men to leave out half the nails in putting down the matched floors, when the architect is not watching; or to refrain from unnecessary exertion in trowelling the plaster on the ceilings; or to put on the brackets of the exterior cornice with glue, instead of nailing them, or to caulk the joints in the waste-pipes with paper, with a little lead run in on top, to make the fate of his victim sure. None of these tricks could be detected, even by an expert, in the ordinary course of supervision of buildings, nor could any architect, however zealous and suspicious, discover them without tearing up floors, or knocking to pieces finished work, a thing which architects are rarely authorized to do; yet they would all become apparent in a year or two after the completion of the structure, and, under an arrangement by which the architect, instead of the builder, shouldered the latter's violations of his agreement, the architect's bond would not go very far toward making them good. As to the committee, it is hardly necessary to point out that they also hold the fate of the architect in their hands. He has, if the story is true, bound himself in the sum of twenty thousand dollars, to have a certain building completed for a certain sum, and has made them the judges, to say when it is complete. Now, the "completion" of a building, as experienced architects are well aware, is an indefinite expression, which generally means one thing to the contractor, a very different thing to the owner, and something intermediate between the two to the architect. In this case the owners, as represented by the committee, alone decide the matter, and, by the agreement between them and the architect, the completion of the building is a different thing from the completion of the contract; so that, after the contractor has done all that he feels disposed to do for them, they still have twenty thousand dollars of the architect's money out of which to pay for any additional work that they may think desirable to "complete" the building according to their ideal.

IT is incredible that an architect, with anything to lose, should be so reckless as to expose himself to almost certain ruin in this way. If he has nothing to lose, his own recklessness is accounted for, but his bondsmen must have a touching faith in the guilelessness of contractors and city councilmen, to expose their property to such chances. The *Engineering Record* makes some excellent observations on this transaction, in the course of which it says, most truly, that "Any endeavor, such as that contemplated, to shift responsibility so as to prevent its resting where it belongs, is thoroughly irrational, and must inevitably impair the efficiency of both the architect and the contractor. It rewards the irregularities (to use no stronger word) of the latter, by removing responsibility, and it heavily hampers the former by placing upon him burdens not his own, if, indeed, it does not tempt him to overlook faults of material and construction. The procedure is utterly unbusinesslike, unprofessional, and full of danger to all parties concerned. No corporation should desire it, and no architect should consent to it." Probably some architects will think that these expressions are overdrawn, and that, with clients and contractors of ordinary honesty and fairness, there is not danger enough to make it worth while to risk the loss of an important commission by refusing to give bonds. Let us assure those architects that they are sadly mistaken, and that the warning of the *Engineering Record* is not half forcible enough. We have known of only one case in which an architect with anything to lose was involved in a bond of this sort. All the parties were honest and amiable, but business was business with them, as it is with most people, and the affair ended in the suicide of the architect, and the transfer of all his property to his amiable but businesslike clients.

THE University of California has taken a very sensible step in deciding to make provision at once for a systematic and well-studied plan for the buildings which it now needs, and for those which it is likely to need hereafter, for, at least, the next twenty-five or thirty years. The University owns a beautiful tract of land at Berkeley, near San Francisco, and proposes to invite a general competition for a system of buildings suitable for erection on this tract, with, naturally, suggestions for an appropriate topographical scheme. It is intended to select in the first competition, which will be for sketches only, a certain number of plans, the authors of which will be paid a suitable sum, and compete for the final award, which is to carry with it the making of designs for all the buildings likely to be needed for a quarter of a century to come, and their execution, as the necessities of the University may require them, and its resources permit their erection. It is well known that the University of California has made a very rapid growth in influence and importance within a few years, and the Regents could hardly have taken a wiser or more judicious step than in providing thus early against the wasteful inconveniences arising from a confused arrangement of such buildings, as well as in securing for future generations of young people the æsthetic advantage, which is every day becoming better understood, of artistic surroundings at the most impressive period of their lives.

IT is a misfortune that the excellent intentions that have animated the Regents in formulating their programme are not likely to evolve better results. They have sought advice and enlightenment from members of the profession in all parts of the country and have received it without stint, but it has evidently been of a very varying and often contradictory character. Doubtless, much advice that was rational and excellent had to be set aside, as it was found to be in opposition to the enabling legislative act which governs the Regents' course and makes a public competition obligatory. The double-competition method is peculiarly adapted to the problem in hand and if the requirements of the programme for the first one are as simple, and the requirements as exactly stated as they should be, the fifteen prizes of five hundred dollars each offer a sufficient incentive and a fair recompense if the number of competitors is not to be unduly large. But if the requirements are simple and the rewards fairly attractive, a very large number of designs will be sent in, not by the leaders of the profession, but by the average practitioner, the draughtsman and the office-boy, not only in this country, but in England, France and Germany as well, for architects in these countries are especially invited, and are promised they each shall have a representative on the jury. What is likely to be the result of

this competition so conducted? This: the Regents will, if properly aided by their experts, find that the solutions presented will arrange themselves in half a dozen general groups, one group of which will be found to be pretty obviously the "plan type" the Regents are seeking. But there may be scores and scores of designs which all contain the essential elements, and all practically identical with one another, and yet, one and all, the work of men to whom no sane business man would entrust the work. It is one thing to perceive how to do a thing, but quite another thing to do it. Invention in all of its forms is largely a matter of accident, and the discovery of a typical plan is often as purely an accidental matter as any other "discovery," and in the discovery of the germinal idea of the solution of such a problem as this the tyro and Nestor are more on a par than the latter likes to believe, and it is tyros and not Nestors who will risk their time and labor in a scramble that is open to all the world. The Regents, under the terms they propose may count on having many schemes presented to them — so many that it will be impossible to award the few prizes with fairness — and may, after all, find that the method they have followed has deprived them of the very aid they desire to have.

USERS of the Welsbach light, among whom must be numbered many architects, will be glad to hear that a process has been invented and patented by a German, Herr Langhaus, which seems likely to reduce the cost, and greatly improve the durability, of the mantles. In this process, a cone is first prepared, woven out of very fine platinum wire. By mixing nitrates or sulphates of the zirconium or thallium employed with certain bases, and sending an electric current through the platinum mantle while immersed in the solutions, the zirconium or thallium oxides are deposited on the platinum, and are in that state calcined, covering the platinum wire with a very porous sheet of calcined oxide, which gives a brilliant light when raised to incandescence, and, being held together by the wire netting, is far less fragile than the usual form of mantle. The weight of platinum for a mantle is very small, so that the entire cost of the burner, chimney and prepared mantle is said to be only fifty cents, and, after the oxides are burned away, the mantle can be cleaned and covered with a new coating.

THE Society called the Musée Social, or Social Museum, of Paris, has recently been presented with a large sum of money, to be used in carrying out the objects for which it was founded, and has decided to utilize a part of it for prizes, to be offered for the best essays on certain important social subjects. The first of these prizes, consisting of a cash premium of five thousand dollars, is to be awarded next winter, for the best tract on profit-sharing, treating of the history of the system, the results and present methods of applying it in actual cases, and the effects which it has produced, or seems likely to produce, upon the relation between employer and employed. This competition is open to all the world, but the competing essays must be written in French, and must be delivered at the office of the Society, No. 5, Rue Las-Cases, Paris, before December 31, 1896. The second competition, for which a similar prize is offered, is for the best essay on Coöperative Associations, of workmen or others, for manufacturing or agricultural production, purchase and distribution of supplies, the investment of savings and loaning of money, and the building of houses. The essays on this subject must be delivered to the Society before December 31, 1897.

BESIDES these prizes for essays, the Society offers twenty-five prizes, each consisting in a paid-up annuity policy, to the amount of forty dollars a year, accompanied by a medal, to deserving French workmen. The recipients of these prizes are to be chosen among men at least sixty years of age, who have worked in the same shop for not less than thirty years, or have in some other way earned exceptional distinction. Meanwhile, the Society has decided to send representatives to England and Germany, to study the social peculiarities of those countries, and, in particular, to inquire into the effects of the State socialism which has become so marked a feature of the German administrative policy. Our readers know that there is very grave doubt among students of economic question as to the wisdom of the new German measures, however commendable may have been the feeling in which they originated, and the report of the French experts, which will probably appear next winter, is likely to be of great interest.

HISTORY OF THE UNITED STATES CAPITOL.¹—III.

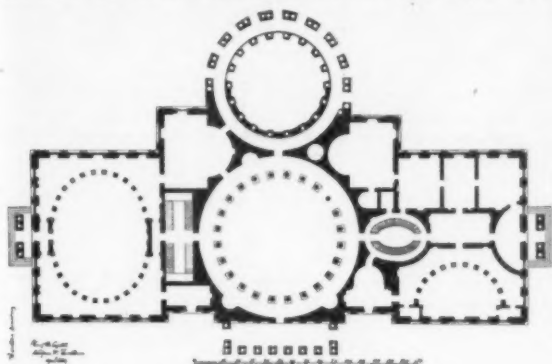


Fig. 18. Thornton's Revised Plan of the Capitol.

THE President appointed Thornton to be one of the three Commissioners in charge of the District of Columbia, September 12, 1794. At this period Andrew Ellicott, who was engineer in charge of laying out the streets and lots, congratulates Thornton, and rejoices in the appointment, for the good of the streets and buildings, saying that the former Commissioners were totally ignorant and easy prey. He warns Thornton to be on his guard. Washington requested Thornton to restore the Capitol to a correspondence with the original plan.

I have been fortunate enough to find several of Thornton's drawings which relate to this period of the building. These plans Thornton, Washington and Jefferson considered the original design which won the competition, modified in scale for the sake of cheapness.

The following endorsements are on the drawings :

"Plans of Capitol received from Dr. Thornton (Fig. 18).

"April, 1804."

"B. H. LATROBE.

"Given to me by Geo. Blagden as the only existing drawing of the Capitol (Fig. 19).

B. H. LATROBE.

"May 4, 1803."

"Mr. Jefferson in putting this into my hands stated that he had communicated with Dr. Thornton on the plan submitted by me for putting a story of offices under the Hall of Representatives and that Dr. Thornton had, in consequence, given him this plan as showing how the projection might be effected, but at that time my plan was already in progress (Fig. 20).

"B. H. LATROBE.

"February 1, 1805."

The front elevation (Fig. 21) is taken from the margin of a map by Robert King, published about 1803, although the exact date is missing. "East Front of the Capitol of the United States as originally designed by William Thornton and adopted by General Washington, President of the United States," is the title of this engraving.

This statement is an error, as this is not a reproduction of the original or competitive drawing, but it is the design made by Thornton after Hallet was discharged.

Among Thornton's papers I found the following notes in his handwriting on this modification of the competitive plan. The sizes mentioned show that it relates to the building as it was finally erected. The drawing referred to in the descriptions was colored :

GROUND-PLAN.

- A. Depository under dome. (Thick wall.)
- B. Room under ante-chamber. H, R.
- C. Vestibule to Senate Chamber.
- D. Under. E, D.
- E, E, E, E. Offices, clerks' and committee rooms.
- Suggests covered carriageway.
- I, I, I. Platform. K, K. Stairs.
- L, L, L. Windows in M, M, M, water-closets.
- N, N. Niches. O, O. Fireplaces.
- Q, Q, Q. Passage (illumination by transoms).
- R. Recess.

The extreme length of plan is... 352 feet.
The extreme breadth of plan is... 221 "
Height of basement story..... 20 "

PLAN NO. 2.

- A. Centre of dome. Dome supported by columns 30 feet high. All interior decoration should be of white marble. (No marble in this country yet of sufficiently good quality.) The very best workmanship and material should be used.
- B, B. Landing of east stairs.
- C. The Executive Department. (To be heated by two ornamental urns.)
- D, D. Passages.
- E, E. Closets.
- F. Water-closets.
- G, G. Great Conference Room.

When Thornton again took charge the work was below the ground. He drew another elevation "presenting the general ideas, but making such alterations as the difference in dimensions of the ground-plan

¹All rights reserved. Continued from No. 1065, page 77.

rendered necessary. I improved the appearance and restored the dome" (Fig. 21).

The square foundation laid by Hallet in the centre of building was taken up, portions of this foundation being left for the temporary structure erected to accommodate the House of Representatives. In this way was the last of Hallet's changes obliterated.

Under the management of Thornton as a Commissioner of Federal buildings and Hoban as Superintendent, the work progressed rapidly

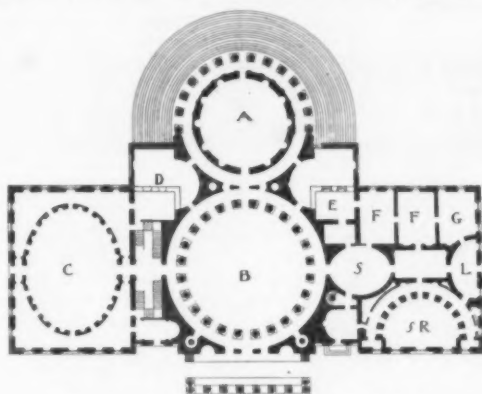


Fig. 19. Thornton's Revised Plan of the Capitol.

- A. Conference Room.
- B. Grand Vestibule.
- C. House Representatives.
- D. Library.
- E, E. Clerks.
- F. Court.
- S. Stairway.
- SR. Senate Room.

and satisfactorily. December, 1794, James Reid, James Smith and Geo. Walker contracted to furnish stone and James Dobson made a contract to lay the stone. In March, 1795, Thornton's fellow-commissioners desired him to go to the President, "with whom he had many conferences with reference to this subject," and get a decision from him in reference to the cost and material to be used, their determination being to push the Capitol this season [1795] beyond other measures.

Hoban became restive under the continual calls made upon him for additional service without extra compensation. His letters and actions had always shown that he thought the Commissioners were requiring too much in having him superintend both the President's House and Capitol. Consequently on April 30, 1795, the following agreement was made: "The Commissioners agree with James Hoban to take upon himself the superintendence of the said building [the Capitol] for the whole of the present building-season unless sooner discharged by the consent of the Board. They also agree to allow said James Hoban twenty-five guineas per month extra wages for his attention to the Capitol, his wages to commence from this day."

June 3, 1795, Colin Williamson, master-mason, was dismissed for inefficiency.

In the autumn of 1795, the basement of the north wing was about complete.

John Trumbull, United States Minister to England, wrote to the Commissioners, September 13, 1794, when he heard of Hallet's resignation, recommending Hadfield as an architect of great merit. January 2, 1795, the Commissioners—Thornton at this time being one of

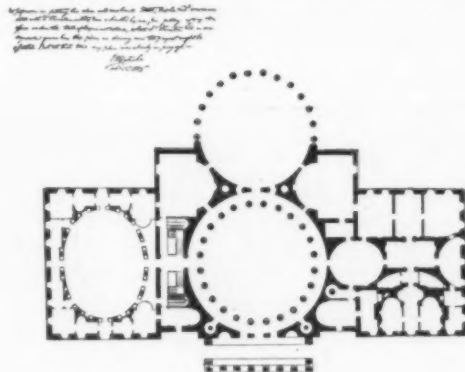


Fig. 20. Thornton's Revised Plan of the Capitol.

the Board—offered George Hadfield, through Minister John Trumbull, £300 and travelling expenses for his services "as superintendent of the Capitol." In this letter they state that "the conduct of Mr. Hallet was capricious and obstinate; his refusal to deliver up such sections of the Capitol as are wanting obliged the late Commissioners to discharge him."

March 9, 1795, Trumbull gave Hadfield a letter of introduction to Thornton, in which he says, "I had before understood that your

design had been generally adopted. I am glad to learn that I was rightly informed, as I should have been mortified to have known that so noble a plan had been passed by . . . I have known him [Hadfield] at least ten years and have seen in him nothing to diminish my esteem. He is modest, unassuming and correct in his taste and judgment, and should any difficulties occur in the executive part of the plan he will state them with candor." Developments in



Fig. 21. Thornton's Revised Plan of the Capitol.

Hadfield's career show that Trumbull was sadly mistaken in his estimate of his friend's character. George Hadfield received his appointment October 15, 1795, as superintendent of the Capitol, and he had no sooner taken his place than he recommended numerous alterations and additions, among them being the addition of an attic story to the building.

November 18, 1795, Dr. Thornton and James Hoban opposed Hadfield's suggestions as impractical, and the matter was referred to the President. Hadfield waited upon Washington, who received the suggestions with so little favor that Hadfield resigned. He soon reconsidered his resignation and was reappointed, a special stipulation being made "that he was engaged to superintend the execution of the plan without alteration."

Hoban's services, except when called in consultation, ceased upon the appointment of Hadfield, — Hoban acting as superintendent of the President's House and Hadfield as superintendent of the Capitol. Judging from orders, letters and reports, they were considered to have positions of equal importance. Each had a salary of \$1,400 a year, paid in quarterly instalments.

May 31, 1796, the Commissioners wrote that they cannot guard against imposition, as they are not able at present, on account of lack of houses, to live in Washington, therefore they must depend upon the superintendent and "undertaker" or builder. Hadfield's early experience does not seem to have taught him discretion. On June 29th he informed the Commissioners that he would quit the public service at the end of the three months' notice required by his contract. The Commissioners seem to have been quite independent at this period, for they informed Hadfield that he could quit as soon as he pleased, and that they would pay him a sum equal to his passage to Europe. Upon the receipt of this determined reply, Hadfield withdrew his notice, and agreed to attend to the Capitol according to methods approved by the President. The Commissioners allowed him to stay on sufferance, retaining the advantage which he had given them by his serving three months' notice. From this time until the end of his service everything seems to have run with comparative smoothness. Orders and letters indicate simply an inspection of materials and workmanship and the making of reports, contracts and estimates of the work as it progressed.

Contracts were made early in January, 1797, with Middleton,

irregularity of the present work, it being not in order but deviating from the true proportion, and, the Board having given a negative to the same, I do hereby enter my protest against their proceeding, because this imperfection will remain a disgrace to the building, because it can be substituted without any loss of time, . . . and, finally, because it can never be renewed or corrected, but will forever remain a laughing-stock to architects." Thornton was overruled in this as well as in another protest, which he made against the use of pine for doors, — he desired mahogany.

Thornton was always the advocate of good construction and material, but his *confrères* did not always uphold him when his plans caused an increase in the first cost. The errors against which Thornton protested were undoubtedly caused by the inefficiency or carelessness of Hadfield.¹

On May 10, 1798, the Commissioners gave Hadfield three months' notice that they would discharge him. He did not apparently wait for his three months to expire, for on May 28th the following letter was sent to Hoban: "Ordered that James Hoban take upon himself the superintendence of the Capitol, and that he remove to reside there as soon as possible, and, until possession can be had of the house now occupied by Mr. Hadfield, that the Board will pay the rent of any house he may engage near the building."

They gave Hoban a double salary until June 9th, "and until roof is on President's house he is to receive in addition to the \$1,400 for Capitol superintendence one hundred guineas per annum for directing operations at the President's house."

Hadfield's official discharge was made June, 1798. The reason given was that he refused to give up the drawings of Executive offices.

We constantly see it mentioned that Hadfield was one of the architects of the Capitol, but the records show explicitly that he was only employed to superintend the erection from Thornton's design and plan, and although he made suggestions, none of them were adopted. Hadfield was, furthermore, inefficient as a superintendent.

Among Thornton's papers is a statement saying that Hadfield acknowledged that he had never superintended either a public or private building before his employment on the Capitol. Thornton states that he [Hadfield] was entirely incompetent from a practical point-of-view.

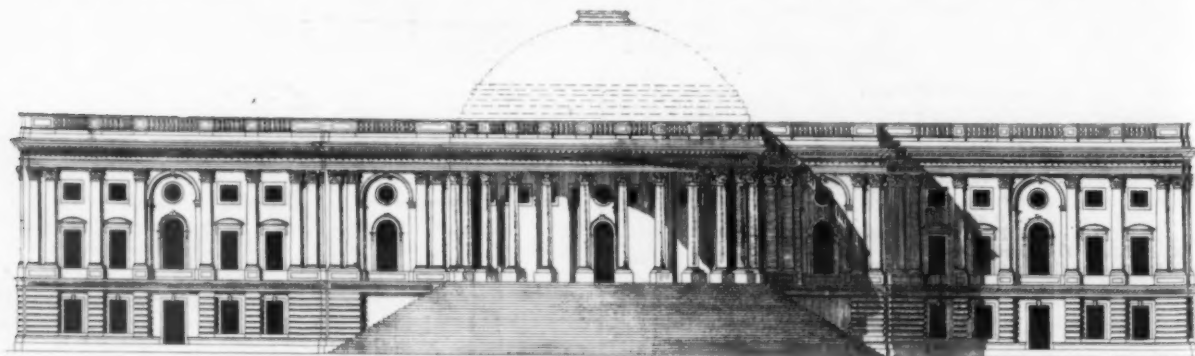
Some years later, when Latrobe wished to prove that Thornton's plan had been materially changed, he wrote as follows to Hadfield: "If you could go over your drawings and ascertain what is his [Thornton's] in the plan now said to be the original plan, I should be infinitely obliged to you, . . . if in any way it can lead to the removal of the load of calumny with which you have been treated."²

What more advantageous opportunity could Hadfield have desired to present his claims? That there is no foundation for such assertions is proved by the fact that neither specific claims nor proofs were presented at this time.

In the portions of a pamphlet published by Hadfield in 1819, which I have seen, he makes no claim in reference to having any of his own ideas incorporated in the plan or design of the building.

From this period until the office of Commissioners was abolished the work progressed rapidly and satisfactorily.

April, 1799, Hoban called on Thornton for sections of the Capitol. All drawings in the hands of the Commissioners were turned over to Hoban, and we learn from a letter of a later date that other drawings were made for him by Thornton. This proves that at this date,



ELEVATION OF WEST VIEW OF CAPITOL.

RESTORED FROM ORIGINAL PLANS
AND EAST ELEVATION

W. THORNTON ARCHT

Fig. 21a.

Belt, Bennett, Fenwick and Marshall Waring to furnish brick, and Allan Wiley to do all brickwork for the season. We also learn that brickwork in this year was discontinued as early as November.

The Commissioners omitted ventilating-flues for the galleries of the Senate, and Thornton records his dissent June 30, 1797.

January, 1798, Thornton puts on record the following protest against the workmanship of the cornice, north front [this is in the portion of the building where the present Superior-Court room is situated], "which includes the modillions, and which are now worked, but not put up, — be rejected and worked anew on account of the

even while acting as Commissioner, Thornton was still expected to make drawings for the building when the data were not sufficiently

¹ George Hadfield, as mentioned above, came to this country to superintend the Capitol, on John Trumbull's recommendation, and from 1795 to 1798 he was employed on this work. Hadfield was an Englishman, educated in London. He drew the plans for the old Executive Department Buildings and the City-hall, also for the Tomb of Van Ness. He died in Washington, 1826, and is buried in the Congressional Cemetery. — See article by Howard, *International Review*, page 737.

² J. H. B. Latrobe's address before the Fifteenth Annual Convention of the American Institute of Architects.

clear. There are records of several contracts¹ being made at this period by men who in after years took a more or less active share in the completion of the old Capitol.

In 1797, President Washington, who had taken such an active personal interest in the Capitol, retired from the Presidency, dying two years later. John Adams, who succeeded him, judging from his correspondence, did not take an active interest in the building.

1800 was the year fixed by law for the Government to take its permanent seat in Washington City. Accordingly, in that year, the latter part of May, the President and his Cabinet with the different Executive Departments and both Houses of Congress were moved from Philadelphia to the Federal City.

The second session of the Sixth Congress convened November 17, 1800, in the north wing. On this occasion, in his opening speech, President John Adams said:

"I congratulate the people of the United States on the assembling of Congress at the permanent seat of their Government, and I congratulate you, gentlemen, on the prospect of a residence not to be exchanged. It would be unbecoming the representatives of this nation to assemble for the first time in this solemn temple without looking up to the Supreme Ruler of the universe and imploring his blessing. It is with you, gentlemen, to consider whether the local powers over the District of Columbia, vested by the Constitution in Congress of the United States, shall be immediately exercised. If, in your opinion, this important trust ought now to be executed, you cannot fail, while performing it, to take into view the future probable situation of the territory, for the happiness of which you are about to provide. You will consider it as the capital of a great nation, advancing with unexampled rapidity in arts, in commerce, in wealth and in population, and possessing within itself those resources, which, if not thrown away or lamentably misdirected, will secure to it a long course of prosperity and self-government."

In what room the House held its first meeting the records do not show, but it has been stated that they met in what was planned for the Library. This was probably on the west front, opposite the Senate, — the room which was afterwards used as the Library. They evidently found their quarters too limited, for on May 28, 1801, Hoban was directed to make an estimate for a temporary chamber, to be located in the south wing of the Capitol, for the accommodation of the House of Representatives. This building or room was to be so arranged that the arcades and other work of the completed structure would not be interfered with — "As much as possible of this building is to be so made as to form a part of the finished structure." June 10th bids were asked for this elliptical room, which was to be built of brick, and to be completed by December 1, 1801. Lovering & Dwyer were awarded the contract. They were to complete the room before November 1, 1801, for the sum of \$4,780, in accordance with plan and bill of particulars filed with the Commissioners.

Jefferson became President in 1801. He felt a lively interest in the whole subject of architecture and a particular interest in the Capitol, as he was Secretary of State when the design was selected and during the early progress of the building, and upon taking his seat as President he immediately showed an active and interfering interest in the work.

The next step of importance in connection with the Capitol was the abolition of the offices of the Commissioners of the District of Columbia by Act of Congress, May, 1802.

Mr. Thomas Munroe was appointed as Superintendent to perform such duties of the Commissioners as did not devolve upon the General Government. He received \$1,200 as Superintendent, at the same time acting as Postmaster for Washington City, with an additional salary. From the account, it is not clear whether he received \$2,000 in all or \$2,000 in addition to his services as Superintendent, but presumably the former amount.

With the end of his term as Commissioner, Thornton's supervision and Hoban's superintendence of the Capitol practically ceased, although both were called in consultation in reference to the work at subsequent periods.

Just before his retirement Thornton informed Jefferson that certain changes the President wished to make "would not be in consonance with his [Thornton's] plans." There is nothing to show whether this caused his further services in connection with the Capitol to be dispensed with. No further work apparently was done on the Capitol in 1802.

James Hoban is always mentioned as one of the architects of the Capitol. The records show that he acted only as superintendent in times of emergency. He made no effort to incorporate any of his own ideas as to plan or design in the construction of the building.

He and Thornton remained friends during the period of ten

years, in which they were thrown together in work connected with the Capitol. Hoban was first made Superintendent, with Hallet as assistant. Hallet received \$1,066 per annum, Hoban receiving his salary as Superintendent of the President's House. Hadfield and Hoban held equal positions, one as Superintendent of the Capitol, the other as Superintendent of the President's House, each receiving \$1,400 per annum. Finally Hoban was given \$1,866.66 by special contract to superintend the Capitol and President's House. The records simply give him the title of Superintendent. June 24, 1801, Hoban received the title of Inspector of Government Works, at a salary of 300 guineas per annum, "to continue as long as his services were needed." The duties of this position included inspection of roads, bridges and buildings. This office was abolished with the dissolution of the Board of Commissioners. Thomas Jefferson mentions him in his letters of a later date as Surveyor of Public Buildings, at a salary of \$1,700 per annum. Neither of these titles indicates a designer, but from them one would infer that Hoban executed other new designs. It is clearly shown by the records that he never made designs for any of the public buildings except the President's House.

From the beginning to this period in the history of the Capitol, it will be clearly seen that Thornton had been the only architect, — the man who originated in design and plan. The other so-called architects or assistants had been merely draughtsmen or superintendents.

Although Hallet in the second competition worked directly under the instruction of the Commissioners, and he had a second and a third trial, still Thornton's first plan was so meritorious that it



Fig. 22. Portrait of Thornton in the Patent Office.

immediately commended itself to President Washington, Secretary Jefferson and the Commissioners of the District as the best one submitted. To reduce the expense, this plan was made smaller by changing the scale, not the arrangement nor design. Soon after Hallet was discharged Thornton threw out the changes Hallet had attempted to introduce and brought the plans back to their original shape. In making these changes Thornton drew new elevations incorporating some improvements.

When Thornton retired the north wing was complete [this is the portion now occupied by the Supreme Court], the foundation for the central rotunda and dome was in place, and the foundation and basement story of the south wing were partially laid.

The exterior of these portions of the buildings is still in the form designed by Thornton. The plan of the north wing, or Supreme-Court portion of the Capitol, is in practically the same form as it was when left by Thornton's hands. Parts of it have been replaced by brick and stone where it was originally wood. A comparison of Thornton's designs and plans with others in this article will show the changes made from the original. Thornton's design made after Hallet's dismissal is shown in Figure 21.

All through the transactions of the Commissioners we find Thornton on record as desiring greater magnitude and better and more ornamental material than he was allowed to use. He wished the exterior and the principal portions of the interior to be of marble, and he

¹January 23, 1799, George Blagden made a contract to finish stonework of Capitol (this evidently referred to the nearly completed north wing) for the sum of \$510 13s. 9d. January 12th Wilson Bryon was made superintendent of carpenters. In the same year Lewis Clephane entered into a contract for painting the Capitol. John Kearney was the plasterer. The above contracts refer to the completion of the north wing.

In February, 1800, James Hoban was ordered to make details of the Capitol to "conform with drawings given John Kearney by Dr. Thornton, in the ancient Ionic style, but with volutes like the modern Ionic for the Senate Chamber." The roof of the Capitol at this period was made of shingles and gave considerable trouble by leaking.

In September, 1799, Clephane was ordered to give an additional coat of sand-paint to the roof, and in May, Peter Lenox, Wilson Bryan and Harbaugh were requested to examine and report upon the roof of both the Capitol (north wing) and the President's House, "because they leak."

went to the extent of saying it should be imported marble. He protested against reducing the size and number of rooms. He wanted mahogany doors and fittings. In fact, he appreciated the future wants and needs of the American people more fully than did many of his contemporaries.

Upon retiring from his position of Commissioner, Thornton was placed in charge of issuing patents. In this position he remained until his death.

Three articles¹ read before the American Institute of Architects, the one before referred to by Mr. Howard and G. A. Townsend in his book on Washington do not give Thornton the credit to which the records and letters of such shrewd men as Washington, Jefferson and contemporary writers show him to be entitled. These articles make him simply a dilettante, who endeavored to use others' ideas for his own advantage, and one who was constantly maneuvering to throw worthy men out of their positions.

The records show that he made no protest until the different superintendents endeavored to misuse his plans. Thornton declined the position of Superintendent but accepted the Commissionership, so that he could have a supervision of the building.

Hallet was discharged because he insisted on changing Thornton's plan. This was before Thornton became Commissioner.

Hadfield was appointed directly through Thornton's influence, and was discharged because of his inefficiency as a Superintendent.

Hoban² and Thornton³ remained friends from their earliest connection with the Capitol until the act abolished the offices of the Commissioners, when both ceased their services on this building.

GLENN BROWN.

(To be continued.)

OBSERVATIONS ON THE ST. LOUIS HURRICANE.



THE details of the storm of May 27 are so interesting that it is with difficulty one abstains from describing incidents. Theories, also, float about relative to the forces that have been at work, so that individual facts must be left out of consideration. We have the conditions that prevailed before the storm, its path of destruction and nothing else; we can deduce theories relative to its origin only from what is left to us of the result. The barometric readings for the day were:

7 A. M. 29.30.	12 M. 29.25.	5 P. M. 29.00.
8 " 29.28.	1 P. M. 29.23.	5.15 " 28.75.
9 " 29.27.	2 " 29.16.	6 " 29.10.
10 " 29.26.	3 " 29.10.	7 " 29.14.
11 " 29.25.	4 " 29.05.	9 " 29.16.
		10 " 29.13.

The morning was clear, with wind from southeast. At about noon there were evidences of a gathering storm in the west. At 3 P. M. the northwestern sky was overcast, with a thick haze with cumulus clouds drawn out in stratification. This formation changed at about 4.30 P. M. to a flying scud underlying light-gray cumulus clouds, but with no banking, the wind increasing in force and directly from the east. At 4.35 the flying scud was travelling very fast from the southeast to northwest, the sky in the south and southeast still remaining clear. The wind increased, still from the east, attaining a velocity of 37 miles per hour. Every indication pointed to a catastrophe in the elements. The western sky became black, the scud piling up in high banks. Suddenly, at 5 P. M. a line formed on the northern sky showing an attack by the elements from that direction. The line was moving rapidly to the south in a straight line from east to west, mounting high into the sky, all underneath the rapidly advancing line of the storm being of a transparent green color. At the same time the moisture in the air over the city condensed into an inky blackness, from which issued magnificent bolts of lightning in bands of heroic size, setting fire to several buildings and destroying telephone boxes, power-houses and light plants. The wind blowing from east-northeast, suddenly increased to 120 miles per hour, tearing, ripping, demolishing everything in its path. Joists, scaffolding, tin roofs, trees, cornices, signs, glass, brick,

every material, large and small, found in the country or city, seemed in grand conglomeration to move westward with a speed indescribable, amid the roaring, crashing, booming artillery of the onslaught of wind and water, the lightning lighting up the scene to only a few feet from the observer, as the elements were so thick as to obscure light. The effect was the same as sunshine when seen from under the water. This turmoil ceased after ten minutes' duration, when it set in again, more terrific than before, from the west-northwest with an interval of but a few seconds. The second onslaught lasted about ten minutes. Twenty minutes after, a third storm, but with wind of moderate velocity (about 25 miles), set in, accompanied by severe lightning, hail and flood. All together, over 3 inches of rain fell in one hour.

The effect of these storms was distinct, the one from the east wrecking the northeast part of the city and the river-front, the second wrecking the southern and southwestern part of the city. The storm, however, was general, for severe damage was done throughout the city, in all parts, covering an area of 150 square miles. The assessed damage amounts to, probably, \$20,000,000. The damage from the storm was caused:

First: By the velocity of the wind, which at 120 miles per hour exerts a pressure of 79 pounds per square foot to the normal plane, and exerts at an angle of 20° a lifting force of about 40 pounds per square foot.

To this must be added 25 per cent to make up for impact, which would make 99 pounds pressure and 50 pounds lift per square foot. This wind is sufficient to destroy brick walls of 13 inches' thickness, no matter how well constructed.

Secondly: Flying debris sailing through the air, add by their weight to the impact, so that an eighteen-story building of skeleton construction would be demolished by the bending of the columns at the outer wall at any of the stories, throwing the wall out of plumb and the material falling out of the framed work by gravity and the shock. The wind liberated against a building now in course of construction by me amounted to 4,000,000 pounds, distributed over an area of 50,000 square feet.

Thirdly: Telegraph-poles breaking up with cross-trees and wreckage attached to telephone, telegraph and electric wires swayed from one side of the street to the other, knocking down the houses on both sides of the streets.

Fourthly: Tin roofs, insecurely attached, sailed through the air, destroying whatever came into their paths. These agents contributed largely to the immense damage.

The storm was not a tornado, but a hurricane, although undoubtedly derived from the same source as a tornado. The tornado and cyclone have their origin in the unbalanced magnetic condition of the atmosphere. I do not wish to be understood that this condition depends in any way upon the earth itself, but can be independent of the magnetic lines of the earth. We can best comprehend this by exciting a Gramme ring and noticing the attraction and repulsion of the magnetic needle. Any electric-motor gives us a mechanical example of a tornado. The magnetic field excited changes the polarity at infinitesimal points, actuating the armature to rotate on this account, north and north, south and south poles coming in juxtaposition. This magnetic field may be in a straight line when the movement of the resisting mass, represented by the armature in a motor, will travel in a straight line without rotation. This demonstration may be applied to all storms. A magnetic field may cover the Alleghenies, and another the Rockies, with a resisting medium covering the Mississippi Valley. Scattered thunder-storms will take place along its borders, which equalizing the electricity amongst themselves, rapidly change the polarity from north to south and from south to north. When several of these storms, carrying the same polarity, come in juxtaposition to each other, i. e., connected by the shortest path, the magnetic lines of force acting across the Mississippi Valley tend to rotate the intermediate resisting medium, and a cyclone has its birth. The closer the magnetic fields are to each other, the more powerful the magnetic lines of force do act and the more rapid the rotations, and in this way a tornado is produced. That the rotatory storms always rotate in the same direction is due to the magnetic influence of the north pole. If we take into consideration the size of a hundred horse-power dynamo, and contemplate the vast fields of magnetic force developed in the territory of our atmosphere, stories of the wonders of the powers of tornadoes become better understood.

If our scientists will devote their attention to the upper atmosphere, exploring not only the air-currents at the surface, we may some day be able to thoroughly explain, and perhaps render more harmless the many storms that periodically sweep the air; but to the upper air we must look for full explanation of our storms.

H. W. KIRCHNER, F. A. I. A.

MONSIEUR J. JAMES TISSOT'S "LIFE OF CHRIST."

THE Gospel history has been presented to us by the various schools of painting from diverse points of view. Fra Angelico gives us the purely spiritual reading; the Flemings—Memling at their head,—Perugino, Lippi and the early Italians present us with the devotional side; Veronese and Rubens, the historic view dressed in contemporary costume. And, in our own time, we have Mr. Holman Hunt's semi-symbolic, semi-realistic pictures, based upon the historic view, and carried out with topographical propriety;

¹ P. B. Wight, American Institute Proceedings.

Adolf Iuss, " " " " October 12, 1877.

J. H. B. Latrobe, " " " " November, 1881.

² James Hoban, born in Dublin about 1762. Educated in Dublin, where he won the medal of the Society of Arts in 1781. Not long after this period he came to this country and settled in South Carolina, where he designed the Old State-House at Columbia, now burned; won the competition for the President's House, — he had charge of this building both before and after the fire; superintended the Executive offices, and did other work for the Government. His connection with the Capitol is described in the above article. He came to Washington in 1792 and remained until his death, about 1832. He was in the employ of the Government nearly the whole time. He seemed to get on amicably with all and his services were always in demand.

³ William Thornton was born 1761 in the Island of Tortola, one of the West Indies. His parents were from England, where they belonged to the sect of Quakers. He married a Miss Brodeau, of Philadelphia, 1780, where he had been living a short time. He returned to Tortola, where he was at the time of the Capitol competition.

He travelled extensively in Europe and studied medicine in Edinburgh. After winning the first prize in the Capitol competition he came to Washington, D. C. He became one of the commissioners in charge of Federal buildings and laying out the Federal City, 1794, retained this position until 1802, when the office was abolished.

In 1802 he was placed in charge of the Patent Office Department of the Government, which position he retained until his death, in 1828. His contemporaries speak of him as a gentleman of learning and culture, a writer of ability in prose and verse, an architect of taste and an engineer of capacity. For a more extended life of Thornton, see the article by the present author in the *Architectural Record*, July, 1896.

and the modern Franco-Americans and Franco-Germans, with their symbolic devotional works and modern every-day surroundings and costumes similar to those of the poor townspeople, or the peasant laborers. M. Tissot is as realistic and as topographic as Mr. Holman Hunt, only now and then diverging into the imaginative or symbolic reading when treating of the supernatural elements of the Gospel. In his own words, he desires to present the scenes with surroundings of "historical and topographical accuracy" and to "restore to reality the entrancing scenes of the Gospel story." But it is a curious fact, that the nearer to truth, as regards costume and surroundings, a picture gets to the scenes of the Gospel—that is to say, the more truthfully (historically) a painter represents these scenes, the less the spectator appears to be touched by the pathetic story. For example, the Old Masters and Moderns fail equally in affecting us, as we gaze upon representations of the Crucifixion. And yet, what should be more piteous than the contemplation of those uplifted crosses? But, nevertheless, the most pathetic representation of the Crucifixion we can call to mind is M. Gérôme's, where the crosses and their victims are omitted, and the entire effect is gained by the casting of their shadows upon the ground.

M. Tissot is frequently quite original in his treatment of some of the subjects; his drawing, for example, of "What the Saviour saw from the Cross," being not only completely new in idea, but to the thoughtful and imaginative spectator it is highly and intensely pathetic. There in front of the Victim, who occupies the position of the spectator, out of the picture, we see the mob scoffing, howling, blaspheming. The Centurion is gazing in amazement, and becoming a believer; the women are weeping, and some of the crowd are sympathetic; but the mass of the people and the soldiers are filled with hatred and malice, and their countenances display cruelty and every evil passion.

The "Ecce Homo" is of like character—a completely new reading of the incident. Pilate is leaning over the balcony of a house, expostulating with the crowd, but, nevertheless, pointing to the Victim at his side: "See ye to it; I find no fault with the man"; the surging multitude below screams and howls: "Crucify Him, crucify Him!" The people throw up their arms, and upon the faces of the upturned heads we see the various expressions of human cruelty and wickedness—inhuman, possibly, would be a better term. How different from the weak, wishy-washy Correggio, Guido and Carracci Schools; but, on the other hand, how similar to some of the scenes in the Ober-Ammergau Passion Play, suggesting to us that M. Tissot may have obtained his inspiration from those simple peasant-artists.

It is in the utter want of dignity in the central figure that M. Tissot fails; and not only are all his representations of the Christ commonplace and uninteresting, but the portraits of the Holy Women, the Apostles, the Centurion and the like, fail to impress one—indeed, they are simply the peasants of the Holy Land posing for the several personages. It may be argued that this is as it should be; that the Apostles were but poor men taken from the crowd, but if this applies to St. Peter and St. Andrew, it cannot be said that St. Paul should be represented as an uncultivated peasant.

The collection has been painted upon a systematic plan, beginning with the "Vision of Zacharias," the "Legend of the Tests which the Suitors of the Holy Virgin had to undergo, and the Betrothal of the Holy Virgin," and then working through the history of the life of Jesus Christ as told in the four Gospels. The last picture is the "Portrait of the Pilgrim," i.e., I presume, the artist himself. Legendary matter is mixed up with the Gospel account, but in some cases M. Tissot seems to follow peculiar views of his own; as, for instance, when he depicts the "Blessed Virgin in old age," ignoring the traditions that she was ever young. All the principal personages are treated as portraits, and upon a much larger scale than the subject pictures, which often, upon a space measuring 10 by 14 inches, contain some hundreds of figures. The mere execution of three hundred and sixty-five drawings in ten years, finished as they are to a high degree, represents an enormous labor—but a labor of love. Possibly, from the artistic point-of-view, the "finish" spoils much of the work, and those drawings marked "unfinished" are far broader and more effective than the others; but as they are worked for reproduction, I presume the broad washes would not have charmed the purchasers of colored process-engravings.

When studying M. Tissot's work one cannot help comparing it with the works of other modern painters, which are, to most of us, infinitely more effective. How poetic was M. Lerolle's "Nativity," compared with that by the later artist. How pathetic Mr. Hitchcock's "First Christmas Eve," with St. Joseph plodding over the snow to find a refuge for the Blessed Virgin, who, tired and footsore, leans against a paling. Again, how much more sympathetic was M. Olivier-Merson's "Flight into Egypt," than M. Tissot's little picture. But, on the other hand, the latter is unique in his treatment of certain incidents, and in illustrating the parables. The expressions upon the faces of the "Blind leading the Blind," and the attitudes of these half-dozen afflicted beings as they stumble over one another, are wonderfully life-like, if somewhat ludicrous; indeed, the comic and the grotesque are elements which frequently enter into the scheme of M. Tissot's work.

The supernatural is treated by the painter in a most original spirit, and possibly as successfully as by any of the Old Masters, for M. Tissot steers clear of the comic, if falling occasionally into the grotesque. In the "Temptation," the devil is represented as a long

black transparent monster of human form with bat's wings; but the Christ is very stiff, lifeless and dignified. It is a curious phase of M. Tissot's art, that his humor comes out in places where one would expect him to be serious; and he is grotesque least where the Old Masters triumphed in that line, namely, in the representation of evil personified. Probably the early painters had no sense of the ludicrous, and only intended the gaping, open jawed demons to strike horror into the spectator as he gazed upon them; but M. Tissot, in his regenerate days, would not joke about any one so serious as Satan, whereas his sense of humor may be allowed to escape when he hangs Judas, or depicts the crowing cock upon the house-top.

The happiest, artistically, of the series are undoubtedly some of the scenes of the Passion—"Jesus before Pilate," "Let Him be crucified," and "Ecce Homo;" "The Scourging," "The Crowning with Thorns" and "The Crucifixion" display the realistic horrors to which we are accustomed in the pictures of the early German and Flemish masters—any amount of agony and blood, but no sentiment—one can look at them without the slightest feeling of sorrow. Herein the series fails in its principal object. If a religious picture, especially when the particular subject treated is the daily suffering of the Man of Sorrows, does not affect the spectator to tears, it fails in its object. The mere recital of the events of that most pathetic story is of no value; the clothing of the actors in approximately correct costumes, the surrounding of them with correct topographical backgrounds may be interesting facts, but nothing more. The modern Parisian workmen who stand at the foot of the Cross, and the homely family group which entertains the Guest after the Resurrection, in the pictures of Béraud and Lhermitte, are much more likely to work out the salvation of men and women of the present day, than this long series by M. Tissot. Mr. Hitchcock, M. Lerolle, and a host of Frenchmen work in the spirit of the Old Masters, who, while treating their subjects with feeling and religious sentiment, did not mind surrounding their personages with the accessories of the time in which the pictures were painted. To them the anachronism of jewelled gowns upon the Blessed Virgin was a small matter, if the picture touched the hearts of the spectators; and so likewise, in our own day, topographical and historical truth are as nothing compared with the true sentiment. Whether M. Tissot possesses this sentiment, whether he does not sometimes steer dangerously near the sentimentality of poor Gustave Doré, whether his work is not terribly hard and dry at times, must remain a matter of opinion. But there cannot be two opinions as to the beauty of the pen-and-ink studies for this wonderful series of water-colors. Here the artist is at his best, both in the sketches of bits of ornament, capitals and landscapes, and in the studies of heads, so full of character, of Jews and Armenians—men and women of every describable type to be found in Palestine; and herein is the charm. It is utterly impossible to put the same life into a face painted from a drawing, as direct from the life; hence, equally, the impossibility of painting such subjects as the "Life of Christ" in any but the devotional spirit. Events of ordinary history may be concocted by aid of clever models in all our great cities; but scenes from the Gospel, historically correct from every point-of-view, are, naturally, owing to many circumstances, beyond our power. Hence the feeling with many artists, that the devotional side of the subject is the only one attainable; and therefore we find the new men following in the steps of the old, and painting such subjects with modern surroundings, and as full of anachronisms as the splendid "Marriage in Cana," by Veronese, in the Louvre.

S. BEALE.

FAILURE OF AN INTERESTING EXPERIMENT IN MUNICIPAL GOVERNMENT.

THE Joint Committee on building matters in Boston, to which we referred in our issue for March 14 and from whose restraining or impelling action we hoped much good might follow, has at its own request been dissolved after making the following disappointing report to the bodies from whom its members were drawn:

The Joint Committee on Building Law begs to make the following report to the various bodies which created it, namely: The Boston Associated Board of Trade, The Boston Society of Architects, The Real-Estate Exchange and The Master Builders' Association.

In accordance with the letter and spirit of the original action of the Board of Trade which contemplated the creation of the Committee, it proceeded immediately after its organization to consider the Building Law of the City of Boston in its entirety, and at an early date came to the conclusion that it would not attempt to move for any considerable changes in the body of the Law before the Legislature of 1896, preferring to take a longer time for serious consideration of the many important questions which would necessarily be involved and confining its work before the Legislature to consideration of legislation as to the body of the Law asked for by others.

Several Bills were presented to the Legislature by various parties, all of which have been considered by the Committee. These Bills, with position taken on each by the Joint Committee and action by the Legislative Committee on Metropolitan Affairs, to which all these measures were referred, were:

1. A Bill to restrict the height of all buildings to eighty feet outside of certain specified territory designated as the "business district"—excepting church spires and public buildings.

The Joint Committee, considering that so important a measure required consideration greater than could be given in the time at the disposal of the Committee on Metropolitan Affairs, opposed this Bill and asked that it be referred to the next General Court in order that a well digested Bill might be prepared. The Committee on Metropolitan Affairs reported a Bill giving authority to the City of Boston to establish the districts indicated, by ordinance, if it so desired.

2. A Bill to increase the area and height of buildings where eight-inch exterior walls may be used.

The Joint Committee opposed this Bill, on the ground that the limit of area and height of buildings with eight-inch walls was already as great as public safety should permit.

The Committee on Metropolitan Affairs reported a Bill in favor of the increased area and height asked for by the petitioners.

3. A Bill to permit an owner to reconstruct a building, damaged by fire or other casualty, to its original condition.

The Joint Committee opposed this Bill, on the ground that the Law as it now stands affords the community necessary protection in such cases, by authorizing the Building Commissioner and the Board of Appeal, acting jointly, to decide under what conditions, if any, a building damaged by fire or other casualty, may be restored to original condition, and that owners are not unjustly treated by the exercise of such authority.

The Committee on Metropolitan Affairs reported reference to next General Court.

Although the Joint Committee came quite early in its sessions to the conclusions as above indicated — that it would not move for any modifications in the body of the Law, — it did conclude to petition for modifications in the administrative portion of the Law, and after thorough consideration by a sub-committee, it prepared and presented a Bill providing for the consolidation of the Public Buildings Department with the Building Department and a general reconstruction and division of the work of the consolidated department so as to secure better system and efficiency. The Bill also provided for an extension of the powers and authority of the Building Commissioner in certain cases and gave a clearer definition of present powers; it also provided for additional powers, particularly with reference to inspection and control of buildings after construction, and for that much needed control of the use of heating, ventilating and sanitary appliances in all public or quasi-public buildings, the importance of which has recently been amply demonstrated by the investigation of sanitary conditions in our public school buildings. In this connection it provided for the establishment of a division within the department for inspection of buildings after erection and the control of their use, with particular reference to public and quasi-public buildings, such as theatres and other places of public assembly. It also comprehended the establishment of a division to have particular charge of sanitary affairs and control of the use of sanitary, heating and ventilating appliances in public and quasi-public buildings.

The Bill also aimed to secure a more perfect expert examination of all inspectors in the Department prior to appointment.

A very grave misapprehension of the purpose and effect of this proposed legislation led to vigorous opposition by interested parties and to some extent by individual members of some of the associations represented in the Joint Committee. This action very seriously embarrassed the Joint Committee in presenting its case before the Committee on Metropolitan Affairs and the result was that the Joint Committee were given "leave to withdraw" their petition and Bill.

The experience of the Joint Committee during the last year, and particularly in its efforts before Committees of the Legislature, has convinced it that the members at large in the various organizations represented do not comprehend the function and necessary operation of such a Joint Committee, and that so long as the general membership feel at liberty to neutralize or defeat the work of such a Committee by separate action, it is useless to keep the Committee in existence.

It, therefore, recommends that the Joint Committee be dissolved, the several delegates asking their respective bodies to relieve them of duty on said Joint Committee.

PROTEST OF THE NATIONAL SCULPTURE SOCIETY AS TO THE SHERMAN STATUE.

THE following letter has been sent to Gen. Granville M. Dodge, President of the Society of the Army of the Tennessee: —

Dear Sir: The Executive Council of the National Sculpture Society, referring to your letters of December 16, 1895, and January 18, 1896, and to the kind assurance given in them, beg you to consider the view of the recent competition which they feel obliged to take.

The National Sculpture Society were glad to aid your committee in the matter, as you will admit. It is not unusual for sculptors of name, greatly occupied in important work, or for busy architects, to give their time without remuneration to work upon such a matter. A day-and-a-half of valuable time was freely given by J. Q. A. Ward, Augustus St. Gaudens, Olin L. Warner, D. C. French and Bruce Price, who visited Washington as requested by you in the name of your committee. What they did there was, first, to select among a number of designs the two which were notably better than

the others; second, to advise your committee to hold a second competition, limited to those two sculptors, giving you as their especial reason for the advice that it would often happen that the maker of an interesting model would be unable to carry out the work on a large scale and in a permanent form; third, as you had provided to award four money-prizes, they gave two of these to the two sculptors whose designs they selected for further competition, and two to the authors of the designs third and fourth in merit. This advice of the committee of experts was given in the clearest way and with every precaution to guard against misunderstanding.

It was with great surprise and still greater regret that the National Sculpture Society noted the decision of your committee to invite four sculptors to your second and final competition — two of them, indeed, being those whom the representatives of the National Sculpture Society had selected; the others being the authors of designs not so designated in the first competition, as indeed, one of them, had in no way gained the approval of the committee of experts. It has been with still greater surprise that the Society has learned that the award has been finally made to that one of those two sculptors who were not selected or in any way distinguished, or even named, by the committee of experts, and whose model in the first competition was not considered by the committee of experts as worthy of consideration.

You will easily see how discouraging this is. The artists who entered the second competition expected that their work would be submitted to expert opinion. The public had a right to expect that expert advice, once asked, should be followed. The world of artists, who hoped that in your committee's action a step would be taken toward a reasonable and honest treatment of their work, have a right to feel, and do feel, that a backward step has been taken. The discourtesy shown to this Society, and the extraordinary rebuff inflicted upon the artists who made the journey to Washington, are of slight importance compared to those public considerations.

The National Sculpture Society begs to remind you that the very fact that your committee asked for expert advice was evidence enough that your committee realized your need of it. The Society, therefore, took your invitation in earnest, as has been shown above. What had become of that serious need of the advice of those who were competent to give advice when the final and critical choice was to be made? Assuredly, such advice was not less needed when the large-scale models were brought before you — those of which one was to be reproduced in the bronze for the continued delight of the people. The Society is compelled to infer, from all that has taken place, that it was never the intention of your committee to make any serious use of professional opinion or of the knowledge and experience of artists, but that a kind of notoriety, easy to procure at the expense of others, was what that committee had most in view.

The Society protests most emphatically against the action of your committee, and will take every means of appealing to the public to judge between us.

J. Q. A. WARD,

President National Sculpture Society.



BOARD OF DIRECTORS, AMERICAN INSTITUTE OF ARCHITECTS.

AGREEABLY to the call of the President, a meeting of the Executive Committee of the American Institute of Architects was held at the headquarters of the Institute, 156 Fifth Avenue, New York, May 25, 1896, President George B. Post in the chair.

The Secretary reported that he had issued the report of the Proceedings of the Twenty-ninth Annual Convention, which was held at St. Louis, October 15, 16 and 17, 1895, and had sent a copy to every Fellow of the Institute, to every Honorary and Corresponding Member, to foreign societies, to scientific societies and to many proprietors, public and university libraries; and that he had had printed under separate covers two papers read at the St. Louis Convention by Mr. Normand S. Patton and Mr. James B. Cook, and sent a copy to each Fellow, together with a circular asking Fellows to study the same and send to Mr. W. W. Clay opinions and suggestions in regard to matters contained therein; that he had had printed five hundred copies of Mr. Van Brunt's eulogy on the late Richard M. Hunt, with two prints from photographs of Mr. Hunt; and that a hundred of Professor Johnson's papers on "Timber Tests" and "The Designing of Flitched Beams" were struck off and given to Professor Johnson for his own use.

Since the last meeting of the Board, the Secretary has received notice of the death of W. J. Edbrooke, a Fellow of the Institute, on the 25th of March, of the death of Chev. J. da Silva, one of the oldest of the Honorary Members of the Institute, at Lisbon, on the 20th of March, and of Hon. Martin Brimmer, also an Honorary Member of the Institute.

A new edition of the schedule of charges has been printed, with a change authorized by the Board in the paragraph relating to soliciting patronage.

At the request of the Washington State Chapter, the Secretary addressed a communication to the Committee on Agriculture in favor of the passage of an act to appropriate funds for investigations

and tests of American timber, but this Congress has even cut off the appropriation asked for by Mr. Fernow, the head of the Forestry Division of the Bureau of Agriculture, and no appropriation has been made.

A communication signed by the President and Secretary of the Institute has been sent to the Committee on Claims of the House of Representatives in regard to the claims of the heirs of the late Thomas U. Walter, and your Secretary is under the impression that it was reported upon favorably, but does not know that the act has passed.

The Secretary has been requested to write a letter in regard to the destruction of the Bulfinch portion of the Massachusetts State-house, but did not consider himself authorized to express an opinion from the Institute, and therefore contented himself with an expression of his individual opinion, in harmony with that expressed by many other Fellows of the Institute. So far as informed, the result of the contest is not yet reached.

At the request of a Committee of the National Electric Light Association, the Secretary, under the direction of the President, represented the Institute at a conference of several delegates from learned societies, each of which sent one delegate to New York to the Conference, and as a result it is proposed to form a national representative organization, the object being to establish a uniform national code of rules for electrical work. The action of the President was approved, and the Institute pledged itself to a payment of not exceeding \$25 per year towards defraying the expenses of the organization.

The Secretary has had many applications for old copies of *Proceedings* of annual conventions of the Institute, and has endeavored to supply the same to the great public libraries of the country and to universities, but many of the numbers he cannot obtain. He has advised librarians to apply to Fellows in their vicinity to make an individual effort to supply the missing numbers. The Institute itself is now in possession of a complete set.

The Secretary continues to receive the *Proceedings* of the Royal Institute of British Architects, and has lately received and acknowledged a printed paper in pamphlet form on "Theatre Panics and their Cure," by Archibald Young.

The Treasurer sent a written report showing a goodly sum on hand, although payments have not been as prompt this year as last. It was voted that a number of persons be dropped from the rolls of the Institute for non-payment of dues.

The President reported from the Committee on Government Architecture that the Committee had held several meetings, and it has assurances that the Aldrich Bill is favorably considered by not only the Assistant-Secretary of the Treasury, but is also favored by the Secretary of the Treasury. The present Supervising Architect regards the passage of the Bill as less important than he did before he was familiar with the organization of the office. The Speaker of the House, although favoring the Bill, is opposed to all legislation requiring expenditures of money, and the pending Presidential campaign has so far prevented action thereon.

Such progress has, however, already been made in the matter of procuring the passage of the Bill, that the Committee is of the opinion that if the matter be properly and vigorously pressed it may possibly be passed by the present Congress, but if not, then by the next Congress. It is essential that a special appropriation be made by each Chapter for the purpose of defraying the proper expenses of the Committee in order to successfully prosecute their work, and it is suggested that such appropriation should be in the proportion of \$5.00 to each Chapter member.

The President reported progress in the matter of Institute headquarters, and a report may be expected at the Nashville Convention.

Mr. Andrews, for the Committee to investigate as to the authorship of the design for the Congressional Library, reported that it had investigated the matter referred to it; that Mr. Casey had written a communication to *Harper's Weekly* which had been published by it, explaining his professional connection with the building, but followed by an editorial statement that what had been published was authorized by Mr. Casey, which, however, was not true as to the title of the article, which gave his name as that of the architect of the building, as he had not seen and did not authorize said title. The good work in the interior of the building, however, had been designed by Mr. Casey, and his name ought to be placed on the tablet as the architect to complete the work.

The Secretary read a correspondence between Mr. H. W. Hartwell, F. A. I. A., and himself, and between Mr. E. J. Lewis, Jr., Secretary of the Boston Chapter, and himself, in regard to the resignation from the Boston Chapter of Mr. H. W. Hartwell and his partner, Mr. W. C. Richardson, both Fellows of the A. I. A., and the Secretary was directed to further communicate with the Boston Chapter and with Messrs. Hartwell and Richardson in regard to the same.

A letter was presented from Thomas Boyd, Secretary of the Western Pennsylvania Chapter, announcing that it had adopted a new Constitution and By-laws, and had changed its name from the Western Pennsylvania to the Pittsburgh Chapter, whereupon it was *Voted*, That the same be approved by the Board, and that a new Charter be issued, if desired by the Pittsburgh Chapter.

A communication from the Secretary of the Colorado Chapter was read, giving a list of the officers, an extract from the Presi-

dent's address, showing the condition of the Chapter, information that it had lost a number of members by removal from the State, and that one member had been expelled for unprofessional conduct.

The communication from Mr. A. J. Bloor in regard to the "Founders" of the Institute was taken from the table and the Secretary was directed to request him to formulate a plan for their recognition and to furnish a list of those whom he would recommend to be so designated.

Applications for election as Fellows of the A. I. A. were received from R. E. Dexter, of Dayton, O., and J. Graham Glover and Rudolph L. Daus, both of Brooklyn, N. Y., and having been found to be made in accordance with the provisions of the By-laws, and their drawings submitted being approved, it was voted that they be provisionally elected and that the Secretary be directed to issue a letter-ballot in accordance with the By-laws of the Institute.

As a result of the last letter-ballot, the following have been found to be elected Fellows of the American Institute of Architects: George H. Clemence, Worcester, Mass., Leon E. Dessez, Washington, D. C., Louis F. Stutz, Washington, D. C., Will S. Hebbard, San Diego, Cal.

A communication from the American Meteorological Society, asking for favorable action on the adoption, by the United States Government, of the metric system, was referred to the Annual Convention.

Adjourned.

Attest: ALFRED STONE, Secretary.

ENGINEERS' CLUB OF PHILADELPHIA: THE WELSBACH LIGHT.

At the business meeting, May 2, 1896, fifty-six members and visitors were present.

A paper on the Welsbach and other incandescent gas-lights by Mr. Barrows was read:

The luminosity of lime, heated to incandescence, was first used by Thomas Drummond about 1826, in connection with the heliostat for locating distant stations in surveys for the British Government. The first gas-burner for incandescent light was made by W. M. Jackson, an American, in 1881, the light being produced by fine platinum wire, or other material that will not oxidize at high temperatures. Charles Clamond, a Frenchman, at about this time produced several types of burners, in which the heat of burning gas and air made luminous a basket of magnesia threads, formed by pressing a paste through suitable dies. Others who contributed to the development of this form of light were E. B. Requa, of Jersey City, and Victor Popp, of Paris, in 1882; Alexander Heilbrun, of Cincinnati, in 1886; Lungren, in 1887; Sellon, of England, in 1887; Eugene Morgan and William J. McNorton, of Allegheny, in 1888; E. B. Culen, of Corry, Pa.; Leonard Henkle, of Rochester, N. Y.; C. B. Harris, H. J. Bell, J. N. Pew; J. C. O. Chemin, of Paris; James G. Jackson and A. L. Daniels, and H. C. Campbell.

Mr. Barrows described the particular features of each of these types by the use of a complete series of lantern illustrations.

The white hydro-carbon lamp was also described, and credit given to O. B. Fahnehjelm, of Sweden, for the discovery that the effectiveness of light is greatly increased if the incandescent material is supported in the gas flame so as to disturb its natural shape as little as possible.

The Welsbach light consists of, primarily, a Bunsen burner, the flame of which is used to raise a body to incandescence, this radiating the light. This body is made from the oxides of the rare earths in the following manner:

An organic substance is saturated with fluid containing salts of the earths, and after this is dry, the organic matter is burned out, leaving the oxides of the earths reproducing the body which was saturated with it. In the case of the Welsbach light, a cotton web is used as this organic body.

This web is knitted in lengths of about seventy-five yards, from an ordinary six-cord cotton thread, on knitting-machines. This long cylindrical web is then sent through washing-machines, where all grease and dirt are carefully removed. It is then stretched over a mandrel to smooth out the creases, and is cut into pieces, each one of which is long enough to make two mantles. The object of making them of this length is to save the labor in the first stages of manufacture. These pieces are then saturated in the fluid and are passed through rolls to wring out any superfluous fluid. This fluid is colorless, and to all appearances is like water. These saturated webs are then stretched over spools and put in dry-boxes, where they are kept revolving, one end of the spool resting on the shoulder of a vertical shaft, so that the web may be evenly dried.

After drying, the webs are cut into single lengths and the tops are doubled over and sewed with a piece of platinum wire about three inches long. An ordinary sewing-needle is threaded with this piece of platinum wire and the mantle is gathered where it is folded over. One-half of the circumference of the mantle is gathered, a loop is made in the platinum wire, and the other half of the circumference of the mantle is gathered. The two ends of the platinum wire then projecting are twisted together, the loop is cut, and the mantle (for it is now called a mantle instead of a web) is ready to be modelled. In modelling, the mantle is placed over a wooden block which is the shape of the finished product. The mantle is stretched down over this and smoothed out, to make the stitches even and take out all the wrinkles. After it is perfectly smooth, the wire support, which may be of iron or nickel, is placed centrally over

the top of the mantle, and the platinum wire is twisted around the ring at the top of the support.

To burn out the cotton from the saturated webs, the mantle supports are placed in a block in front of the operative, allowing the mantles to hang naturally. Each mantle is then touched at the top with a Bunsen flame and the cotton is slowly consumed. It is only necessary to touch the mantle once with the flame, as the cotton will burn by itself. Immediately after burning out the cotton, the oxides are in a very soft condition, and it is necessary to harden them in order to give them the shape that will produce the best results in lighting. The shape should conform as nearly as possible to that of the Bunsen flame. The flame should just fill the mantle, for if there is too much flame on the outside, the radiating power of the mantle becomes very much less and the candle-power is low.

After being exposed to the flame for some time the mantles become quite hard, so, after the cotton is burned out, the operative places the mantle over a soft Bunsen flame and with a piece of talc gives it the proper shape. The mantles are then mounted on bars, where gas is burned in them under pressure, and they are left exposed to a very high temperature until they reach the proper degree of hardness. At this stage, while the mantles are comparatively hard, they are brittle, and any rough handling will cause them to break, so, in order to render them capable of transportation, they are dipped into a coating which fills up the stitches and fibres and renders the entire mantle one flexible body.

The mantles are now trimmed off at the bottom to the proper length, and they are packed in tubes for shipment or mounted on the gallery (as the brass part of the lamp is called) and sent to the consumer. When the complete light reaches the consumer, the Bunsen tube is screwed on to the fixture and the air-supply is adjusted by the air-shutter in such a manner that the flame is just ready to "flash back." A match is then applied to the top of the mantle, care being taken that the match-stick does not hit the mantle, and the coating is burned off. This, being a very inflammable substance, requires but a few seconds. After this the mantle is ready for use; the gallery may be put upon the Bunsen, and the gas turned on and lighted at the top.

The process of manufacture, though it sounds like a simple one, is extremely difficult, and it is absolutely necessary that the labor must be skilled and sub-divided in order to get the best results. A rigid system of inspection is also essential.

Views were exhibited of the Welsbach factory, showing the different processes in the manufacture of the lamps, and also a number of microscopic slides of the mantles in different stages of construction and consumption.

The average life of a mantle differs with the uses to which they are put. If used in churches, each lamp will require about 1½ mantles a year; in residences, about 2 mantles per year; in ordinary stores, about 3 mantles per year; in stores and factories where there is much dust, about 4 mantles per year; and in places kept open all night, about 7 mantles per year. The average of all is 3 mantles per year. The longest life of which we know is something over 20,000 hours' continuous burning.

The principal cause of deterioration is dust collecting on the mantles. With regard to the color of the light, it can be varied from a pure-white light to a deep orange by changing the saturating fluid. The illumination at first is from 90 to 100 candle-power, which will drop to 60 or 70 after running for 500 hours.

To produce the best results, the gas-opening in the burner is proportioned as nearly as possible to the pressure of the gas to be burned in it, and if the latter varies at a given tap, of course the resulting light will vary slightly.

The inventor of the Welsbach light is a Viennese, living a short distance outside of Vienna, and the light has been very highly perfected in Austria since the patents were taken out.

In places where ceilings are subject to considerable vibration, a special form of fixture is used, which prevents any injurious effect upon the mantles.

L. F. RONDINELLA, Secretary.

SKETCH-CLUB OF NEW YORK.

THE Sketch-Club of New York held its last regular monthly meeting and dinner before the summer vacation on the roof of the Central Building, Saturday evening, June 6th, forty-three members and seven guests being present.

Mr. J. Oliver Cummings, President, occupied the chair.

Among the guests were Mr. Henry P. Kirby, Mr. E. Eldon Deane and Mr. B. West Clinedinst. Mr. Kirby and Mr. Deane addressed the Club and both gentlemen volunteered to assist at the Club's outing trips during the coming summer.

Mr. Scruce, the Vice-President, has arranged some very promising outings, some of which will be weekly bicycle trips.

It was decided to carry out the suggestions made by Mr. W. T. Partridge at the April meeting and a class for Architectural Research was formed under the leadership of Mr. Frederick R. Hirsh, who will allot the subject for its study to be reported upon at the meeting in September.

The Club's Fifth Annual Exhibition to be held in the Club Rooms, 3 East Fourteenth Street, opens Monday evening, June 8th, remaining open until Saturday evening, June 13th.

This year's exhibit promises to be superior both in number and excellence to any ever held by the Club, the illustrated catalogue

containing the names of some of the most representative draughtsmen in the country. The exhibition is open to the public free of charge until Saturday evening, when it will close with a "Smoker," at which the Club and its friends will enjoy a typical Bohemian celebration as a finale to its best exhibition and the most successful season it has ever experienced.

HARRY P. KNOWLES,
Rec. Secretary.



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

HOTEL PONCE DE LEON, ST. AUGUSTINE, FLA. MESSRS. CARRÈRE & HASTINGS, ARCHITECTS, NEW YORK, N. Y.

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

A PLAN and description of this most interesting of all American hotels will be found in our issue for August 25, 1888.

A PARLOR IN THE SAME HOTEL.

FIRST M. E. CHURCH, GERMANTOWN, PA. MESSRS. RANKIN & KELLOGG, ARCHITECTS, PHILADELPHIA, PA.

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THE CATHEDRAL, FROM THE NORTHEAST, GLASGOW, SCOTLAND.

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

PALAZZO FARNESE, CAPRAROLA, ITALY: PAINTINGS BY TEMPESTI IN THE LOGGIA OF THE MAIN STORY.

PALAZZO FARNESE, CAPRAROLA, ITALY: DECORATIONS BY THE BROTHERS ZUCCHERO IN THE GRAND COUNCIL-ROOM.

SGRAFFITO DECORATION, NO. 148 VIA DEI CORONA, ROME.

A GROUP OF URBAN CHURCHES.

[Additional Illustrations in the International Edition.]

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[Gelatin Print.]

MAIN PARLOR IN THE SAME HOTEL.

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TOWN-HALL, TEMPLEUVE, NORD, FRANCE. M. LOUIS BONNIER, ARCHITECT.

[Copper-plate Photogravure.]

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PRIMITIVE METHODIST SUNDAY-SCHOOLS, SOUTHPORT, ENG. MR. F. W. DIXON, ARCHITECT.

PARK ROAD COÖPERATIVE STORES, OLDHAM, ENG. MR. F. W. DIXON, ARCHITECT.



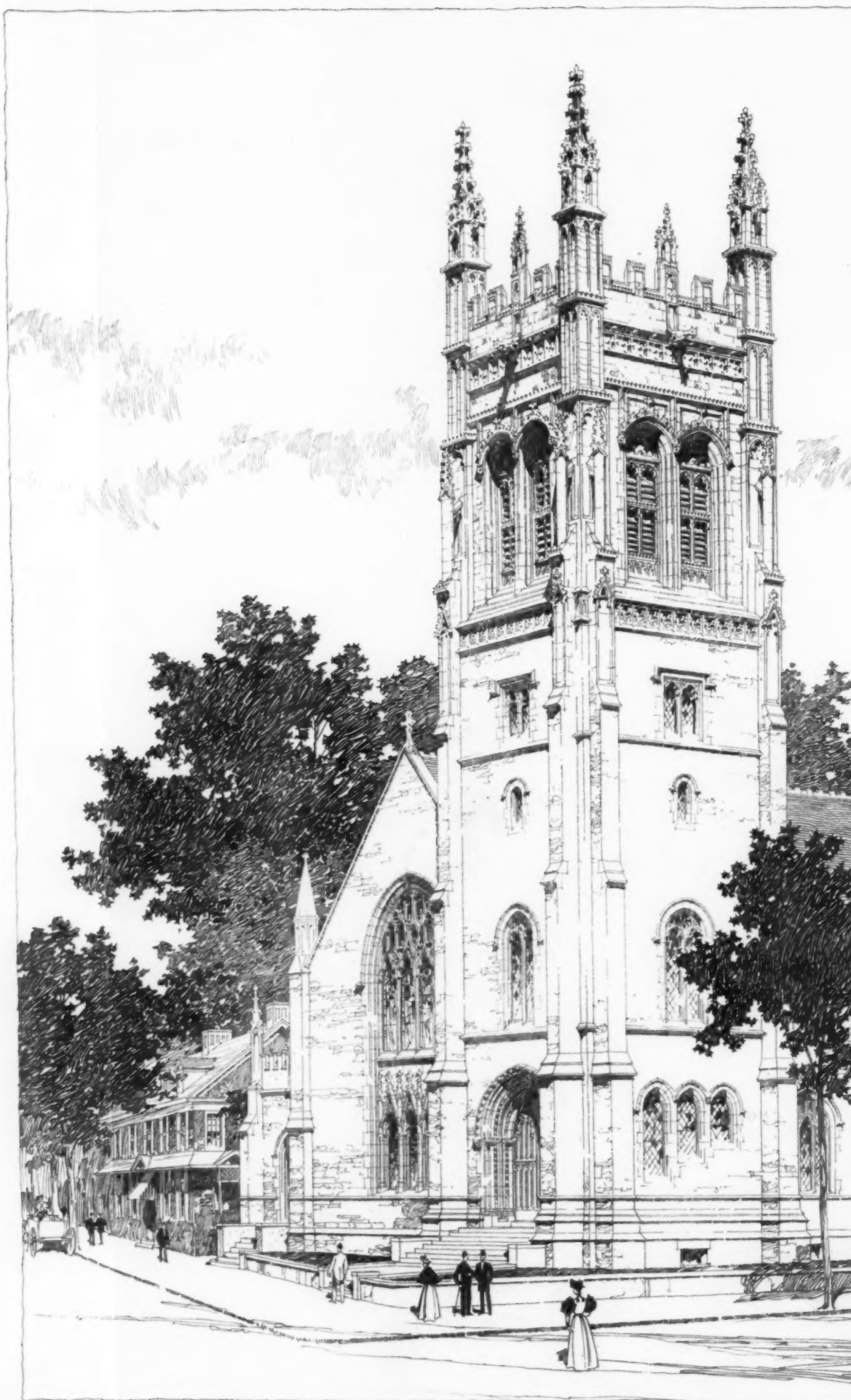
BOSTON, MASS.—Paintings recently purchased; the Martin Brimmer and R. Hall McCormick Pictures; Japanese Paintings; New Acquisitions to the Print Department; at the Museum of Fine Arts.

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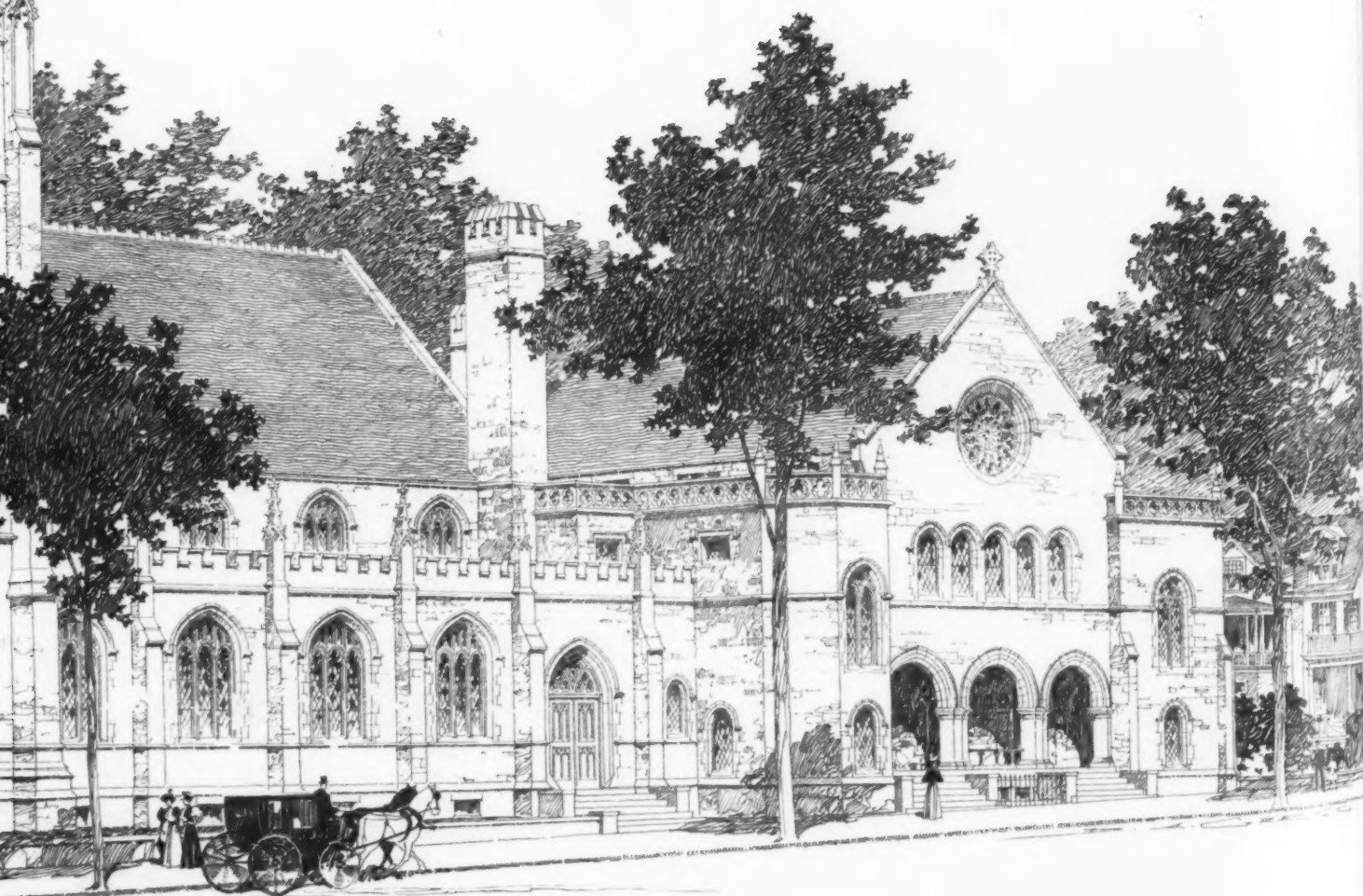
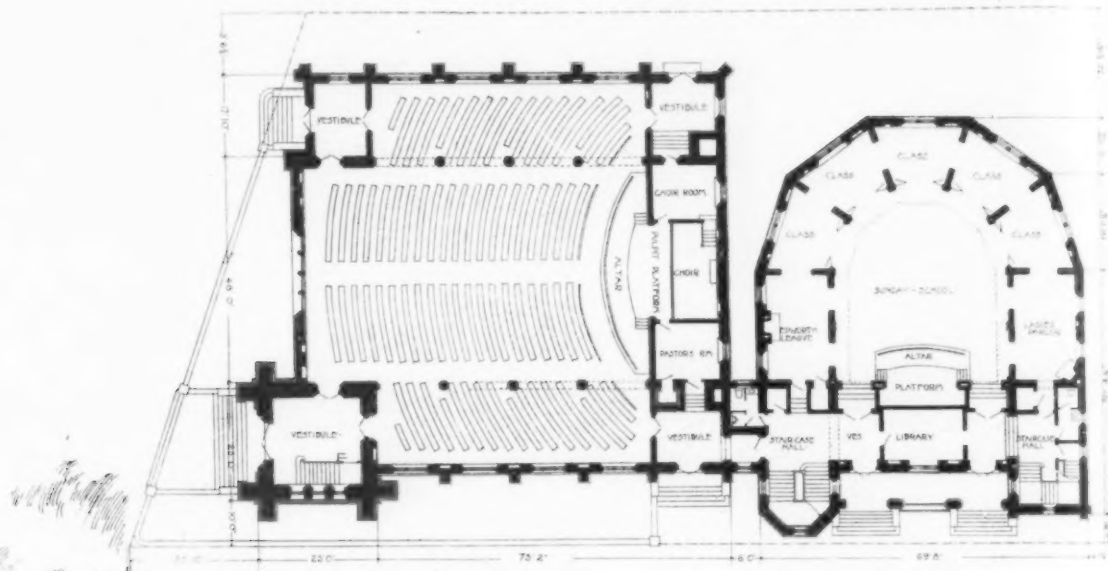


A PARLOR, HOTEL PONCE DE LEON, ST. AUGUSTINE, FLA.
CARRERE & HASTINGS, ARCHITECTS





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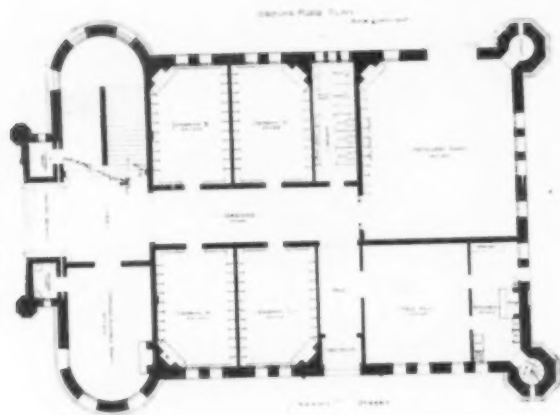




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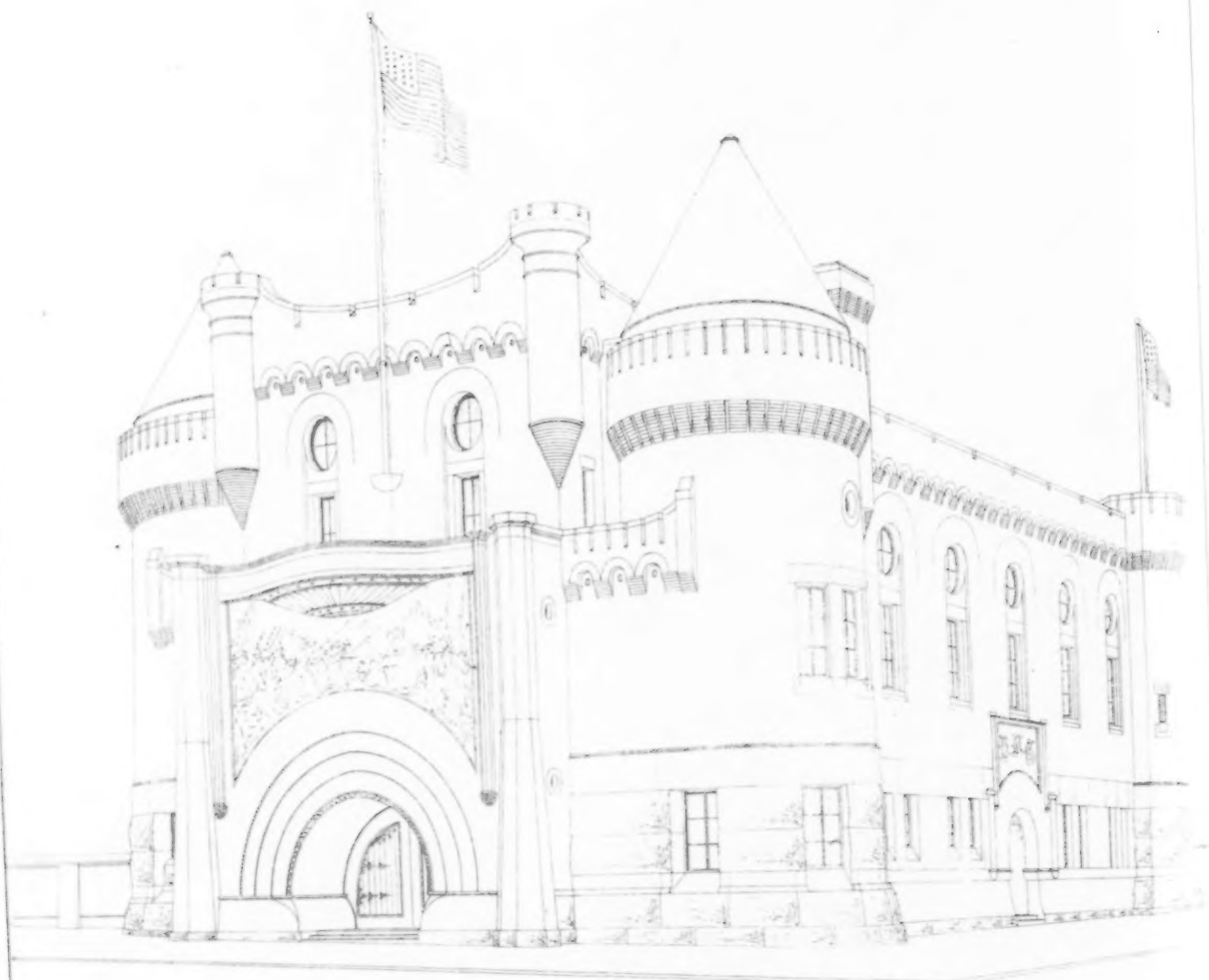
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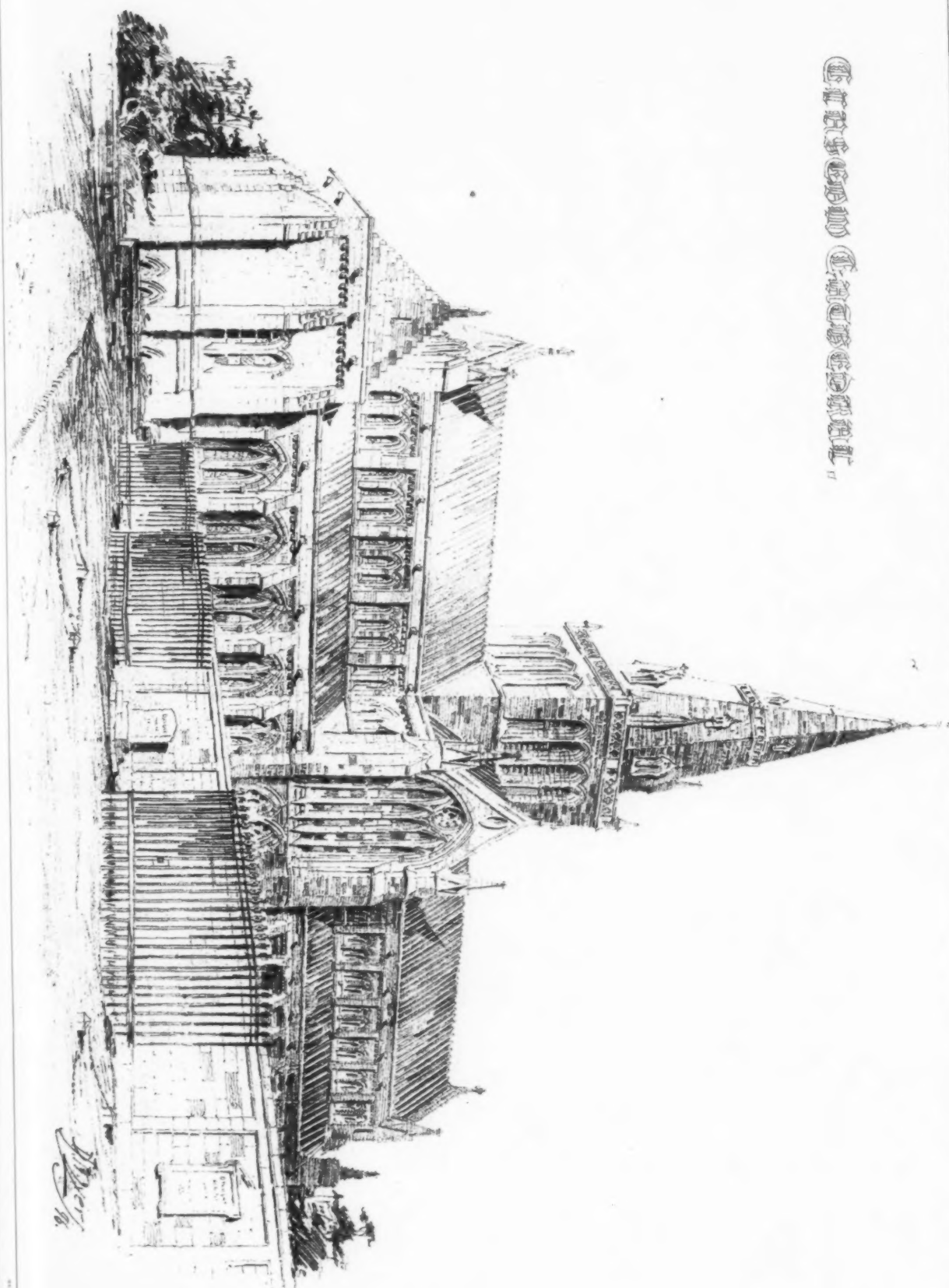
Therman J. Fox
Architect
Washington, D. C.

SUBMITTED IN COMPETITION
BY "OKECHOBEE"
January 15, 1896.



PERSPECTIVE VIEW.

THE NEW CATHEDRAL



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

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

NEW YORK, N. Y.—*Paintings recently acquired, and Retrospective Loan Collection of American Paintings*: at the Metropolitan Museum of Art. *Annual Exhibition of the Sketch-Club of New York*: at 3 East Fourteenth St., June 8 to 13.

Summer Charities Loan Exhibition: at the American Art Association Galleries, 6 East 23d St., during June and July.

NOTES & CLIPPINGS

AMONGST THE LAST OF THE LONDON HALF-TIMBER WORK.—On the south side of Wych Street, Strand, may be seen a couple of old timber houses, with their gabled upper stories projecting over the footpath, still picturesque in their squalor and desertion, though by no means so interesting as the contemporary relics of bygone London which are piously preserved in Holborn. These ancient structures are condemned by the County Council, and will soon be swept away unless some enterprising American cares to buy them for bodily exportation to the United States. A rumor is current that one of the tenements was occupied by Mr. Wood, to whom Jack Sheppard served his apprenticeship as a carpenter. If that legend were substantiated, Mrs. Keeley, perhaps, might plead with the destroyers, and the Society of Arts might affix a commemorative tablet on the tumble-down façade. As a matter of fact, we do not believe that there is any real ground for connecting the criminal hero with this particular residence. Mr. Wood's place of business, according to the best authorities, was up a court on the opposite side of the road. The tavern which served Jack and his chums as a house of call was not the Angel, but the White Lion, which gave its name to White Lion Passage, and stood at the corner of that gully where it debouched into Wych Street.—*St. James's Gazette*.

THE TOWER AT TYBEE.—An object which invariably attracts the interest of voyagers approaching Savannah by sea is the tiny round tower a few hundred feet distant from the lighthouse at Tybee Island, on the Georgia side. With the aid of a good pair of marine glasses the tower can be described as built of stone and apparently hoary with age. Indeed, the native Georgian has no greater pleasure than to pour into the astonished ears of northerners the tale that it was erected by the Spanish about the same time as the structures of St. Augustine. But the hard and rather unpoetic facts of the case are that the United States Government built the place as a defence against the British in 1812, some 84 years ago. It is termed in military parlance a Martello tower, being copied from similar defenses erected along the English coasts when Napoleon was threatening to invade Britain. The tower saw some little active service in the Civil War, of course, but was even then not more dangerous or stronger than a stone dwelling. At present it is used as a reporting and signal station, and during the bathing season it is a favorite visiting place for the guests of the fashionable hotels at Tybee beach, the noted southern seaside resort. There are few objects on our coasts more striking and picturesque than the tower at Tybee, and it only lacks a few legends of Spanish possessions, sieges, etc., to make it famous.—*Philadelphia Times*.

AN ENGLISH APPEAL AGAINST VANDALISM.—A correspondent writes to us as follows: "Is it not possible for you to raise your powerful voice in defence of a building of great national interest now threatened with mutilation, and probably destruction? In the little watering-place of Paignton stand the remains of the old palace of Bishop Coverdale, the translator of the Holy Bible into the English language. This has from time to time been sadly treated, much of it having been used as a sort of quarry by past generations. There remain, however, the old tower and a large portion of the walls of the old courts of the building, all of which were purchased a few years since by a gentleman residing in the parish, with a view to their preservation. He has expended a considerable sum in repairing breaches in the walls to save the remains from the incursions of street arabs and other mischievous persons. Now, it will be hardly credited, the local authority, called the Urban District Council, appears desirous of mutilating what remains in order to make a road which is by no means a necessity. It is to be hoped that powerful influence may be used to prevent this vandalism. I have no personal interest in the property, but there is so little that is ancient remaining in this little place that it seems monstrous that for reasons which, in their inception, are almost entirely private, a public monument should be thus treated. Would not the act for the preservation of ancient monuments apply in this case?"—*London Times*.

WEMBLEY PARK TOWER.—The tower at Wembley Park is now completed to the first platform, 155 feet from ground-level and 403 feet above sea-level, and was opened to the public on Monday last. As a new sensation, and affording a fine view of the metropolitan area, it will doubtless attract a large number of "trippers" to Wembley Park, one of the prettiest pleasure resorts around the metropolis, which on recent holidays has been visited by as many as 40,000. It will be remembered that the success of the Eiffel Tower suggested the structure at Wembley Park, prizes being offered for designs in 1889 (see Vol. XLIX., pages 543 and 736), and the tower now commenced somewhat resembles the successful Paris erection, but it is intended to make it 150 feet higher, or 1,150 feet. The four legs, supported on concrete foundation, are made up of four members braced together by lattice girders, the entire structure occupying at base a width of over 400 feet, while the first platform is about an acre in extent. It is carried

on girders and the flooring is of concrete. There are pavilions at the four corners, and there are four steam hoists, two of them carrying 55 passengers, and worked in the centre, special upright guides being provided. The second platform is to be at an altitude of 500 feet. The contractors are Messrs. Heenan and Froude, Manchester, and already 2,000 tons of steel have been used, while 7,000 tons will be required for the completed structure.—*Engineering*.

POWER FROM REFUSE.—Garbage and town refuse disposal is one matter where the cities of Europe are far ahead of those of this country. An ideal plant of this kind is that at Rochdale, England. Investigators have all agreed that burning is the best way to dispose of the accumulations. This preference is due to the fact that by this method not only is all organic matter liable to putrify and become a menace to the health of the community, destroyed, but it has been found by actual trial that the heat derived from the burning of this refuse may be used for the production of steam, which can be utilized for commercial purposes, and the revenue received from this source may be sufficient to more than pay for the cost of burning. There are no less than fifty-five such destructors in different parts of England. The Health Committee of Rochdale, a manufacturing town of 73,000 inhabitants, recently adopted the method, with the idea of ultimately using the steam produced for electric-lighting purposes. It has been found that this rough, unscreened refuse, running as much as 35 per cent of clinker and ash, will evaporate 1.6 pounds of water for every pound of refuse burned, under boilers built to produce steam at 120 pounds pressure. Coal burned under the same boilers evaporated 7 pounds of water per pound of coal. The two boilers have a grate surface of 45 square feet each. In building the two destructor cells a large combustion chamber, common to both, was provided between them and the boilers, so that the gases could intermingle, and that time should be allowed for the combustion of gases before they came in contact with the comparatively cold surface of the boiler, noting the fact that if once the organic matter in the fumes were heated sufficiently high, no amount of subsequent cooling down could again make them malodorous. It is interesting to note that it is not necessary to use coal to aid in the burning of this refuse. The plant has been able to produce 340 brake horse-power, burning two tons of refuse per hour. This high efficiency is obtained with ordinary boilers by using a forced draught. The weight of the refuse is reduced two-thirds, and the volume three-fourths. The author says in conclusion: "The disposal of two-thirds of the refuse completely is an important matter, but when to this is added the fact that the remaining third is rendered quite free from any organic matter whatever, it is past conception that corporations and local companies will continue to tip such immense quantities of putrefactive matter away, when, if they put in suitable appliances and used the steam which can be produced, the refuse might be burned and a profit made on the transaction."—*Cassier's Magazine*.

THE ACADEMIE DES SCIENCES.—From a review of Park Benjamin's "Intellectual Rise of Electricity" that recently appeared in *Engineering*, we make the following extract: "We must find space for a few words of Mr. Park Benjamin's pleasant description of the early days of the Académie des Sciences, as a pendant to the foregoing graphic picture. It was founded six years after the Royal Society, by Louis XIV at the advice of Minister Colbert, and formed a nucleus around which the inquiring spirits of France quickly gathered. But at first there was no great tendency to scientific inquiry, as in England. The talent was chiefly mathematical, as is evidenced by the contents of many volumes of the 'Anciens Mémoires.' At first they proceeded slowly. The original members were chiefly mathematicians, and experiments can hardly be said to have begun until the physicists were admitted. Then they went at it with a will. They experimented in concert, with results fully equal to such as might reasonably be expected to follow the production of Shakespeare's tragedy, with a chorus of simultaneous—if not concordant—Hamlets. There was no gathering in a room and reading one another asleep with interminable papers, suitable only for the phlegmatic, plodding English. The sessions were held in the laboratory. Nature should be made to yield up her secrets by the combined efforts of several brains attacking her stronghold simultaneously, like the concentrated fire of a battery. They needed no Charles to suggest subjects and spur them on. Indeed, when Louis the Magnificent, and Monsieur the Dauphin, and Le Grand Condé, attended by a gorgeous retinue, came in state to visit them, it was the King himself who, after intrepidly withstanding several chemical lectures, remarked that he had "no need to urge them to work, for they were doing it enough for themselves." But when Louvois became Minister, matters took a new turn. If the work of the Academy thus far was properly defined as experimental, then Louvois soon showed the most opposite, and hence theoretical, disposition. When the public-spirited King decided to improve the landscape at Versailles with more indispensable cascades, and the erection of a much-needed additional mountain, it was Louvois who told the members that they were paid to work, and set them at such theoretical tasks as aqueduct-building, pipe-laying and surveying. He made La Hire and Picard supervise the building and engineering, Thevenot plan watercourses, and Mariotte attack the problems of water-supply. When there was not sufficient of this sort of theorizing to do at Versailles, Condé invited them to theorize in the same fashion at Chantilly. Besides, the *haut monde* of Paris had heard of the new fashion at Whitehall and how all the great English milords and miladies were besieging the Royal Society. Should the Court of the Grand Monarque be distanced in a matter of *la mode*? Immediately were the mathematicians invited to calculate the chances in every gambling game in vogue: in "quinque nois," in "le koca," and "lansquenet." Sauveur, however, who too complacently evolved a surely winning system adapted to "la barquette," in his capacity of "mathematician to the Court," found himself abruptly invited into the closet of his irate sovereign, and given distinctly to understand that the royal prerogative included secrets of that sort, and that kings were not to be left subject to the run of luck ordained to common people."

SOUTH AFRICAN RUINS.—It would seem that, at some far distant date, a people more civilized than any of the present Kafir tribes had penetrated into the region we now call Mashonaland, and had maintained itself there for a considerable period. Remains of gold-working are found in many parts of that country, and even as far as the southwestern part of Matabeleland—remains which show that mining must have been carried on, by primitive methods, no doubt, but still upon a scale larger than we can well deem within the capabilities of the Kafir tribes as we now see them. There are, moreover, in these regions, and usually not far from some old gold-working, pieces of ancient building, executed with a neatness and finish as well as with an attempt at artistic effect, which are entirely absent from the rough walls, sometimes of loose stones, sometimes plastered with mud, which the Kafirs build to-day. These old buildings are, with one exception, bits of wall inclosing forts or residences. They are constructed of small blocks of the granite of the country, carefully trimmed to be of one size, and are usually ornamented with a simple pattern, such as the so-called "herring-bone" pattern. The one exception is to be found in the ruins of Zimbabwe, in southern Mashonaland. Here a wall thirty feet high, and from six to twelve or fourteen feet thick, incloses a large elliptical space, filled with other buildings, some of which apparently were intended for the purposes of worship. There are no inscriptions of any kind, and few objects, except some rudely carved heads of birds, to supply any indication as to the ethnological affinities of the people who erected this building, or as to the nature of their worship. Such indications as we have, however, suggest that it was some form of nature worship, including the worship of the sun. We know from other sources (including the Egyptian monuments and the Old Testament) that there was from very early times a trade between the Red Sea and some part of East Africa; and as we know also that the worship of natural forces and of the sun prevailed among the early Semites, the view that the builders of Zimbabwe were of Arab or some other Semitic stock, is at least highly plausible. Two things are quite clear to every one who examines the ruins, and compares them with the smaller fragments of ancient building already mentioned. Those who built Zimbabwe were a race much superior to the Bantu tribes, whose mud huts are now to be found not far from these still strong and solid walls; and those other remains scattered through the country were either the work of that same superior race, or, at any rate, were built in imitation of their style and under the influence they had left. But whether this race was driven out, or peaceably withdrew, or became by degrees absorbed and lost in the surrounding Bantu population, we have no data for conjecture. If they came from Arabia they must have come more than twelve centuries ago, before the days of Mohammed; for they were evidently not Mussulmans, and it is just as easy to suppose that they came in the days of Solomon, fifteen centuries earlier.—*"Impressions of South Africa,"* by James Bryce, M. P., in the *June Century*.

ANCESTOR FOR TWO.—A gentleman in London, having a portrait of a man claimed to be by Sir Joshua Reynolds, wrote to an art-dealer in Washington asking whether there was a possibility of its sale in this city. The latter thought it was likely, and asked the owner to send it over. A few days after it arrived he invited a worthy gentleman, who is famous for his wit, to inspect it, explained the artistic merits of the work and its great value, and suggested that he might hang it in his house as the portrait of one of his ancestors. After a few days of reflection the offer was declined, and the art-dealer sought a well-known multi-millionaire, who was immediately captured by the ancestor idea, and paid \$15,000 for the portrait. Soon after the purchase was made customer No. 1 was invited to dine with customer No. 2, and recognized the picture hanging on the wall opposite him in the dining-room. "Ah," he said to his host, "you have a remarkable work of art there. It is evidently a masterpiece. Who is the artist?" "Sir Joshua Reynolds," was the reply. "It is a portrait of one of my ancestors." "He came very near being one of my ancestors," was the tart retort, "only I was hard up just then and could not afford him."—*Boston Advertiser*.

UTILIZING WASTE POWER ON RAILROADS.—A straw which points to the future development of a remarkable source of economy in freight railroad traffic is the utilization of the weight of the freight which is proposed on a new road in Northern Michigan. The road runs from Lake Superior, fifteen miles inland to the mines, and in this distance the total grade amounts to a rise at 800 feet. The freight will be almost entirely iron ore, which is brought down in special cars, which are returned empty to the mines. The cars will be run in trains of ten each, each train being supplied with an electric generator, connected with the axles. The grade is such that the loaded cars run by their own weight, and the dynamos generate a current, which is taken off upon a trolley wire, and used to haul the empty cars back. It is thought that the difference in weight of the loaded and empty cars will give power enough to overcome all leakage, friction, etc. The engineers are figuring on using the dynamos as motors on the return trip, and thus saving expensive machinery. The experiment will be awaited with interest.—*St. Louis Globe-Democrat*.

THE PALACES OF MILLIONAIRES.—Millionaires are generally supposed to be very superstitious; but if the fear of ill-fortune were to defer any of the tribe from erecting stately houses in London he would certainly be justified by precedent. To take a few cases: The downfall of Hudson, the railway king, followed on his beginning to build a house for himself which should eclipse all others. Baron Albert Grant never got further than the foundations of the palace which he intended to have named Kensington Court. Mr. Sanford had hardly rebuilt the interior of his house in Carlton House Terrace when "Argentines" went down and he was obliged to sell it to Mrs. Mackay. The completion of Lord Revelstoke's palace in Charles Street coincided with

the Baring crisis, and it has been to let or for sale ever since. Lord Rosebery rebuilt his house just in time to enable him to occupy it on the collapse of his government. Now the disasters which have fallen on the Chartered Companies coincide with the completion of the external structure of Mr. Beit's mansion in Park Lane.—*St. James's Gazette*.

A REMARKABLE INDIAN CLOCK—Machinery, a monthly journal published at Johannesburg, South Africa, gives an account of a most remarkable clock belonging to a Hindu prince, which the editor thinks the strangest piece of machinery in India. Near the dial of an ordinary looking clock is a large gong hung on poles, while underneath, scattered on the ground, is a pile of artificial human skulls, ribs, legs and arms, the whole number of bones in the pile being equal to the number of bones in twelve human skeletons. When the hands of the clock indicate the hour of 1, the number of bones needed to form a complete human skeleton come together with a snap; by some electrical contrivance the skeleton springs up, seizes a mallet and walking up to the gong, strikes one blow. This finished, it returns to the pile and again falls to pieces. When 2 o'clock, two skeletons get up and strike, while at the hours of noon and midnight the entire heap springs up in the shape of twelve skeletons and strike, each one after the other, a blow on the gong, and then fall to pieces, as before.

CUSTOMS DUES ON NEGATIVES.—An amateur photographer took a trip to Europe, and fearing that the European dry-plates would not prove satisfactory, he took a few thousand American ones with him. These were exposed on all the sights of the Continent, and brought back to this country to be developed. They were, however, detained at the Custom-house here in New York, and, although it was understood that they were of American manufacture, the Custom-house authorities demanded several hundred dollars duty for the reason that they had been "improved" abroad. The amateur refused to pay the amount required, and the case was argued before the authorities. Fortunately, it was not difficult to prove that when the average amateur exposed a box of plates, it did not follow that he improved them, usually the reverse, so the boxes were allowed to go through free. I am afraid that if every dry-plate were improved after exposure in the camera there would be a few failures amongst the dry-plate makers.—*American Amateur Photographer*.

"WAGNERISM" AT THE BOSTON PUBLIC LIBRARY.—The time may yet come when "Wagnerism" will be set down in the medical dictionaries as a mild form of mania, and its ardent professors live in danger of writs "*de lunatico inquirendo*." No matter what they see in the arts, they can find in it only a reflection of Wagner's music-dramas. A "Wagnerite" by no means so narrow and fanatic as most of his kind, was looking last evening at the cuts in a weekly newspaper of Puvion de Chavannes's five panels for the Boston library. "Look," he cried, joyfully, "Chavannes has gone to Wagner for his conception of dramatic poetry. It's the first scene of 'Rheingold,' with Alberich climbing the rocks, and the nixies in the water below, and the genius of Wagner sitting on the shore." Alas for Æschylus, alas for Prometheus chained, alas for the Nymphs of Ocean! Even the text that accompanied the cuts could scarcely persuade the "Wagnerite" that Puvion's imagination had turned not to "Das Rheingold," but to a drama that preceded it by two thousand years, and that may as long outlast it.—*H. T. P. in the Boston Transcript*.

THE LORD CHANCELLOR'S PERQUISITES.—The Lord Chancellor has double the salary of the Speaker—viz., £10,000 a year—but his tenure of office is more precarious, depending as it does on the continuance in office of the party to which he belongs, and his only perquisite is the chance of obtaining possession of the great seal, or rather the two silver discs from which the impression of the great seal is obtained in wax. There is a fresh great seal made for every reign. The old seal is supposed to be broken, but it really is not. The new sovereign, in presence of the Privy Council, simply gives it a gentle blow with a hammer, and being thus "demasked," as the phrase is, it becomes the perquisite of the Lord Chancellor of the time. On the accession of William IV to the throne in 1830, there was an interesting contention between Lord Lyndhurst and Lord Brougham for the possession of the great seal of George IV. Lyndhurst was Lord Chancellor at the death of George, but a change of government having followed, Brougham occupied the office when the great seal of William was completed. The former argued that the old great seal really belonged to the preceding reign, and that as it was vested in him at the death of the sovereign, it was his by every right and title; while the latter contended, in support of his claim to the emblem, that it continued to be the great seal until the great seal of the succeeding sovereign was actually ready. William IV, to whom the dispute was referred for arbitration, settled it to the mutual satisfaction of both statesmen. He allotted to each of them one of the sides of the great seal, and, as the designs were different, tossed up a coin to decide which should have the King on his throne and which the King on horseback. But his Majesty's graciousness did not end there. He had the two sides set in superb silver salvers, and Brougham and Lyndhurst received, thus mounted, their respective portions of the old great seal. This action of William IV may now be regarded as a well-established precedent. In 1860 a new great seal—the present now in use—was ordered, as the one made at the accession of the Queen to the throne had got damaged. Lord Chelmsford was Lord Chancellor at the time, but before the new seal was adopted he was succeeded, on a change of government, by Lord Campbell. They decided that, with the consent of the Queen, they would be bound by the judgment of William IV in the case of Lyndhurst vs. Brougham as to the disposal of the old seal. Campbell laid the matter before the Queen, who readily consented to follow the precedent of her uncle, and accordingly Chelmsford and Campbell received each a side of the great seal set in a silver salver.—*Westminster Gazette*.