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THE citizens of Boston are once more confronted with the immoral and unendurable proposition that a new City-hall Building shall be erected in the middle of the Public Garden, and the best argument, seemingly, that can be put forward is that the instant cost to the city will be less than for any other reasonably satisfactory site! City-hall loafers would not add greatly to the attractiveness of the permanent setting of the building in such a place—not that we admire greatly the annual tulip display, but there are many who do.

TO our mind there is only one site in the city that is pre-eminently suited for the municipal building of so dignified and so naturally beautiful a city as Boston; this site is the area bounded by Beacon, Charles and Mount Vernon streets, and by the Charles River, that is, a site directly north of the Public Garden. This space turned into an open square and revealing the beauties of the full basin of the Charles River would give a setting for a fine public building infinitely better than can be provided on the Public Garden, on the Institute of Technology land or upon Copley Square. The cost might be great, but posterity would probably prefer to be bonded for a new open space rather than find itself suffering because the City Fathers had in 1903 committed a theft of a portion of the open public space at that time existing.

BUILDING matters in New York have been effectually interrupted by a manœuvre on the part of the brick and lumber dealers. Several attempts have been made, in years past, to "unionize" the drivers of the teams belonging to the dealers in building-materials, for the very obvious purpose of making them subject to the orders of the Building Trades Council, so that, in any quarrel of the Council with the contractors, a damaging blow could be struck at the latter by calling out the drivers and preventing the delivery of material. All these attempts have failed hitherto; but a few days ago, a demand was made upon various dealers in materials that their drivers should be "unionized" forthwith, and that no non-union men should thereafter be employed. It was not pretended that the drivers had any grievance, and the dealers, who had quite enough penetration to see what was intended by the demand, met, and agreed to suspend the delivery of materials until it was withdrawn. The great majority of the men employed in the material yards do not belong to any union, and probably do not wish to do so, and these men will be given other employment in the yards, so that their families may not suffer; but many thousands of union carpenters and masons have been thrown out of work.

THE newspapers quite generally blame the dealers for imitating union methods in summarily depriving thousands of men of employment to secure objects of their own, and some of them are quite alarmed at the idea that the unions may be encouraged to violence by this example on the part of employers. Although there is something to be said in favor

of this view, the argument that employers ought to submit meekly to all the assaults of organized labor, lest they should excite the angry passions of the latter by resistance, has been worn rather threadbare by walking-delegates and politicians, and we are not sure that the community may not be considerably benefited by this unexpected display of warlike spirit on the part of employers. If there were any considerable number of non-union men in New York, who would be injured by the suspension of delivery of materials, the matter would have a different aspect; but the non-union working-man, at least in the building-trades, is practically extinct in New York, and those who have exterminated him by organized violence and conspiracy, and who are responsible for the acts of the Building Trades Council which represents them, are not the ones to complain when a small dose of their own medicine is administered to them. In taking care, at a considerable expense, of their own non-union men, the dealers have shown a spirit which is worthy of the highest praise, and will certainly win for them the sympathy of that great, but silent, part of the community which looks upon the defence of the non-union man as the highest duty which now lies before American citizens.

IN Chicago, also, the idea that it might be salutary for those who take the sword of combination and oppression to deprive others of a living to feel the edge of a corresponding sword in some one else's hands has grown rapidly of late, and the Employers' Association of that city has resolved, as it says, to "eliminate sentiment" from its relations with its workmen. The efforts of the college professors have been particularly successful in arraying employers against employed, and the former are getting tired of being treated as enemies by the men whom they try to befriend; so that, for the present, the latter will be held strictly to their legal duties, by agents, who will be less accessible to excuses and entreaties than the employers. Men will be paid only for the time that they actually work, whatever may be their explanation of their idleness; and the agents will know nothing of the occasional vacations, on full pay, and other favors, in which an amiable employer takes pleasure. As a further defence against the warlike manœuvres which the walking-delegates have reduced to a system, the employers have, on their side, organized one or more bodies of workingmen, which are to be held in readiness to take the places of strikers. It is a favorite practice of "labor champions" to order strikes of small unions, consisting of men whose work is necessary to the carrying-on of some larger industry; as, for instance, in the calling-out of the pumping-engineers in mines, or the spinners in a cotton factory. By the organization of these small bodies of independent workingmen, the assaults made, for instance, on thousands of tenants of office-buildings, for the satisfaction of a dozen coal-teamsters, will be robbed of their terrors, as the place of the teamsters will be immediately supplied by other men, supported by an association powerful enough, it may be hoped, to defend them.

IT must be remembered that unions, as a rule, consist of a small number of people who find profit and pleasure in tyranny, and a much larger number who do not dare to resist the tyranny of the others, but who, with any encouragement, or even the assurance of protection and fair play, would separate from the union at once. We happened the other day to meet a journeyman carpenter of our acquaintance, and made some friendly inquiries of him. It turned out that he had refused to join the local union, because it insisted on an eight-hour day. "What good does it do a man to have all that time to loaf?" he asked. The union, however, had adopted this as one of its cardinal principles; and, as he would not accept it, and could not hope to get employment without a union card, he had gone to work for a railway company. In this employment, if his pay was small, and his hours long, he could at least feel himself a man. Multitudes of workingmen share these sentiments, but do not dare to express them, for the simple reason that, under present circumstances, they would thereby deprive themselves and their children of bread. Every possible effort is made by the union tyrants to make it impossible for a man who will not accept their yoke to earn a living,

and, with the help of the politicians, they have now reached almost complete success. In the city of Boston, if we are not mistaken, all contracts for public work now require that none but union men shall be employed; and, so far as we know, although the taxpayers, at least, have ground for questioning the legality of such a stipulation, it has never come before the Courts in Massachusetts. Naturally, the example set by city authorities is followed elsewhere, and the possession of a union card is practically indispensable for a mechanic who wishes to earn a living by his profession in any of our cities.

At a recent meeting of the National Manufacturers' Association some sentiments were expressed in regard to trades-union tyranny which have excited a great deal of attention throughout the country, and it is interesting to read the newspaper comments on them. Many of the papers, particularly those with political connections, have difficulty in concealing their alarm at such plain speaking. They are terribly afraid that the unions will show their resentment at being called hard names by getting up "a trial of strength," or will in some other way make themselves disagreeable. On the other hand, some newspapers point to the very obvious truth that the employers have as much right to organize as the employed, and that, if they can, by united action, more effectually resist the attacks of the labor organizations, they are entitled to unite for that purpose. In the present condition of the public mind, the latter view is likely to find wide acceptance, and there are plenty of indications, not only that the unions, backed by the politicians, have lost much of their strength, but that the relation between the unions and the politicians is hereafter to be sharply watched. Meanwhile, the prospect for the non-union man, which, a little while ago, was so gloomy, grows brighter every day. We do not believe that we exaggerate in the least in saying that President Eliot's famous defence of the "strike-breaker" brought courage and comfort to myriads of humble American homes, at the very moment when they needed it most. The furious attack which Mr. Eliot's speech instantly brought upon him from the champions of organized labor showed that it reached a vital point; and, although the material part of the speech itself was hardly more than a sentence, its influence is already seen in many directions. A few days ago, when a strike on the Lake steamers threatened to stop, as it was undoubtedly intended to do, an important portion of the Lake traffic, a number of students from Chicago University shipped as volunteer stokers and firemen, to keep the steamers moving, and prevent the distress which would have been caused by the interruption of the traffic. It cannot be doubted that this thoughtful and patriotic proceeding was directly inspired by President Eliot's speech, and those who know workingmen best can understand most readily how much this example will encourage those who had begun to despair of any relief from the bondage in which ruffians, politicians and Legislatures have conspired to keep them.

The accident in Brookline, Mass., through which, by the failure of a retaining-wall, a building under construction fell, killing the foreman in charge, has been judicially investigated, the report, drawn up by Judge Drew, of the Brookline Municipal Court, saying that the foreman's death was caused "by the manner in which the foundation-wall of said building was constructed, and by the imperfect way in which the said wall was supported, especially in that it was not properly shored up, nor was proper attention given to the condition of such shores as were provided." We confess that the idea that shores are a proper adjunct of a new retaining-wall is a novelty to us. Of course, we do not question the correctness of Judge Drew's finding, but the implication that there is a proper way of supporting a new foundation-wall by shores has a considerable interest for the profession. It is well understood that the weight of a superstructure is, practically, of no value in adding to the resistance opposed by a retaining-wall under it to the pressure of earth against it; so that, if shoring of the retaining-wall is necessary at any period of the construction, it will always be necessary, and permanent shores would add a curious complication to the basement plan of a building.

The *Economiste Français* makes a suggestion in regard to the American iron trade which seems important. It is well known that the managers of the Steel Trust have decided that it is for the interest of their corporation to check

the importation of foreign iron, which had attained very large proportions, and, with this view, the prices of the product of American mills have been reduced about six per cent. This still keeps the cost of American iron manufactures, to American consumers, a little above that of foreign iron of the same quality, with freight, insurance, brokerage and an enormous duty added; but the difference is so small that it no longer pays to import German iron, unless in large quantities. Meanwhile, as the *Economiste Français* points out, it is hardly possible that American consumption of American iron will continue indefinitely at the present rate, and, when a period of depression comes, the question of what will be done with the surplus production of the mills is a serious one, for Americans, as well as for the rest of the world. Until now, the American iron manufacturers have been able to keep their profits, even in times of depression, by sending their surplus abroad, to be sold at cost, or less, in competition with foreign iron, while they secured from their American customers, under cover of the tariff, an immense profit on what was left. Now, however, the prospect is less favorable for the continuance of this policy. Although prices of iron have risen abroad, and the French and German and Belgian mills are prosperous, our exports have fallen off. Of course, this simply shows that the demand at home has been so great that it was less profitable to send iron to Europe than to sell it here; but a factor which must be considered is the evident, and very justifiable, determination of the Continental Governments not to allow their industries to be ruined by any future systematic attempts, on the part of American iron manufacturers, to flood their markets with goods at less than cost, recouping their loss by the profits of their business at home. At present, the expense of manufacturing iron is less in Europe than it is here, and is rather diminishing, through the scientific economies which are constantly being effected, while it tends to rise here; so that there is no need of taking any conspicuous steps until the occasion actually arises; but it seems probable that a sudden check to the demand here would soon be followed by the imposition of a heavy duty on American iron by all the Continental iron-producing countries. This, by throwing back the surplus on our hands, would demoralize the iron market to an extent which might seriously endanger the finances of the great steel companies, and affect, with them, those of many more of the great protected industries. We ought to say that we have nothing but praise for the management of the United States Steel Corporation, which, although it has taken advantage, as it was justified in doing, of the existing tariff laws to make great profits out of its American business, has conducted its affairs openly and honorably, and has gained, as it deserved, the confidence of its customers; but it seems to us that its interest now lies in a material reduction of the tariff, by which, although its prices to American consumers will have to be correspondingly reduced, it can still utilize its splendid facilities, and skilful management, at a satisfactory profit, at the same time that, by averting the closing of foreign markets, it will retain the best protection that it can have against financial reverses which would threaten the whole community.

We would like to know the names of the "architects and builders" who, according to the daily papers, "assert" that "in all save heavy construction work, poplar is as good a building material as spruce." In consequence of this valuable opinion, we are told that large quantities of poplar lumber will soon be sent from the Maine woods to the saw-mills, to be manufactured into "floor boards and interior finish." It would be difficult to find any timber so miserable that it could not be made into mouldings, but a poplar floor-board will be a curiosity in the Eastern States, and the interest that it will excite will not be diminished by an inspection of it after it has shrunk as much as it is disposed. The Western poplar is said to shrink an inch for every foot in width, and if the Maine poplar follows the example of its Western relative, adding its own peculiarities in the way of twisting and splitting, a floor made of it will be a source of constant study, if not of joy, to its owner. There was a story, not long ago, to the effect that poplar was to be used in the pulp mills, in place of spruce; and people concerned in building rejoiced, with reason, that the best building timber we have left to us was no longer to be wasted in making newspapers; but the substitution of poplar for spruce in building will be very far from meeting with the approval of architects in general, whatever those in Maine may think.

ANDREA PALLADIO.¹—I.

OF the early life and parentage of Andrea Palladio there exists but little information. All his biographers, with the exception of Paolo Gualdo, describe him as having been born in the year 1518. The latter, however, informs us that he was born in 1508, thus making him just ten years older; but, unfortunately, there is no further confirmation of this statement. Palladio's father was a mason at Vicenza, where he died in 1545. Though we should much like to know some of the circumstances of his boyhood and the various influences and episodes which contributed to his success in after years, all we are privileged to learn is from Palladio himself, for he tells us that he early possessed a great love and natural inclination for architecture, and that as a boy he read Cæsar's "Commentaries," and imagined and designed the bridge over the Rhine from Cæsar's written description, afterwards utilizing this over the Barchiglione, near Vicenza.

Gualdo mentions that Palladio also seriously studied mathematics, which he considered an essential part of an architect's education. His humble birth is corroborated by Leoni, who describes him as of "mean extraction," adding, "that in consideration of his great abilities, and as a reward for the honors he did his native city, he was made free of same, and received into the body of the nobility." But this honor only came to Palladio when his fame was established throughout the whole of Northern Italy. It is evident that his early life was a studious one, and we naturally infer that a most excellent education was conferred upon him by his father, the mason Pietro, who, in all probability, sacrificed much to secure his son's future. The latter appears to have soon deserted sculpture for architecture, meanwhile also studying the works of Vitruvius, Alberti, Michelozzi, Cronaca, Serlio and San Gallo.

In accordance with the custom of the times, Palladio possessed a patron in Gian Giorgio Trissino. It was with this patron that he first visited Rome in 1541 when he was thirty-three years of age. He must have been exceedingly industrious during this visit, as his drawings of the Classic buildings in his treatise testify. He visited at various periods Ancona, Rimini, Naples, Capua, Pola in Istria and Nîmes. In May, 1547, we also hear of his visiting Tivoli, Palestrina, Porto and Albano, returning to Vicenza in July, and taking with him nine books entitled "*L'Italia liberata dai Goti*." In 1551 he is for the third time in Rome, "in the company of Venetian gentlemen."

His time there was spent in earnest researches among the ruins of her temples and edifices; a time of hard labor, of measuring minutely, and theorizing, the results of which he has handed down to posterity in his valuable writings on architecture. He says: "I began, with the utmost accuracy, to measure every minute part by itself, and, indeed, I became so scrupulous an examiner of them, not discovering that anything of this kind is performed without the justest reason and the finest proportion, that I afterwards, not once, but very often, took journeys to several parts of Italy, and even out of it, that I might be able from such fragments to comprehend what the whole must needs have been, and to make draughts accordingly. I thought this an undertaking worthy of a man who considers that he was not born for himself only, but likewise for the good of others."

During his stay in the ancient city, no doubt he came often in contact with many of the great artists of the day. Here he could gaze upon the great achievements of Bramante, such as the Cancelleria and Giraud palaces, and the little Temple of S. Pietro in Montorio, and upon the works of Raphael, who died in 1520. He could study the progress of the cupola of St. Peter's under the masterly direction of Michael Angelo, and see this great master's work on the Palazzo dei Conservatori on the Capitol. The work of Baldassare Peruzzi at the Palazzo Pietro Massimi, and of Antonio San Gallo at the Farnese Palace, were also completed at the time of his first visit to Rome.

In Palladio's writings we find interesting information regarding the architects and painters of his day. Especially does he eulogize Vasari, whom he styles "a painter and architect of great merit." We also find mention made of Sansovino, who died in 1570, accompanied by much praise of the buildings erected by him. Other contemporaries are mentioned, amongst these being San Micheli, the great military architect of the Renaissance, whose special work is evidenced in his fortresses and palaces at Verona.

We have no information regarding Palladio's marriage, neither do we find any mention made of his wife. He had a family of four sons and one daughter. The eldest son, Marc Antonio, became a sculptor, like his father; we find him living at Venice in 1588, and he died in 1600. Leonidas, who assisted his father, died about 1574. We read of his directing the building of the dome at Montagnana in 1565. Orazio, the third son, studied law in Padua in 1564 and died in 1574. Silla, the youngest, was an architect, and, assisted by Scamozzi, completed the Teatro Olimpico, upon which his father was engaged at the time of his death, and died about 1627. Zenobia married Della Fede, a goldsmith, whose name appears inscribed in the guild at Vicenza.

Before the year 1564 Palladio was in legal documents called "of Vicenza" and "inhabitant of Vicenza." In those relating to the marriage of his daughter he appears as "civis Vicentine," a distinction worthy of mentioning in the days of the Republic.

None of the honors conferred upon Palladio can exceed the publication of his works, which was undertaken with much courage and diligence by Ottavio Bertotti Scamozzi, who measured, drew and restored his buildings. This book contains most interesting engravings and commentaries, showing much learning and scholarship. It embraces four large volumes, of which many editions have appeared both in Italian and in French. Though infirm for a long time, Palladio nevertheless continued to take an active part in the building of his edifices, and when finally the end came it found him at work upon one of his finest efforts, the Teatro Olimpico, finished after his death by his son Silla and Vincenzo Scamozzi.

Palladio's death was a great grief and loss to his loyal native city, which revered him not only for his genius, but for his many other virtues, for he was both amiable and benevolent, and beloved by his workmen.

Principles.—His principles are best exemplified in his buildings, but a striking point about many of them lies in the fact that he was not slavishly bound by his own rules as to the proportions of the Classical columns and their entablatures. Like many another, he was an exemplar of the saying that a genius can be above rules. Although he refers in detail to the various parts of a building and their proportions, he has left no information as to the design and composition of structures as a whole. It has been held that he was specially in favor of obtaining size and dignity in his composition by including two stories of his façades within one order. This has been said to have influenced English architecture in contrast with the precepts of Vignola which were followed in France; but Palladio employed both methods equally, while he was also fond of marking his ground story with rusticated blocks of masonry, expressing his first floor (*piano nobile*) by an order, and his upper (or attic) story by flat pilasters. He also employed the attic story, seldom used by other masters, in lieu of a great crowning cornice.

His style has been defined as a mean between the severe use of ancient forms and the licentious style of those who reject all rule whatever. Speaking generally, the plans of his buildings were suitable to the requirements of the Venetian nobility for whom they were erected. The fact that they are not well suited to our present requirements cannot detract from their stateliness and convenience when considered in relation to the age in which they were erected and the climate of Italy. The disposition and proportion of his apartments in regard to each other are often exceedingly happy and effective. Some have found fault with the magnificence and display which are observed in some of Palladio's façades, but here, again, we must remember for whom and for what purpose they were built. His clients were Venetian noblemen, eager to display their power and position by the erection of grandiose buildings, which he provided in his spacious columned vestibules, grand staircases, galleries, libraries and colonnades.

His architecture was essentially columnar and not fenestral, and his entablatures were proportioned to the column with which they were associated, whereas his predecessor, Sansovino, occasionally employed an entablature disproportionate to the columns, as at St. Mark's Library, in which windows are placed in a deep frieze.

Columns were sometimes placed on pedestals in order to give additional height, sometimes not so. The pedestals never seem to have been decorated with panels, sunk or raised, although this feature is so treated in Palladio's book. Fluting is generally omitted from the columns, and this was probably due to the fact that they were frequently formed of brick and stucco, materials which were unsuitable for fluting in long lengths.

Palladio's knowledge of the details of ancient Roman architecture was extraordinary, yet his inventive genius was considerable, and we seldom find that he repeated any of his designs. On the contrary, his façades abound with various dispositions of the orders, in addition to which he obtained effect and contrast by the judicious use of plain and rusticated walling and the use of arcades. His rustication is often excellent in design and scale, and gives considerable character to his buildings, not in an excessive way, as at Florence, but as a set-off to his columns and their entablatures. In the design of his arcades he appears to have preferred the larger order embracing two stories, with small pilasters placed behind them to carry the floor of the upper gallery. In these arcades, semicircular arches usually rest on piers in conjunction with a trabeated arrangement adopted from ancient baths. A favorite arrangement (of the basilica), however, was one in which he divided the interval between two piers in three parts by small piers, or columns, with an arch only covering the central aperture, a combination which seems to have been copied from some colonnades at Diocletian's palace at Spalato.

In the design of his doors, windows and niches, simplicity seems generally to have been sought after. Fewness in number and largeness in size was his aim. The openings were generally crowned by pediments, alternately angular and circular; but these were never broken, a rococo feature in which he did not indulge. On these pedimented openings he occasionally placed reclining sculptured figures, probably copied from Sansovino or Michael Angelo.

The entablatures to his orders are generally unbroken, but happy effects are sometimes obtained, as at the basilica at Vicenza, by projecting the columns beyond the main face of the wall and breaking the entablature around these projections. In the profile of mouldings he was especially careful; the architraves and friezes were generally plain, the latter being sometimes pulvinated, and his cornices have the consoles and other ornaments carefully centred over each

¹ A paper by Mr. Banister F. Fletcher, read before the Architectural Association, April 5.

other. Interior decoration seems to have been somewhat neglected, owing, no doubt, to want of funds.

Public Buildings.—The arcades surrounding the three sides of the Gothic Consiglio or Town-hall at Vicenza (also known as the Basilica or Palazzo della Ragione) are probably the most important of Palladio's works. Riccio, in 1496, Spaventa, in 1498, Sansovino, in 1538, Serlio, in 1539, and Giulio Romano, in 1542, were all engaged at various times on the faulty Gothic arcades of the original structure. Finally fresh designs were prepared by various architects and were submitted to the vote.

Three were chosen, one each by Spaventa, Giulio Romano and Palladio, with the result that the latter's design was finally adopted by ninety-nine votes against seventeen. It was commenced in 1550 and completed in 1614. It was constructed in stone brought from Piovene, and this stone has weathered in a remarkable manner, and gives to the building a beauty which Palladio's stucco designs do not possess and will never attain. It is curious that he says very little about the basilica himself, except that "there is another of them in Vicenza, of which alone I have given the draughts, because the porticos around it are my own invention, and I make no doubt but that this edifice may be compared to the ancient fabrics, and to be reckoned among the noblest and most beautiful buildings erected since the time of the ancients, as well on account of its largeness and ornament as of its matter, which is all hewn stone, extremely hard, joined and bound together with the utmost care."

The hall around which the arcades are arranged is 171 feet long by 68 feet wide. It has a semicircular roof covered with lead, hipped at each end. The ground story supports an upper one by means of vaulting, the upper story to the roof being about 70 feet. By referring to the plan we see at once that the width of the arcade bays is determined by that of the piers of the Gothic hall which they surround, these piers dividing the interior of the ground story into seven compartments in length and three in width. With these measurements (height and width), which could not be departed from, it is easy to see that Palladio had to decide on a design controlled and influenced by these data. He marked each story by an order, the Doric to the ground story and the Ionic to the upper one, these being formed as half-columns backing onto a wall of considerable thickness, and their entablature returned back to this wall at each column, thus giving a vertical expression and preventing the squat proportion which would have resulted had the cornices been continued round the façade without a break.

Furthermore, the height of the ground-floor arches on the façade had to be considerably less than the hall, because the entablature of the order occupied some depth, and the arcade had to be beneath this. A statue crowns the balustrade over each pair of columns, and thus an unusual and difficult proportion of bay was cleverly handled. It is in the design of the space between the principal columns that the beauty and originality of this building is found. A space approximating a square is contained between the main columns as vertical lines, and the base of these columns and the underside of their entablatures as horizontal bounding-lines. It is particularly in his treatment of these that Palladio has shown his skill, and produced a *motif* which to this day is known by his name. He has filled in this square space with four columns, placed in couples about 3 feet 6 inches from the main piers, and supporting a cornice from which springs a semicircular arch covering an opening twice its width in height. In the spandrels are circular openings.

The treatment of the angles of this building also shows the master hand. Here he was without restrictions as to width, and he has decreased this by placing the coupled secondary columns nearer to the piers, and by doubling the main columns at the angles, or, rather, by placing an extra angular three-quarter column which shows on each face. This diminution of width of bay and the doubling of the columns give an appearance of strength to the angles of the façade which is very pleasing. The basilica is such an important creation that a few words as to its detailed proportion may not be out of place.

The order to the lower story is Doric, consisting of half-columns about 2 feet 8 inches in diameter, attached to a wall about 4 feet 4 inches thick. The columns are about 8 diameters, and the entablature is slightly over a quarter of the column in height. The smaller Doric free-standing columns to this story have the same proportion as the larger, but they have a circular base, no doubt with the intention of preventing inconvenience to pedestrians. These small columns have a cornice, in height about one-eighth that of the columns, of the type shown, and from this springs the semicircular arch.

The upper story is ornamented with a large and small Ionic order, both placed on the same continuous pedestal about a quarter of the height of the larger columns, these latter being 2 feet 3 inches in diameter and 8½ diameters in height. Palladio has not here followed his own rules nor those of Vitruvius, who says "that when the columns are placed over each other the upper one should be a quarter less in diameter than the lower," whereas in this case it is only one-sixth. A balustrade one-fifth of the Ionic order in height crowns the façade. The height of the Ionic entablature is about one-fifth of the height of its column. The smaller free-standing columns of this order are 1 foot 2½ inches in diameter and 8 diameters in height. The capitals are of the Grecian type, and have circular plinths and cornice similar to that on the lower story. This building must rank as Palladio's masterpiece; the peculiar charm it now possesses is also much enhanced by the beautiful weathering of the stone.

The Teatro Olimpico at Vicenza is a good example of Palladio's skill in planning. In this building he was not in any way bound by precedent, as suggested by some who have only studied his work superficially. On the contrary, he well knew how to accommodate the principles of Classic architecture to the special circumstances of his own designs, modifying according to need the proportions, forms and distribution of the parts.

Palladio's studies in Rome among the Classic ruins, and also his excavations of the Berga Theatre at Vicenza, must have well equipped him for designing this building. He also had made a special study of Vitruvius and the elaborate directions laid down by that author indicating how the ancients planned these particular buildings. When, therefore, the Academy of Vicenza decided on constructing a building in which plays of the Classic authors might be given, it was to Palladio, whom they regarded as a high authority on the subject, that they naturally turned. The work was begun on May 23, 1580, in Palladio's presence, but he was not destined to see its completion, for he died on August 19 of the same year. In gratitude for his work we are told that the Olympic Academy nominated his son Silla to superintend the work. The theatre was not entirely completed till 1584.

The plan and general distribution leave no doubt that Palladio kept the form of the Roman theatre in view, but that, owing to the peculiar and restricted shape of the site, variations had to be made, the most notable being the semi-elliptical auditorium, which takes the place of the semicircular plan of the Romans. Scamozzi has been at some pains to inquire into the general principles of proportion adopted, in which, owing to the novelty of the elliptical plan, he had to depart from the proportions of Vitruvius. His remarks are certainly ingenious and convincing, but cannot receive a detailed notice here. The building proper occupies a site 123 feet long by 75 feet wide. It will thus be seen that the space originally at disposal does not include all that shown in the plan, but only the auditorium and the stage. The extra accommodations, including the three rooms to the left and the portions behind the permanent scene, were required afterwards.

The elliptic form, or, rather, that produced by portions of three circles, was decided upon as being most economical for the seating of an audience desirous of hearing and of seeing perfectly. The length of the scene is about 70 feet. It is constructed in stone and is composed of two orders of Corinthian columns placed one over the other. The upper columns are not isolated like those below, but are semicircular in plan and attached to the wall. Their pedestals project over the lower columns and support statues, forming a very pleasing feature.

Above the upper order of Corinthian half-columns is an attic story with small pilasters over the axes of the lower columns. In front are placed statues, while between them are square panels filled with sculptures representing the labors of Hercules executed by well-known sculptors. Between the columns of the ground and first stories are placed niches occupied by statues and framed in with pilasters, entablature and pediments, triangular or segmental. The centre of the scene has a large open archway of semicircular form, springing from the cornice of the lower story, and there are smaller square-headed doorways on either side, formed under the entablature of the ground story.

The return-walls of the scene, which are at right angles to it, are treated in a somewhat similar manner to the front. On the ground floor is placed a doorway centrally to each return, having on each side a semicircular-headed niche, above which are slightly sunk panels filled with bas-reliefs. The first door has a central opening, protected by a balustrade. Above the podium, or enclosing wall of the auditorium, are constructed the seats in thirteen tiers. They are about 21 inches in width and 15½ inches in height. Above the top row of seats is placed a Corinthian colonnade, cleverly contrived to hide the irregularities of the site.

The openings of the permanent scene, central and side, form entrances to the interior scene, constructed as streets radiating therefrom. These streets are built in perspective, with buildings on either side, the line of sight, or horizontal line, being half-way between the stage-level and the upper tier of seats of the auditorium. This construction in perspective was designed by the architect Scamozzi. The ceiling is flat, and extends without interruption over auditorium and stage, allowing the voice to travel without hindrance.

Town-houses.—Some of Palladio's most important designs were erected in his native town of Vicenza. They were mostly built in brick faced with stucco, which has now fallen away, and in consequence the designs suffer from having been executed in such poor materials. Palladio has been blamed for this by certain critics, who evidently consider that he was responsible for the depth of his client's purse. We should rather rejoice that, in spite of the materials at his command, he should have been able to produce such excellent results.

Palladio introduces the subject of town-houses as follows. He says: "I am sure that they who shall look upon the buildings I am going to give the draughts of in this book, and they who know how hard it is to introduce a new way, particularly in the art of building (in which every one presumes to be knowing), will think me very happy that I have met with persons who were generous, judicious and reasonable enough to hear and approve my reasons." The Palazzo Chiericati has a great gallery, or portico, which extends the whole length of the principal front on the ground floor, and is carried

up on the two wings to the first floor, the central portion of which is walled-in, forming the hall. The front of this building has two orders, the Doric for the ground floor, the Ionic for the first floor, and is an example of treatment which Palladio often favored. This is to be remarked, because his name is generally associated with the treatment of an order embracing two stories in height.

In Leoni's edition of Palladio's "*Architecture*" this building is shown with the Ionic order of the central portion of the first floor as pilasters, instead of half-columns, but most will agree that the substitution of pilasters would have deprived the façade of much of its interest. Another feature is the continuous pedestal, or stylobate, upon which the lower order rests, forming a solid base or support to the whole structure. The Doric columns are of sturdier proportions than usually adopted by Palladio, being $7\frac{1}{2}$ diameters in height. This sturdy proportion was probably used because these free-standing columns supported an upper story, the central portion of which was solid. These and other deviations from the master's own precepts are interesting as showing how he altered them to suit the circumstances of the case. The upper story is treated with the Ionic order, resting on pedestals which have no base. Although a large part of the building appears to have been erected during his lifetime, it was only finished a considerable time after his death, viz, towards 1700.

The Palazzo Tiene, like so many of the designs, was only partly finished. It consisted of a central square courtyard of 84 feet 6 inches, surrounded by a rusticated arcade, beyond which are the various rooms, the size of the whole site being 176' x 190'. The windows to the first floor have small three-quarter Ionic columns with entablature and pediment. This is an excellent composition, the reserved use of the order for one story only being very happy. These first-floor windows have rusticated shafts resting on pedestals, between which are placed balusters, a composition probably designed to lead by an intermediate stage from the masculine treatment of the basement. In Leoni's drawing the main entablature is shown at about one-fifth the height of the column, which is Palladio's usual proportion, whereas in execution it has been increased to one-fourth its height, our architect evidently taking account of the narrowness of the streets and the consequent foreshortening of the upper mouldings. The courtyard is equally fortunate, a similar treatment being adopted, except that the necessary openings are left for the arcading between the piers. The attic has also small windows lighting the rooms of the upper story. The finished portion was adorned with sculpture by Alessandro Vittoria, Bartolomeo Ridolfi, and with paintings by Anselmo Canero and Bernardino India, both the latter being of Verona.

The Palazzo Valmarana was erected by the Conti Valmarana, as Palladio says, "not only for their own honor and convenience, but also for the ornament and glory of their country," an idea which might be more often followed by rich men in these days. The house is divided into two parts by a central court, and behind is shown a large garden, 120' x 68' 6" wide. Only the front block of this important façade has been executed. The stables are also placed in rear of the site. The ground-floor apartments are vaulted and the upper ones ceiled at a height equal to their breadth. It is curious to observe that in Leoni's edition the site of this building is shown as rectangular on plan, whereas in reality the front wall is not at right angles to the side walls. There were two ways of treating this façade, viz, either to make the front wall at right angles to the side walls, in which case it would have to be set back from the general line of the other buildings in the street, or, as Palladio arranged it, of making it line up with the general building-frontage, allowance being made for the difference of shape in the front rooms. In choosing the latter arrangement Palladio showed his good taste and left it as a legacy for architects of all time. Many modern buildings have been spoiled by neglecting to adopt this principle in dealing with awkwardly shaped sites. The method of stepping-back the façade in order to make rooms square is very unsatisfactory, and has only to be seen to be at once condemned. The façade of the Valmarana Palace has been the subject of much criticism. It shows another treatment, having an order of Composite pilasters embracing two stories in height and an attic story over them.

The façade above the base is in brick and stucco. The main entablature is one-fifth the height of the column, and the order rests upon projecting rusticated pedestals, one-quarter of the height of the pilasters. The secondary order of the Corinthian type, which marks the ground floor, rests upon the same pedestal as the larger order, an arrangement which many critics have condemned. This order is of half pilasters backed against the main order, and is not a happy arrangement. The entablature to this order is broken at each intercolumniation against the main pilasters. Above the main entablature is an attic, the height of which is one-quarter that of the pilasters. The upper windows have balconies of small projection. It will be seen that the main pilasters do not terminate the façade in a manner which might be expected, the secondary order being doubled instead and made to support statues above its cornice. As a principle of design this does not appear correct, the length of the façade being thereby apparently diminished, and the framing of the whole design unpleasantly affected.

The Palazzo Barbarano is interesting in many ways, because Palladio has given his original design and also that which was actually carried out. It has an entrance leading to a large columned hall, beyond which is an open court. As to the façade, each story has its own order, whereas in the original design one Corinthian

order of semi-columns resting on a podium was taken through two stories. There is no doubt that the second, or executed design, is immeasurably superior. On the ground floor the wall-space between the Ionic half-columns is rusticated and the windows have flat arches, the abundance of wall-space giving the necessary strength which a ground story should possess. Exception might be taken to the impost moulding upon which these arches rest as being unnecessary. The upper story is in a most ornate manner. The windows have architraves and consoles supporting pediments, alternately triangular and segmental, upon which are placed reclining figures. The podium to these windows is pierced with a balustrade, while the Corinthian columns are unfluted and rest upon a continuous block immediately over the cornice of the lower order. An attic plainly treated with square window crowns the whole building. The angle treatment of the Ionic order is peculiar. Although built in brick and stucco, this palace must always remain a triumph of art over matter. The meanness of the material used is completely lost sight of in the superior excellence of a master design. In execution this has been considerably altered. The original design was for a regular façade of seven bays with a central opening leading into a columned vestibule. Additional land appears to have been acquired, which throws the principal entrance out of the centre. The Ionic columns to the front façade have a height of 9 diameters, those of the courtyard at the back $9\frac{1}{8}$ diameters, and those to the entrance $8\frac{1}{2}$ diameters, these latter having to support a solid vault. Palladio herein followed Vitruvius, as the latter mentions in his Book I, chapter 2, "that variations may well be made from the regular proportions in order to suit them to special circumstances." The Corinthian columns to the first floor are also raised upon a plinth in order to prevent their bases being hidden by the projecting cornice of the lower order.

The Palazzo Porti faces two streets, and the front portion only was executed. The entrances from each street led through columned halls to a great central courtyard, open to the sky, and surrounded by a colonnade of Composite columns embracing two stories in height, and crowned with entablature and balustrade. The passage on the first floor is supported on pilasters attached to the backs of these tall Composite columns.

Palladio mentions Paul Veronese as the artist employed to paint portions of the interior. The exterior is certainly one of the most pleasing, and resembles that already shown in the Palazzo Tiene. A rusticated basement with square-headed windows and circular relieving arches with carved keystones supports a *piano nobile* of attached Ionic columns and entablature. Between the columns are square-headed windows surrounded by an architrave moulding, and provided with consoles carrying pediments alternately segmental and triangular. Over these pediments Palladio designed reclining figures, but only three groups are really executed, a central and two angle ones. This omission helps the façade, which might otherwise appear too complex and crowded. There is also another important difference between Palladio's design and that which was actually carried out. In the statues which decorate the attic story he shows a range of eight, resting on the top of the attic pilasters, whereas there are only four, and they are placed immediately above the cornice in front of the pilasters. This appears an infinitely better position, for there is something dangerous looking and gymnastic about free-standing sculpture at a great height from the ground.

The Palazzo del Consiglio, also known as the Palazzo del Capitano, the Prefetizio, Municipio, Loggia Bernarda and Palazzo Comunale, is not mentioned in Palladio's book, and must therefore have been erected after its publication. It is comparatively a small building, a portion only of the original design, and is situated opposite his masterpiece in the Piazza de' Signori. Thus we can see at a glance one of his earliest and latest productions. The Composite half-columns, without pedestals, are carried through two stories and their entablature breaks round them, and is crowned by a balustrade. The attic story over is set well back and does not interfere with the general proportions of the façade, which are excellent. The lower portion forms a triple arcade, and the upper story has windows and projecting balconies supported on triglyph brackets. The windows of this story cut into the architrave of the main entablature, a defect in the design which is hidden by the outside blinds. The view shows the dilapidated condition of this façade, the brickwork of the columns showing where the plaster has fallen off. The treatment of the side façade differs from the front, the main order not being carried round, and is not successful. The Casa del Diavolo, also known as the "Antica Posta," the "Casa Porto" and other names, is an unfinished design. Two bays only of the façade have been completed, which indicate the immense scale adopted. Half-columns of the Composite order rest on deep pedestals, the cornice of which forms the impost of the principal gateway. These columns are 10 diameters in height, and from their abaci sculptured festoons, bound with oak-leaves, stretch from one capital to another. The windows to the first story are crowned with pediments, alternately segmental and triangular, and have projecting balconies with balustrades supported by consoles. The entablature of the main order has windows in the frieze, in the manner of Peruzzi, to give light to the small rooms of the upper story.

The House of Palladio was erected in 1556. There appears to be no evidence that Palladio ever resided in it. At the same time, as an instance of one of his smaller works, which he might have designed for himself, it is an exceedingly interesting piece of work. The plan consists of a front and back *corps de logis*, with an open

area between, to the side of which is the staircase. The ground story has Ionic columns with entablature one-fifth of their height. A large centre semicircular-headed opening forms the chief entrance, and has reclining figures in the spandrels. Smaller flat-headed openings are on either side. The first story has Corinthian pilasters of a rather stumpy proportion, and above is an attic story crowned with a modillion cornice. The blank space in the centre of the first story is probably caused by the fact that the light for this room is obtained mostly from the interior court.

[To be continued.]

MUNICIPAL HOUSE-BUILDING.¹

WE now come to municipal house-building as it has been carried on in England at the expense of the taxpayer. After examining the facts, it makes one hesitate as to the wisdom of this work, even though to do so may change the opinion of a lifetime. The amount of loans outstanding for working-class dwellings, according to the latest available official reports, is about \$35,000,000. This does not include an enormous scheme proposed in Glasgow involving nearly \$4,000,000. This proposal, however, has been rejected by the Scotch Private Bill Commissioners, who only sanctioned a loan of \$750,000 to complete schemes already authorized. The action of the Commissioners has been regarded as an indication that the Government authorities believe Glasgow has gone far enough in these schemes. In commenting upon this action Mr. Gibbs says:—

"They were evidently impressed by the strong representations to them by owners and occupiers of property in Glasgow, and by the three railway companies which run into the city. It is, moreover, very doubtful whether this municipal house-building has done much to solve the problem which is the ostensible object of the local authorities. The cost of building-materials and the rate of wages have increased, and while a corporation cannot get the same amount of work out of its employés that a private contractor can, the latter cannot, if employed by a municipality, work as cheaply as he can for a company, owing to the restrictions under which his contract has to be carried out."

Mr. Beecherof, of the London County Council, tells the same story about the housing schemes of that body, viz: "That they find that they cannot carry out their building without writing down the value of the land, and further stated that the sites of the dwellings of the Council are valued at \$475,000, but that their actual value is \$1,150,000, the difference being thrown upon the rates. Even then, the rents the Council are obliged to charge to avoid throwing a still heavier burden on the ratepayers are too high for the very people they wish to house, who, moreover, refuse to live under the rules and regulations (no doubt necessarily enforced in the interests of sanitation), and driven from one slum, they crowd into another, and exaggerate the evil. In one locality in London it is stated that only a few of the 5,000 occupants of the houses which were pulled down became tenants in County Council buildings."

Mr. Gibbs further says:—

"The same story is told all over the country. In Liverpool, where over \$10,000,000 have been spent on housing-schemes, the proportion of the former tenants who occupy the new houses is comparatively small, while at Burton-on-Trent and Stafford housing-schemes have been adopted which will involve a charge upon the rates, and the ratepayer who does not live in municipal buildings will have to pay for those who do."

The general effect of the municipal house-building has been to stop all private enterprise from undertaking workmen's dwellings. The *Times*, in its series of articles on municipal socialism, gives a history of what the housing trusts like the Peabody, Guinness and Rowton companies have done for London. On the strictest business lines these companies have been able to secure profits ranging from two and one-half to four, and, in some exceptional cases, five per cent. Now that the city is taking up the work at a loss, the public dare not invest in private housing-companies, for if they did the municipalities would destroy the possibility of the capital becoming remunerative. Commenting on this investigation the *Times* of October 20, 1902, says:—

"Our correspondent shows what, indeed, is common knowledge among all who have given any attention to the matter, that municipal house-building is a failure. When all sorts of dodges have been resorted to in order to lighten the apparent cost of providing workmen's dwellings, the fact stares us in the face that the dwellings are beyond the means of the people for whom they were ostensibly built, or that municipal regulations are too irksome for that class to put up with. There is a showy, but not very practical, Act of Parliament which saddles municipalities with initial costs and delays enough of themselves to destroy the business prospects of a building speculation. Putting these aside, we find that the municipal employer does not get the same value for money as the private one. Overseers and workmen alike think the public purse inexhaustible and a proper subject for plunder. The municipal council consists of gentlemen who depend on the votes of their own servants,

and can most easily secure them by laxity in control. The demoralization spreads, the private builder cannot get more work than the public one exacts, and the result is that the rents of workmen's houses steadily rise in spite of eleemosynary aid. Not only so, but in many cases there is an absolute dearth of houses, whereupon a cry is raised, not for a return to common-sense, but for more municipal building with a more frank and complete reliance upon the rates. Accordingly, the rates are rising with alarming rapidity in most places, and the rise is contemplated with absolute satisfaction by our Socialist theorists. They think they are making the well-to-do pay for the poor and the idle. They are really inflicting a loss upon the community, and that loss will fall, in the long run, heavily upon the poor, in spite of all the legislation in the world. The poor are far more deeply interested than the rich in the wise conservation of the national resources."

If the above has been the result of municipal house-building in England, it would be most unfortunate to introduce this method in America. It would be far wiser to encourage philanthropic capital to undertake the work, always under city supervision and coöperation, with the idea that the reward should be a low but sure rate of interest.

THE CORINTH CANAL.

THE Corinthian Canal in Greece is the subject of a communication to the State Department by Frank W. Jackson, United States Consul at Patras. He says that while the canal which connects the Gulf of Corinth with the Gulf of Ægina, cutting its way through the Isthmus of Corinth or Megara, may not be considered of peculiar value in the United States in its proposed shortening of the sea-distance between New York and San Francisco, since the canal of Corinth dwindles into insignificance when compared with the Panama water-route, yet it may be considered a miniature of the projected Panama Canal; and in that respect it has interesting features. In regard to the historical side, he calls attention to the fact that there are striking similarities between the two canals, as both were undertaken and eventually abandoned by companies supported by French capital. The first proposition to cut through the neck of land at Corinth was in 600 B. C., when Periander was prevented from so doing by popular superstition. Julius Cæsar and Caligula revived the scheme, but did nothing. The Emperor Nero made the first real attempt to cut the canal, and evidence still to be seen shows that the work was prosecuted with vigor, only to be abandoned at his death. In later times the Venetians resurrected the scheme, as did Gov. Cape d'Istra in the early days of the Greek independence, the Cretan engineer Lygouni, and the Greek Government itself in 1869. It was not until 1881, however, that General Tir, aide-de-camp of Victor Emmanuel, obtained the rights for beginning the work, and organized a company with its offices in Paris.

The work began from the Corinthian side and was divided into five sections. Little difficulty was experienced in the first three, or about 4,700 metres (5,140 yards) of the whole. With the same dispatch, also, the last section jutting upon the isthmian side was made ready. It was in cutting through the 300 metres (326 yards) which stretched between these portions, a section formed of material so hard that the use of dynamite failed to dislodge a single block, that the company met its greatest drawback, and, notwithstanding the extension of time accorded for the completion of the contract, the society found itself out of funds and unable to continue the work. A new subscription was made, and the society dispensed with its costly machines, which were useless in cutting through the flint-like strata, and purchased others which in the end proved as unavailable as the former ones. These and other expenses (notable among which must be recorded that of bridging the canal, at a cost of \$80,000) rapidly reduced the newly subscribed capital, and in 1890 the society found itself again penniless and a receiver was appointed.

The failure of this company represented an outlay of almost \$10,000,000. It was then that Mr. Syngros organized the present enterprise with a capital of 5,000,000 francs (\$965,000) which rapidly, but not without hardships, completed the work. Assisted by the National Bank of Greece and the Cretan Industrial Bank, Mr. Syngros at once secured the necessary funds, and, in spite of the solid rock yet to be cut through, the canal was completed three years after the failure of the old company, and the formal inauguration celebrated in July, 1893. The canal shortens the distance between all points in the Adriatic and the Piræus more than 130 miles. It is not an expensive water-route, and it brings Patras and Piræus, the two centres of the export and import trade, at both of which most vessels must touch, within twelve hours of each other. Yet with all of these advantages, in an age when a day's time not infrequently decides the fate of competition, the picturesque water-route is almost deserted by foreign craft, and the numerous vessels which come from the north and touch at Patras persist in braving the Greek coast-line, the storms off the southern capes, and the twenty-odd hours' extra sailing to a use of the Corinthian Canal.

The reason is that the canal is poorly located. The winds which render the open gulf a raging sea do not subside at the approach to the water-way. The canal is like a huge air-shaft, and the mighty currents of air which rush from one gulf to the other are not calculated to encourage the mariner to run his ship between precipitous

¹ Extract from a paper by Mr. Robert P. Porter read at the recent National Convention upon Municipal Ownership and Public Franchise.

walls 260 feet high and separated by only 80 feet of sea. A second obstacle takes the form of a reversing current, due to a striking variation in the tides of the two gulfs. The real difficulty, however, is the size of the canal itself; its width at the bottom is 68 feet 11 inches, and it has a depth of 26 feet 3 inches. The largest vessel to have used the canal was the Italian cruiser "*Giovanni Bausan*," of the following dimensions: Length, 275 feet; beam, 42.6 feet; draught, 18.4; and tonnage, 3,068. However, vessels of 23.5 feet draught and 68.5 feet beam are permitted by the regulations to pass, which dimensions would include most of the steamers regularly trading in Greek waters. Nevertheless, the exacting pilotage which such dimensions render necessary, emphasized by the reversing current, has so far served to make the canal a much less appreciated water-route than it would have been in the days when steamships were more modest in their dimensions.

It is too late to think of changing the size of the route, but the other difficulties can be reduced, and it is probable that some effort will be made to remedy matters. At each approach the small breakwaters, while rendering necessary service, contribute to the difficulties of navigation, and are not sufficient to afford absolute protection to the canal. It is proposed to supersede these barriers by two large harbors that will make the approach less hazardous and will largely regulate the current. No action has yet been taken, but some such plan is under consideration, although the extraordinary depth of the Corinthian Gulf will render the repairs very costly.

The span of the isthmus, as traced by the canal from gulf to gulf, is 6,342 metres (3.94 miles), and its greatest depth 79.16 metres (259.7 feet). A solid block of masonry, some 6 feet in thickness, lines the base and sides of the channel to a height of 32.5 feet, or about 7 feet above the sea-level, as a protection against the currents, its extremities making a substantial quay on each side from sea to sea. The sides of the channel have required no special protection of masonry, except in a few sections, notwithstanding their precipitous pitch. A passenger on one of the Greek steamers, looking up at the railroad-bridge which crosses the canal at a height of 47 metres (122 feet) and is but 80 metres (262 feet) long from end to end, believes himself to be gazing almost straight upward, while the slopes of the deepest part of the channel, by reason of their greater height, rise like two perpendicular cliffs. The slopes are protected from erosion by conduits which skirt the edge of the summits and carry away all surface water. Sixty electric-lamps of twenty candle-power mark the channel at night, and on each side at distances of 600 feet are attached iron stanchions to which ships may tie in case of accident or as a protection against a driving current.

THE ZIMBABWE RUINS.

FROM a report by Mr. R. N. Hall, which is included in the documents just issued by the Chartered Company, it is possible to gather a clear impression of the present condition of the Zimbabwe ruins and of the measures taken by the Company to preserve these remarkable evidences that Central Africa was exploited for gold by one of the races of antiquity. "On inspecting the ruins, Mr. Hall found the interior of Elliptical Temple one impenetrable jungle of trees, bushes, creepers, tall grass (6 feet to 10 feet), and decayed tree stumps and branches, so that it was impossible to see beyond a few feet, while the surface of the ground was most irregular and thickly covered with wall debris. The air inside was fetid and heavy-smelling from the rank vegetation. There being no opening on the eastern side, the interior is protected from the prevailing winds, and the sun, shining on the damp, dense and almost tropical foliage and plant-growth, made the air oppressive and unhealthy, so that one could not remain long at a time in the building. Our first work was to clear away the undergrowth, but it was so dense and matted with creepers that, with fifteen men working for a whole day with hatchets, sickles and spades, we were only able to make a few feet advance into the interior from the west entrance. It required nine days for fifteen men to clear the interior of undergrowth only. A further three days have been given to pulling up grass and shrub roots. The atmosphere of the interior is completely changed, as the sun has dried the surface of the ground. It is now possible to stand in the centre of the building and obtain an uninterrupted view of the walls all round, and at the same time to see at a glance the whole of the divisional walls and enclosures. The north side of the summit of the conical tower has in very recent years been denuded of several courses of blocks owing to the boughs of large trees swinging upon it in the high winds. The tower is more reduced than is shown in photographs taken six years ago. The dentelle ornamentation on the summit has practically disappeared within the last ten years. Some ancient blocks in the top courses are likely to fall. These blocks could be pushed back flush with the face of the tower, and some of the blocks which have very recently fallen might be restored to their original position. The summit, when cleaned of vegetation, should be cemented over. It is a feature in Zimbabwe construction everywhere in Rhodesia for a block, when it falls, to carry with it the stones of the course beneath it. Visitors point out that the tower has lately shown a tendency to tilt somewhat towards the northeast. This is mainly due to the dense tree-growth enveloping the tower, which keeps it constantly dripping with moisture, especially on the north side, where the main wall further screens it from the morning sun. The only remedy appears to be to so thin out the trees that the tower and its foundations may become perfectly dry. The wet

state of the tower has caused it to become overgrown with lichen, which, decaying, produces vegetable matter which lodges in the crevices of the courses, and out of which small plants and shrubs grow, many of which we have removed. A large bush was growing out from the side in mould so formed, and the remains of a large bush on the summit are still to be seen. Should the tilting not be prevented by such means as the thinning out of adjacent trees, the value of the tower to scientists as a means of calculating the orientation of the temple, and, therefore, its age, would become lost. Three or four trees from close to the northeast, north and northwest sides of the tower have been cleared away, and the vicinity has already a much drier appearance."

The dank air and soil round the tower have caused the extensive growth of large monkey ropes, the roots of which have pierced the walls and torn out lengths of the stonework. The ropes have been cut down and uprooted, so as to give a clear view round the temple. The floors of the passages have been cleared of soil, scattered stones and wall debris piled in places from which they fell, the boughs of trees cut away and a clearing eight yards wide made round the outside of the whole of the temple, so that an inspection of the walls by visitors is now possible. The report contains a list of various discoveries of articles and new features in the architecture. — *London Standard*.

BOOKS AND PAPERS

A LITTLE book¹ by Miss Clementina Black is welcome, as it puts before us concisely and sympathetically the life and work of that genius prematurely called to his fathers, Frederick Walker.

Beginning as an engraver, Walker became a distinguished water-colorist, and ended an Associate of the Royal Academy, through his originality and poetry as a painter in oil-colors. Many of his pictures are in the Tate Collection on Milbank, London.

He was a colorist and an individualist—you cannot recall any painter, ancient or modern, whom Walker followed; and if he studied the works of his artistic forbears it was in the same manner as he studied Nature herself: gaining his knowledge, and applying it, according to his own idiosyncrasies. His intimate friends tell us that he seemed idle. That is to say he was not always "at work"; but it was, as a matter of fact, at these very moments of idling, when he appeared to be doing nothing, that he was mentally studying, and thinking out his pictures. As Sir Joshua years ago pointed out, some people keep up a perpetual activity with the brush "to evade and shuffle off real labor—the real labor of thinking." Walker was an out-door painter and, like many others, he loved his native land when summer green had departed. The autumn tints, especially when the sun was low, the beautiful red-brown of the trees, their bright green stems, the purple distance—these were what he loved in English landscape; and then we find him carrying a seven-foot canvas over wet grass to find a bit here and a bit there for the landscape background of his "Brothers," that beautiful idyl of semi-Classic design.

In some of his attitudes there is a certain affectation—they are forced; see, for instance, the reaper in the "Harbor of Refuge" and the boy's legs in the "Plough" and the "Wayfarers." But no one can give anything except unstinted praise to that exquisite scheme of color, the "Vagrants"; not only is it masterly, but one may almost call it a perfect work, for its beauty of tone is unrivalled. Coming, as Walker did, from a not too strong stock, and working in late autumn in the ungenial and wet atmosphere of the Thames Valley, it is not surprising that consumption claimed him as a victim. It has been said that Du Maurier drew his character of "Little Billie" from the painter's life, but, whether or no, the real Walker faded away, like the fictitious one, in the middle of his career, full of promise, having achieved much and at the same age as Raphael. Had these youthful geniuses, and others, such as Vandyke, achieved all that lay in their power? or would they have done more had they lived another twenty years? This is a question no man can answer.

ILLUSTRATIONS

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

ILLUSTRATIONS OF PALLADIO'S WORK: TWO PLATES.

HOUSE OF J. J. ROGERS, ESQ., WYNCOTE, PA. MR. ADIN B. LACKY, ARCHITECT, PHILADELPHIA, PA.

PORCH OF THE SAME.

¹"*Frederick Walker*." By Clementina Black. London: Duckworth & Co. Price 2s. cloth; 2s. 6d. leather.

OLD HALF-TIMBER HOUSE, WERNIGERODE, SAXONY: [BUILT 1674;
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OLD HALF-TIMBER HOUSE, WERNIGERODE, SAXONY: [BUILT 1670;
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THE STADTTHEATER, GRÄTZ, STYRIA.

THIS plate is copied from *Architektonische Rundschau*.



[The editors cannot pay attention to demands of correspondents who
forget to give their names and addresses as guaranty of good faith;
nor do they hold themselves responsible for opinions expressed by
their correspondents.]

INSANITARY OFFICE LIFE.

NEW YORK, N. Y., May 11, 1903.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—There is one evil connected with the multiplication
of high buildings that is not often emphasized or appreciated. We
hear a great deal about the congestion of traffic, the darkening of
the streets, and the fire-hazard, but not so much about the health
of the thousands of clerks who are compelled to work in badly-venti-
lated and practically unlighted offices. It is not hard to imagine
the probable result of working eight or ten hours a day, year in and
year out, over a desk illuminated only by electric-light. There is
nothing more essential to health than fresh air and sunlight, and the
lack of them is spoiling the chance of ultimate success of many a
young man. We provide 30 cubic feet of air per minute and un-
limited quantities of sunlight for our school-children, but when they
have graduated many have to work for double the number of hours
each day in offices where the occasional opening of a door introduces
the only fresh air and the dim glow of an incandescent-lamp is the
substitute for sunlight. Inquiry brings out the fact that the eyesight
and often the general health of a surprisingly large number has been
seriously impaired from this cause, and we would do well to con-
sider so important a matter when we discuss the advisability of the
legal limitations of the height of our skyscrapers.

Yours truly, WM. O. LUDLOW.



THE EXCAVATIONS AT ORCHOMENOS.—The discovery of a beehive
tomb at Orchomenos, of which the walls were adorned with slabs cov-
ered with a design that might be called Assyrian, has revived the inter-
est in a place described by Homer as renowned for its wealth. It was
known as the Boeotian Orchomenos, as there was another city of the
same name in Arcadia. There are so many ruins about the site, it is
difficult to determine where was the city or its most important part. It
has been supposed there was a removal, caused by the overflowing of a
lake, to a higher position. The treasury of Minyas, included by Pau-
sanias among the wonders of Greece, stood at the foot of the Acropolis.
It was constructed of white marble, which must have been conveyed
from a long distance. The ancient topographers evidently preferred
the treasury of Orchomenos to that of Mycenæ. Schliemann visited the
place and made some discoveries in it, but he cared more for Mycenæ
from its connection with Troy, of which he was in search. There can
be no doubt that Orchomenos has importance of its own which makes
it a desirable field for exploration. The work is about to be under-
taken under the auspices of the Bavarian Academy. Funds have been
provided by Herr Jordan, and the operations will be directed by Herr
Bulle, who will have the aid of Herr Furtwängler. They will endeavor
in the first place to bring to light the remains of the palace. As Orcho-
menos was called the City of Graces, it is to be assumed the place pos-
sessed some architectural dignity. But, so far as is known, the masonry

was of polygonal construction, the style seen in Tiryns having been
only partially adopted.—*The Architect*.

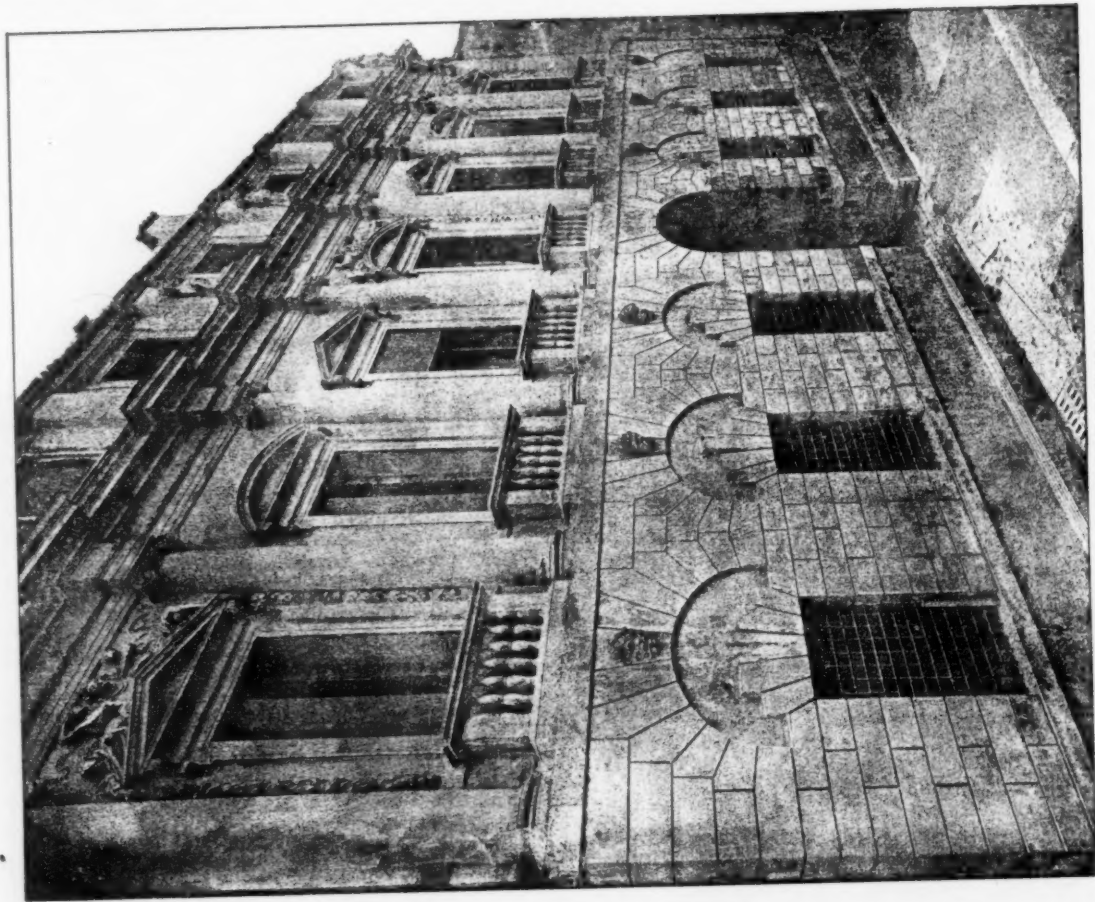
TALE OF AN ITALIAN CHIMNEYPiece.—Paris, as we remarked the
other day, apropos of the commotion in the Louvre over the tiara, is a
great centre for the forging of antiquities. There has just been dis-
covered in the suburbs a thriving factory for the fabrication of Egyp-
tian mummies, cases and all. These were then shipped to Egypt, and
in due time returned as properly antique corpses. As regards mediæval
antiquities, a very funny story is now current. A certain clever work-
man in stone made to the order of a dealer in mediæval antiquities a Ve-
netian chimneypiece of the fifteenth century, and received for his work
some two or three thousand francs. The dealer shipped the chimney-
piece to Italy, and had it set up in a palace near Venice, bringing back
to Paris photographs of the palace, and of the chimneypiece *in situ*.
By means of these photographs he aroused the interest of a rich col-
lector, who sent his secretary to Venice to make sure that the photo-
graphs did not lie, and, on his favorable report, bought the thing for
50,000 francs. On the arrival of the article at his house in Paris he
sent for some workmen to open the cases. One of them appeared
to him to go about the work rather carelessly, and he remonstrated
with the man, who answered: "Have no fear, sir; I know just how it
needs to be opened, for I packed it when it left Paris."—*N. Y. Evening
Post*.

THE COLOR-MEANINGS OF ORIENTAL RUGS.—To understand and
appreciate fully an Oriental rug it is necessary to know something of
the significance of the colors used and of the political and religious
history of the country in which it was made. For not only the designs,
but the tones in which these are woven, are symbolic of national or
personal prejudices. To the Oriental, colors stand for virtues and vices,
royal insignia or social stigma. Tyrian purple, a rich and exquisite
shade verging upon crimson, is almost universally regarded as royal to
a classic degree. In China yellow is the color of royalty, and as such
has held supreme sway since time immemorial. With this nation red
is a sign of truth and virtue, and with the Egyptians a symbol of
fidelity to "the faith." In China, also, white is the garb of sadness
and mourning, black signifying wickedness. Green is the gala color of
the Turk, standing, indeed, so high in his estimation that its use in
rugs, where it would be trodden under foot, is regarded as little short
of sacrilege. With the Persians, rose tints symbolize the highest wis-
dom; black and indigo, sorrow. The preference of the Persian for
duller tones and quieter shades than those which delight all the other
peoples of the East gives the representative Persian rug a reserve and
dignity that are effective and pleasing to Occidental taste.—*N. Y.
Tribune*.

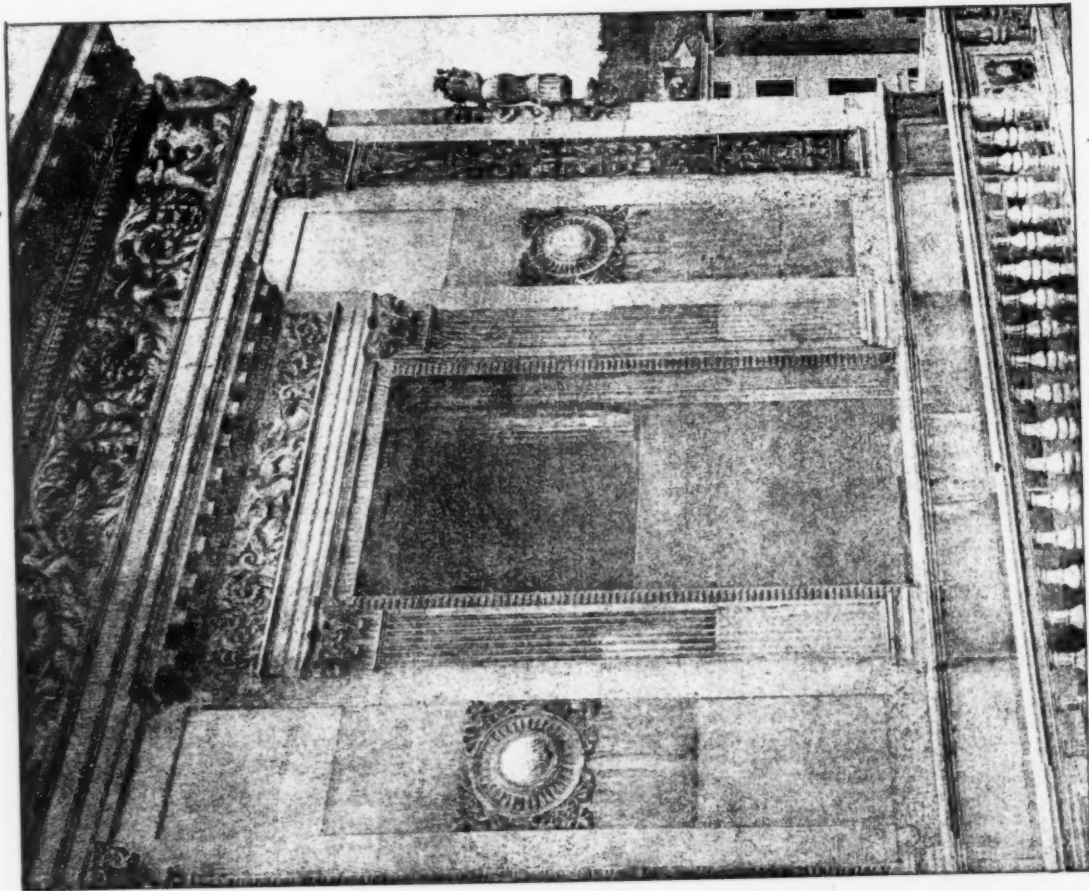
"THE GOLDEN CROWN," BRESLAU.—Breslau is about to lose one of
its treasures. "The Golden Crown" will shortly be removed. The
building occupies a large site in the centre of the town, and it will be
supplanted by several houses of business. "The Golden Crown" was
much prized by the people, for it was one of the stateliest mansions to
be found in Germany. It was erected between 1521-28 by Johann
Holtz, who by his marriage was able to obtain possession of the site,
which even at that time was valuable. The building evidently was
erected when Italian influence was powerful in Breslau, and an old
representation of it shows that the front was adorned with figures and
ornament executed either in painting or in sgraffito. An inscription
dated 1544, "Quævis terra patria," suggests the building belonged to
a stranger, and indeed Holtz was not a native of Breslau, but of
Cologne. The house was altered from time to time, yet it was never
degraded, and was always occupied by people of some rank. Breslau's
prosperity through manufactures is increasing, and the ancient patri-
cian mansion, like many another example of antiquity, has to succumb
to trade. There is general regret at its loss, but the inevitable is not to
be avoided.—*The Architect*.

A FORTIFIED RECTORY.—In an article on "Historical Houses" in
the May issue of *The House* a writer calls attention to a curious relic
of the days when the Northumbrian pastor was compelled to live in a
fortified house if he wished to preserve his worldly goods from the
plundering bands of moss-troopers who were continually crossing
the Scottish border and raiding the homesteads of defenceless villagers.
One of the best examples of these fortified rectories, originally built in
the fourteenth century, still exists in Rothbury. It is described in a
list of fortlets in 1542 as a "toure and a little barmekin, being the
man'con of the p'sonage of Rothbury." It has walls 11 feet thick
at the base and 6 feet at the top. It has turrets at the corners and a
chamber with a stone floor, into which the rectors drove their cattle at
night or on the approach of the raiders.

MR. WHISTLER'S HONORS.—The honorary degree of LL.D. con-
ferred yesterday on Mr. James McNeill Whistler by the University of
Glasgow is the second honor which this distinguished and resolute
artist has received from Scotland, as the Royal Scottish Academy
elected him an honorary member a few months ago. These are his
only official British honors, although he has lived in London at least
half of his long life. The first public body to purchase one of his
pictures was the Corporation of Glasgow, which possesses his portrait
of Thomas Carlyle, a work which, although it is a much more interest-
ing declaration of the painter's temperament than of the sitter's, brings
every year not a few visitors to the city. Many of Mr. Whistler's
works, including his "Princesse du Pays de Porcelaine," which was
the centre of the famous room in the house of Leyland, the great
Liverpool shipowner, are in the neighborhood of Glasgow. I regret to
hear that Mr. Whistler is not at all well after a winter in the house he
has rented on the Chelsea Embankment.—*Manchester Guardian*.



PALAZZO PORTO, VICENZA.



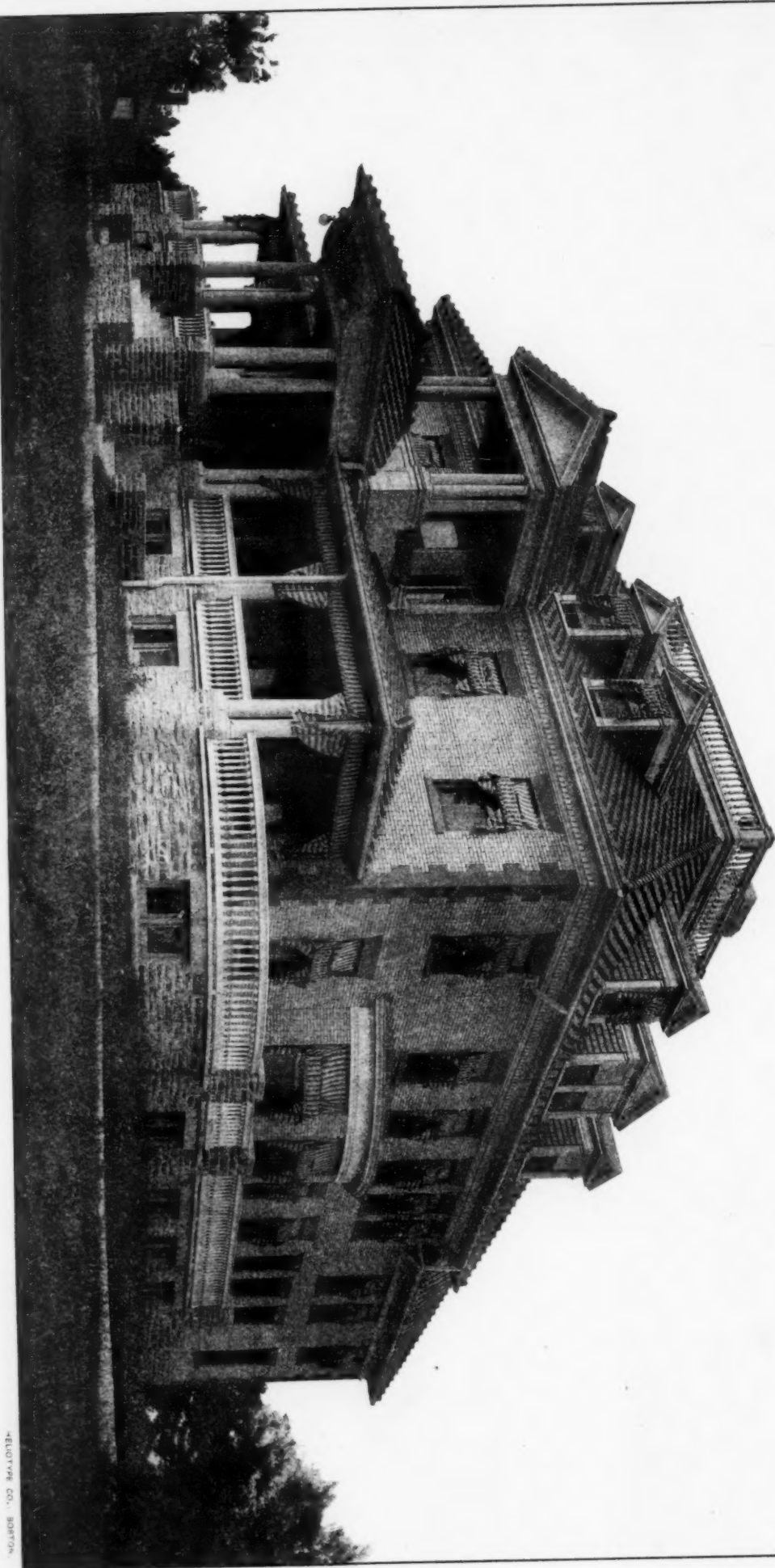
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The American Architect
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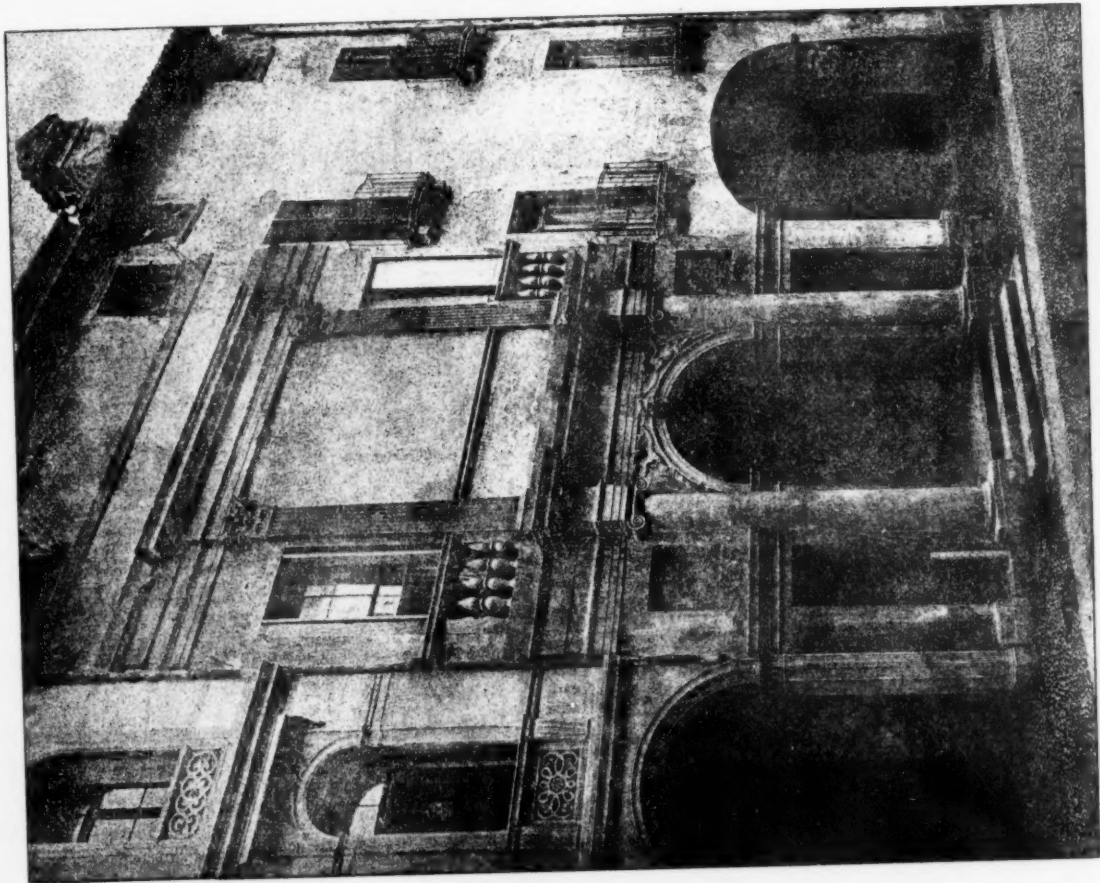


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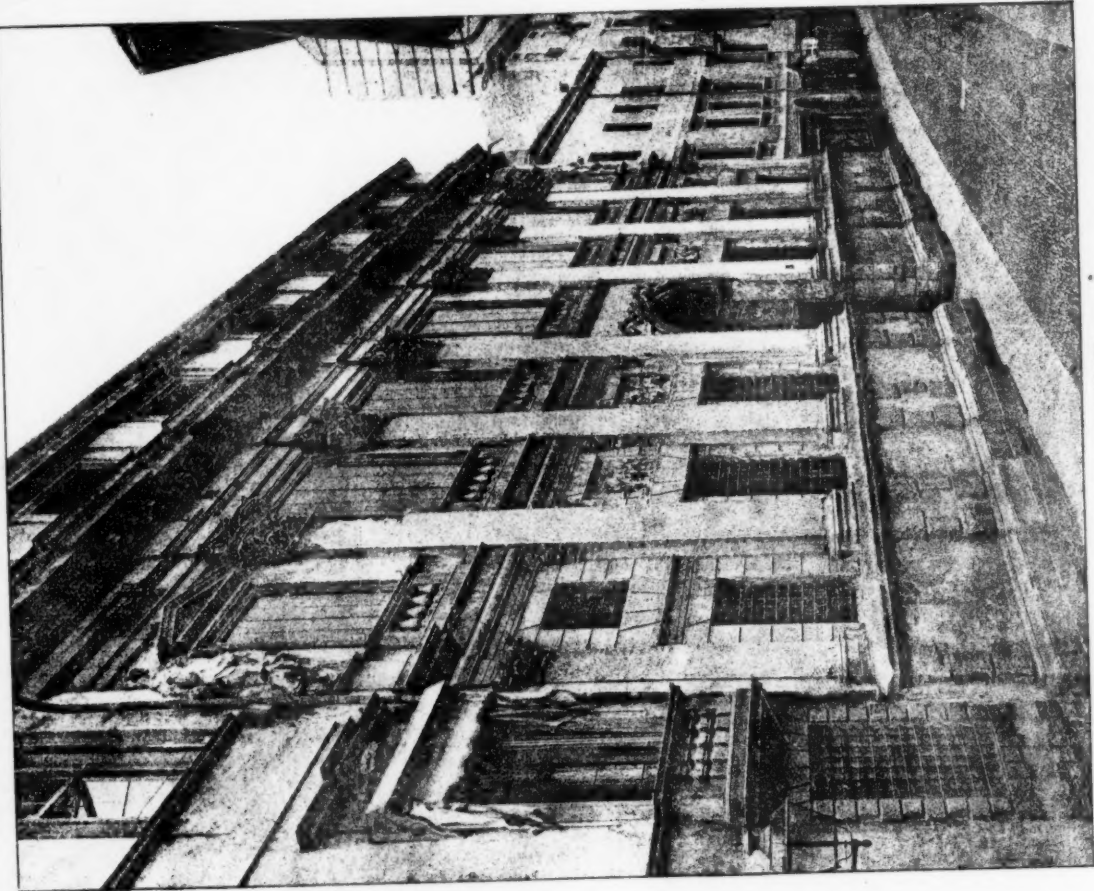
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PALAZZO VALMARANO.

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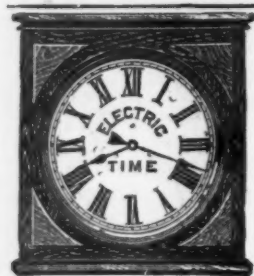


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CODE OF PRACTICE FOR SUB-ESTIMATING AND SUB-CONTRACTING

Adopted by the Master Builders' Association of the City of Boston, Aug. 2, 1894.

ARTICLE I.

Obligation of Principal Contractor to Sub-Contractor.

A principal contractor is under obligation to treat upon an equal basis all estimates which he "receives" prior to putting in his own bid. Estimates must be considered as "received" when they come into a principal contractor's possession, either by his direct solicitation or by being accepted by him. The opening of a bid, knowing it to be such, constitutes receipt of the same.

A principal contractor is under no obligation to use a bid which he has not solicited, accepted, or received, but if he does not wish to use the estimate of a sub-bidder he should decline it, if proffered personally, or should return it unopened if sent to him by mail or otherwise. The retention of a bid should be construed as a receipt of the same.

A principal contractor, when making up his estimate, is not entitled to receive bids from sub-contractors if he is at the same time making himself their competitor by figuring their portion of the contemplated work. It is legitimate for a principal contractor to figure all portions of work, depending upon no one for what are usually known as sub-estimates, but it is not legitimate for him to receive bids from others for sub-work if he is himself figuring those portions independently.

ARTICLE II.

Award of Sub-Contracts.

The principal contractor having been awarded a general contract should immediately award the sub-contracts to the lowest bidder in each branch.

ARTICLE III.

Penalty for not Awarding Contract to Lowest Sub-Bidder.

A principal contractor failing to award a sub-contract to the lowest sub-bidder to whom he is under obligation as previously provided should be liable to pay damages to the said lowest bidder, in amount not less than ten per cent of the amount of the estimate.

Payment of such damages will not relieve the principal contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

ARTICLE V.

Payments to Sub-Contractors.

Unless the contracts made with sub-contractors otherwise provide, payments during the progress of the work should be made by the principal contractor to the sub-contractors upon the same basis of payment, in relation to amount of work performed, as is prescribed in the contract made by the principal contractor with the owner.

Final payment to a sub-contractor should be considered as due at the expiration of thirty days after the completion of his work and its approval by the architect or owner, unless otherwise provided by the sub-contract or agreement.

ARTICLE VII.

Obligation of Sub-Contractor to Principal Contractor.

Should a sub-contractor refuse to contract at the amount of the estimate he has given to a principal contractor who has used the said estimate in good faith, he then should be liable to the said principal contractor for damages in amount not less than the difference between the amount of the estimate which was submitted by him and the amount at which the principal contractor may be obliged to contract the work.

Payment of such damages will not relieve the sub-contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

ARTICLE X.

Bids to Architects or Owners.

When bids for separate departments of work on a building are solicited by the architect or the owner, they should be submitted with the understanding that they are direct estimates, for which direct contracts are to be made by the owner with the lowest bidder, and no other disposition of such bids should be permitted without consent of the bidder submitting the same.

Sub-bids should be given only to the principal contractors who are estimating the work in question, and should not be left with architects or owners for the inspection and information of principal contractors. Sub-contractors must understand that bids thus left with architects or owners are in great danger of losing their confidential character, and that if they so leave them they cannot claim protection or redress under the first article of this Code.

SUGGESTIONS.

Members of this Association having sub-contracts to let, or material to buy, should, as far as may be consistent with business principles, deal only with members of the Association, or at all events give their fellow-members an opportunity to compete, and then give them the preference, other things being equal.

All bidders should take cognizance of the danger they may be subjected to through the practice, so prevalent in some architects' offices, of making change in plans or specifications, or in both, during the progress of estimating. Correction of this pernicious practice can only be obtained through refusal by contractors to estimate under such conditions.

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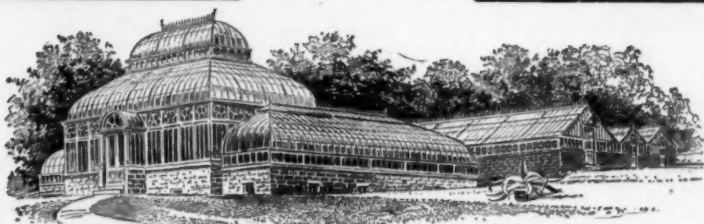
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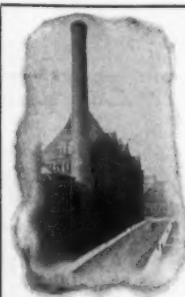
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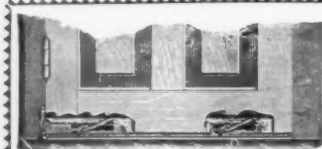
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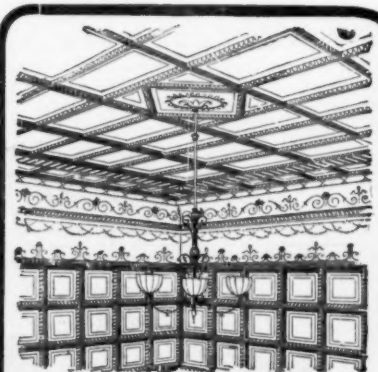
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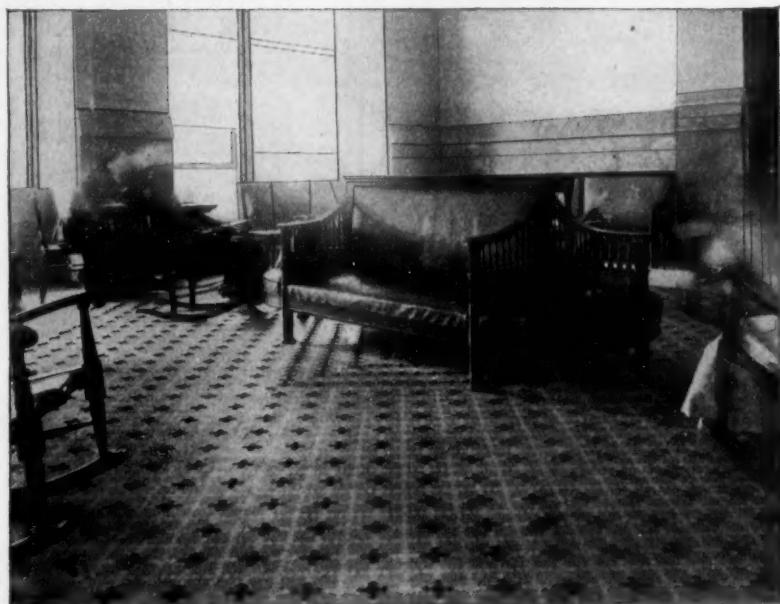
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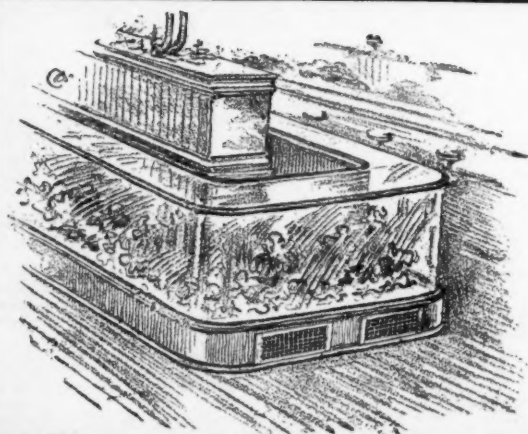
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bequests are paid, is to be devoted to the establishment of a hospital in this city. It is estimated that the amount available will be about \$150,000. The foundation of a hospital for consumptives is suggested.

Mayaville, Ky.—Leon Coquard, 169 First St., Detroit, Mich., has drawn plans for a \$55,000 church to be erected by the St. Patrick's Roman Catholic Church.

McKees Rocks, Pa.—Bids are now being received by Architect Seymour Davis, 307 Walnut St., Philadelphia, for the three-story brick and stone Y. M. C. A. building for this city.

Middletown, Conn.—The Scott physical laboratory at Wesleyan University will consist of a main building and an extension in the rear. The main building will be 51' x 102', containing basement and three

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

stories. The extension will be 30' x 50', with basement and two stories. The basement is to be of granite, the remainder of the building of Harvard brick and Indiana limestone. It will cost over \$100,000. The architect is Charles A. Rich, of New York City. The building is given by Charles Scott and Charles Scott, Jr., of Philadelphia, the former for many years a trustee of Wesleyan, the latter a graduate of Wesleyan in the class of 1888. It is given in memory of John Bell Scott, class of 1881, who died from illness contracted while serving as chaplain in the United States Navy during the Spanish American War.

Milwaukee, Wis.—It is said that the Milwaukee Bridge Co. will expend \$100,000 for new buildings for its plant and will also erect an \$18,000 brick and steel shop.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Mountain Lake, Minn.—The village has decided to erect a \$25,000 school-building.

New York, N. Y.—Architect Herbert G. Paull, of 106 Wellington Pl., Toronto, Can., has in preparation plans for a large institutional building to be erected in Central New York State.

Estimates have been invited from Philadelphia builders for the new store to be erected by John Wanamaker on the site of the old A. T. Stewart building. It will be of fireproof construction, fourteen stories high, with basement and sub-basement and will have fronts of stone and terra-cotta. Estimated cost, between \$3,000,000 and \$4,000,000.

Student indignation has been aroused at Columbia by the high prices of the boarding-houses near the university. The Columbia Spectator, the student newspaper, in an editorial outlines the present methods of the boarding-house keepers and makes a plea for South Field and dormitories.

Plans have been filed for alteration to the Educational Alliance building at the corner of E. Broadway and Jefferson St. A six-story brick annex is to be erected. The Educational Alliance, of which Isidor Straus is president, is the owner. G. W. Bremner is the architect. The cost is placed at \$50,000.

W. G. Pigueron, 7 E. 42d St., has finished plans for a nine-story office and loft building, 26' x 125', to be built at 32 Union Sq. and 104-106 E. 16th St.; cost, \$200,000. G. H. Pigueron, 7 E. 42d St., is the owner.

Plans for a \$140,000 ten-story brick and marble hotel for Mrs. Grace L. Cloos-Loug have been prepared by Architects Stein, Cohen & Roth, 92 Fifth Ave.

Niles, Mich.—The Niles Automobile and Gas Engine Co. has been organized with a capital stock of \$25,000 for the erection of a new factory building.

North Smithfield, R. I.—Plans are under consideration for the construction in this town of a cotton mill, with 45,000 spindles and 1,100 looms, at a cost of \$400,000, by the Blackstone Manufacturing Co., of Blackstone. Work will be commenced at once. About 450 hands are already employed,

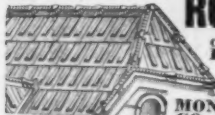
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(Advance Rumors Continued.)

and when the new plant is completed 500 more men will be given work.

Palo Alto, Cal.—C. A. Ingerson, of 40 New Montgomery St., was awarded the contract to build the gymnasium at Stanford University. The contract price was \$47,000.

Philadelphia, Pa.—D. A. McClelland is about to begin work on the five-story warehouse to be erected for the Equitable Warehousing Co. It will be located at 5th and Willow Sts. and is to be 40' x 184', of brick and stone with elevators, electric light, etc. Cost, \$60,000.

Permit has been granted and work started on the handsome stone and brick church which is to be erected at the corner of 8th and York Sts. for St. Edward's Roman Catholic Church, from plans by W. & G. Audsley, architects. It will be a one-story structure of stone measuring 105' x 195', to cost about \$150,000. Melody & Keating are the builders.

A. Whitehead has secured the contract for the new residence to be built on 16th St., near Walnut St., for Mrs. Howard Roberts. Plans by Architect T. M. Rogers provide for a brick and stone building, 30' x 60'; cost, \$20,000.

Work has begun on a large operation of dwelling houses in the 34th Ward to cost about \$180,000. There will be 89 houses, 14' 6" x 43' and 16' x 54', to be built on Salford St., between Market and Arch Sts., and on the north side of Market St., between 60th and Salford Sts. They will be two stories high, of brick and stone.

Pittsburgh, Pa.—Bids will be received by Architects Carpenter & Crocker, East End, Moreland Building, on the St. James Protestant Episcopal Church. It will cost \$60,000.

Providence, R. I.—There is a project afoot among labor unions to erect a large building for the use of labor unions and societies. The plan is to raise \$20,000 by January 1, 1905, by selling shares at \$1 each, and if the total amount is not secured by that date all of the money is to be refunded with interest. No location has as yet been secured, but it is understood that the building will be in some downtown section.

Spokane, Wash.—An appropriation of \$20,000 has been made by the Legislature for a brick armory building here, the city to furnish site.



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PROPOSALS.

MASON AND CARPENTRY WORK.

[At Boston, Mass.]
The School-house Commissioners of Boston invite proposals for doing mason, carpentry and other work in the Walnut St. School, Walnut St., Dorchester District, Boston, Mass., also proposals for installing a plumbing system in said building. Only proposals obtained at the office of the Commissioners, 120 Boylston St., signed by the bidder and left before May 27, 1903, at said office, with a certified check for \$500, payable to the city if the proposal is not carried out, will then and there be publicly opened and read. R. CLIPSTON STURGIS, JOHN H. COLBY, FRED. ERIC O. NORTH, commissioners. 1430

BRIDGE.

[At Gettysburg, Pa.]
Proposals for the construction of a steel bridge at Reynolds Ave. upon the battlefield of Gettysburg will be received until June 1 by John T. Nicholson, chairman water department. 1430

BUILDING.

[At Elizabeth City, Va.]
Sealed proposals will be received at the Office of Treasurer Southern Branch, National Home, Elizabeth City County, Va., until June 3, 1903, for a frame building (officers' quarters) in accordance with plans and specifications, copies of which, with blank proposals, and other information, may be had upon application to the treasurer. 1430

BRIDGE.

[At Fort Benton, Mont.]
Bids are wanted June 4 by the Board of County Commissioners for the construction of a 200-foot bridge over Mill River at Bowes Ford. 1430

COURT-HOUSE.

[At Greensburg, Pa.]
Bids will be received until Thursday, June 4, 1903, for the erection and completion of the new court-house for Westmoreland County, at Greensburg, Pa., in accordance with plans and specifications of Architect William Kaufman, Lewis Building, Pittsburgh, a copy of which is now on file in the prothonotary's office, Greensburg. Bids will be received for either stone or granite; selection to be made after receiving bids; stone to be of buff or blue Cleveland, O. sandstone; granite to be fine grain, light gray. JOHN H. BROWN, controller, Greensburg, Pa. 1430

ADDITION.

[At Creston, Ia.]
Bids will be received until June 7 at the office of R. C. Winter for the erection of a two-story addition to the Jefferson School. Plans can be seen at the office of Architect W. S. Joseph, Room 4, Liberty Block. 1431

PROPOSALS.

GYMNASIUM.

[At Fort Snelling, Minn.]
Office of Chief Q. M., St. Paul, Minn. Sealed proposals will be received at this office until June 3, 1903, for the construction of gymnasium and post exchange building at Fort Snelling, Minn. Plans and specifications may be seen and blank proposals with full instructions had upon application here. GEO. E. POND, C. Q. M. 1430

BRIDGE.

[At Castlewood, S. D.]
Proposals for the construction of a steel bridge will be received by L. H. Forde, county auditor, until July 10. 1431

CONCRETE WALK.

[At Fort Mott, N. J.]
Sealed proposals for constructing about 16,000 square feet concrete walks here will be received until June 6, 1903. Information furnished on application. QUARTERMASTER, Fort Mott, N. J. 1431

BUILDING.

[At Philadelphia, Pa.]
Frankford Arsenal, Philadelphia, Pa. Sealed proposals will be received until June 12, 1903, for constructing one 24-story brick and steel building, 54' 3" x 143' 10 1/2", for a shrapnel shop. Information upon application. FRANK HEATH, Major Ord. Dept., Commanding. 1431

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 14, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 16th day of June, 1903, and then opened for the construction (including plumbing, heating apparatus, electric conduits and wiring) of the extension of the U. S. Custom-house and Post-office at Alexandria, Virginia, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Custodian at Alexandria, Va., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1431

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 14, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 25th day of June, 1903, and then opened for the construction (not including heating apparatus, electric wiring and conduits) of the U. S. Post-office at Leadville, Colorado, in accordance with drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Leadville, Colorado, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1431

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PROPOSALS.

GYMNASIUM.

[At Fort Huachuca, A. T.]
Denver, Col. Sealed proposals will be received here until June 6, 1903, for constructing a gymnasium and post exchange building at Fort Huachuca, A. T. Information furnished on application to quartermaster, Fort Huachuca, A. T., or the undersigned. **LIEUT. COL. J. W. POPE, C. Q. M.** 1431

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 14, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 18th day of June, 1903, and then opened, for the construction (including plumbing, heating apparatus, electric wiring and conduits of the U. S. Post-office at Boone, Iowa, in accordance with drawings and specifications, copies of which may be had at this office, or the office of the Postmaster at Boone, Iowa, at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR, Supervising Architect.** 1431

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 16, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 23d day of June, 1903, and then opened, for the construction (including heating apparatus, electric wiring and conduits) of the U. S. Post-office at Stillwater, Minnesota, in accordance with the drawings and specification, copies of which may be had at this office, or the office of the Postmaster at Stillwater, Minnesota, at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR, Supervising Architect.** 1431

TRAINING WALLS.

[At Jacksonville, Fla.]
U. S. Engineer Office, St. Augustine, Fla. Sealed proposals for constructing training walls in St. Johns River, Fla., will be received at U. S. Engineer Office, Jacksonville, Fla., until June 9, 1903. Information furnished on application. **FRANCIS R. SHUNK, Capt., Engrs.** 1431

PILE DOCK.

[At Sandy Hook, N. J.]
U. S. Engineer Office, Army Building, New York. Sealed proposals for building a pile dock at Sandy Hook, N. J., will be received here until June 10, 1903. Information on application. **W. L. MARSHALL, Major, Engrs.** 1431

SEWERS.

[At Washington, D. C.]
Sealed proposals will be received until June 20 for constructing sewers in certain streets. Specifications and blank forms of proposals may be obtained at this office. **HENRY B. F. MACFARLAND, et al., commissioners, D. C.** 1431

SEWERS.

[At Washington, D. C.]
Proposals will be received until June 6 by the commissioners of the District of Columbia for constructing sections B and C of the B Street and New Jersey Avenue trunk sewer. **HENRY B. F. MACFARLAND, et al., commissioners.** 1431

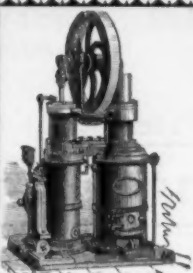
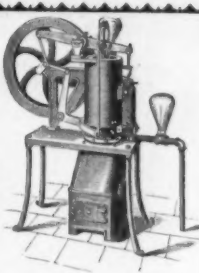
COURT-HOUSE.

[At Denison, Ia.]
George A. Berlinghof, architect and superintendent, care M. J. Collins, auditor, will receive bids until June 9, for the erection and completion of a court-house for Crawford County at Denison. Bids for the steam heating, plumbing, gas fitting, electric wiring, etc., will be received later. 1431

COURT-HOUSE.

[At Iola, Kan.]
The county commissioners will receive bids until June 9 at the office of the county clerk, J. W. Kelso, for constructing a court-house for Allen County. Plans by Architects J. C. Holland & Squires, Topeka, Kan. 1431

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PROPOSALS.

BUILDINGS.

[At Rapid City, S. D.]
Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals addressed to the commissioner of Indian Affairs, Washington, D. C., will be received at the Indian Office until June 10, 1903, for furnishing and delivering the necessary materials and labor required to construct and complete a frame employees' quarters; a frame addition to laundry and a brick employees' quarters, all with plumbing and acetylene gas piping; also an addition to a brick dormitory, with plumbing and gasoline gas piping, and a frame acetylene gas house, with plumbing and heat, all at the Indian School, Rapid City, S. D., in strict accordance with plans, specifications and instructions to bidders which may be examined at this office. For further information apply to Sam B. Davis, superintendent Indian School, Rapid City, S. D. **A. C. TONNER, acting commissioner.** 1431

LUMBER.

[At Cavite, P. I.]
Proposals will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until June 2, 1903, to furnish at the naval station, Cavite, P. I., a quantity of lumber. **A. S. KENNY, paymaster general, U. S. Navy.** 1430

GYMNASIUM.

[At Fort Logan, Col.]
Denver, Col. Sealed proposals will be received here until June 1, 1903, for constructing a gymnasium and post exchange building at Fort Logan, Col. Information furnished on application to quartermaster, Fort Logan, or the undersigned. **LIEUT. COL. J. W. POPE, chief quartermaster.** 1430

OIL HOUSE.

[At Tompkinsville, N. Y.]
Sealed proposals will be received at the office of the Light-house Engineer, Tompkinsville, N. Y., until May 28th, 1903, for furnishing the material and labor necessary for the completion and erection of an oil house at the General Light-house Depot, Tompkinsville, N. Y., in accordance with specifications, copies of which, with blank proposals and other information, may be had upon application to **MAJ. WILLIAM T. ROSSELL, U. S. A., Engineer Third Light-house District.** 1430

PROPOSALS.

BROKEN STONE.

[At Superior Entry, Wis.]
U. S. Engineer Office, Duluth, Minn. Sealed proposals for furnishing 43,000 cubic yards broken stone, or 43,000 cubic yards pebbles for concrete south pier at Superior Entry, Wis., will be received here until May 29, 1903, and then publicly opened. Information on application. **D. D. GAILLARD, Capt., Engrs.** 1430

GYMNASIUM.

[At Fort Myer, Va.]
Fort Myer, Va. Proposals, in triplicate, for construction of gymnasium will be received until May 29, 1903. Information on application. **CAPT. W. F. CLARK, Q. M.** 1430

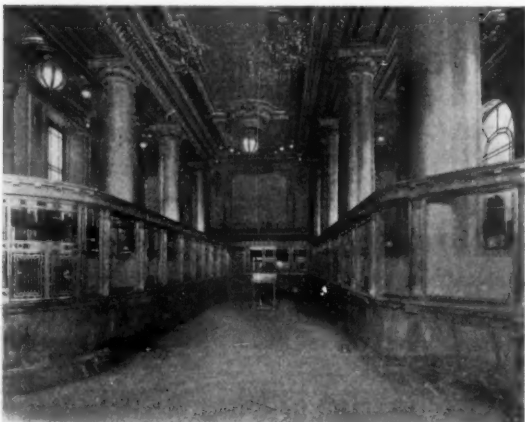
Treasury Department, Office of the Supervising Architect, Washington, D. C., May 6, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 11th day of June, 1903, and then opened, for the construction (including electric wiring and conduits, but excluding heating apparatus) of the extension to the U. S. Post-office, Court-house, etc., at Paducah, Kentucky, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Custodian at Paducah, Kentucky, at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR, Supervising Architect.** 1430

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 6th, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 9th day of June, 1903, and then opened, for furnishing the steam heating and ventilating apparatus, complete in place, for the U. S. Post-office and Court-house, etc., at Paducah, Kentucky, in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Paducah, Ky., at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR, Supervising Architect.** 1430

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 11, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 10th day of June, 1903, and then opened for the construction of the U. S. Temporary Post-office and Custom-house at Burlington, Vermont, in accordance with drawings and specification, copies of which may be had at this office or the office of the Custodian at Burlington, Vermont, at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR, Supervising Architect.** 1430

GYMNASIUM.

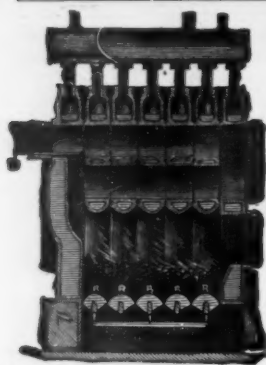
[At San Francisco, Cal.]
San Francisco, Cal. Sealed proposals will be received here until June 1, 1903, for construction of gymnasium and post exchange building at the Presidio of San Francisco, Cal. Information furnished on application to C. P. MILLER, deputy quartermaster general, chief quartermaster. 1430



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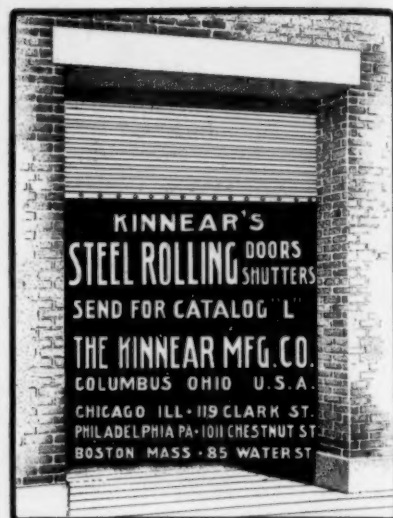
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SECTION 7. It is unprofessional to make alterations of a building designed by another architect, within ten years of its completion, without ascertaining that the owner refuses to employ the original designer, or, in event of the property having changed hands, without due notice to the said designer.

SECTION 8. It is unprofessional to attempt to supplant an architect after definite steps have been taken toward his employment.

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SECTION 14. It is unprofessional to enter into competition with or to consult with an architect who has been dishonorably expelled from the "Institute" or "Society."

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[See Alphabetical Index on Cover 2 for Pagination.]

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Richey, Browne & Donald, Long

Island City, N. Y.....

Tyler Co., The W. S., Cleveland, O...

Winslow Bros. Co., The, Chicago, Ill.

BUILDINGS TORN DOWN.

Elston & Co., A. A., Boston.....

CAPITALS (Carved).

O. T. Nelson Co., The, Columbus, Ohio

CARVING.

Waddell Mfg. Co., Grand Rapids, Mich.

CEMENT.

Alsen's Cement Works, N. Y....(eow)

Atlas Cement Co., New York.....

CLEAN-OUT.

Craig, David, Boston.....

CLOCKS.

Blodgett Clock Co., Boston.....

Howard Clock Co., The E., Boston...

CONSERVATORIES.

Lord & Burnham Co., Irvington-on-

Hudson, N. Y.....

CONTRACTING.

Flynt Building & Construction Co.,

Palmer, Mass.....

Rutan, William L., Boston.....

CONTRACTORS AND BUILDERS.

McKay & Woolner, Boston.....

Rutan, William L., Boston.....

CORDAGE.

Samson Cordage Works, Boston....(eow)

CRANES.

Northern Engineering Works, De-

troit, Mich.....

CUPOLAS (Foundry).

Northern Engineering Works, De-

troit, Mich.....

CUTLER PAT. MAILING SYSTEM.

Cutler Mfg. Co., Rochester, N. Y.....

DEAFENING QUILT.

Samuel Cabot, Boston, Mass.....

DOORS (Steel Rolling).

Kinnear Mfg. Co., The, Columbus, O.

DOORS, WINDOWS, ETC.

Carlisle, Pope & Co., E. A., Boston...

DRAUGHTSMAN.

E. Eldon Deane, New York.....

DUMB-WAITER.

Perry, W. J., Boston.....

ELECTRICAL CONTRACTORS.

Erickson Electric Equipment Co.,

Boston.....

ELECTRIC SIGNALS.

Elevator Supply & Repair Co., New

York.....

ELEVATORS, ETC.

Kimball Bros. Co., Connell Bluffs, Ia.

Morse, Williams & Co., Philadelphia.

Otis Elevator Co., New York.....

Whittier Machine Co., Boston.....

ELEVATORS (Foundry).

Northern Engineering Works, De-

troit, Mich.....

ELEVATOR SIGNALS.

Hersog Telesome Co., New York....

ENGINEERS.

Jager Co., Charles J., Boston.....

ENGINES (Hot-Air).

Rider-Erriesson Engine Co., New York.

FAN SYSTEM.

Sturtevant Co., B. F., Boston, Mass..

FAUCETS (Combination).

Union Brass Works Co., Boston.....

FILING DEVICES.

Art Metal Construction Co., James-

town, N. Y.....

FILTER.

Loomis-Manning Filter Co., Phila., Pa.

FIRE-ESCAPES.

Standard Fire escape & Mfg. Co., Bos-

ton.....

FIRE EXTINGUISHER.

Yantaw Mfg. Co., Philadelphia, Pa.

FIREPROOFING.

Associated Expanded Metal Co., New

York.....

National Fireproofing Co., Pittsburg,

Pa.....

FIREPROOF LATHING.

Hayes, Geo., New York.....

FIREPROOF SHUTTERS.

Kinnear Mfg. Co., The, Columbus, O.

FLAG POLES.

Boston Flag Pole Co., South Boston.

FLOOR POLISH.

Butcher Polish Co., Boston.....

FOUNDRY EQUIPMENT.

Northern Engineering Works, De-



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