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THE Fourteenth Annual Convention of the American Institute of architects met in Philadelphia on Wednesday of last week, adjourning on Thursday evening. Several previous conventions have been more numerous attended, and have had about them more that was festive and entertaining, but seldom has the work in hand been more seriously treated, or the questions raised been discussed with more patience and intelligence. These meetings constitute the only means by which the profession as a whole can speak and act. The interests of the profession are liable to be seriously affected for better or worse by what is there said and done. Those architects who cannot attend them in person, may consider themselves fortunate when their administration falls upon so trustworthy a body as was this year assembled. Mr. Walter was again elected president, the Board of Trustees was slightly changed, Messrs. R. M. Hunt, J. C. Cady, N. Le Brun, and H. M. Congdon composing the Board for the ensuing year, and the profession showed a grateful remembrance of Mr. Bloor's diligence and fidelity by again electing him, after a lapse of some years, to the responsible post of Secretary, while the Treasurer's duties are to be discharged by Mr. O. P. Hatfield. The chief work of the convention was the consideration of the resolutions offered a year ago at the convention in New York, looking to a modification of the relations between the Institute and the Chapters of which it is made up. These resolutions seemed to suggest an entire separation, letting the local societies manage their own affairs, and leaving to the Institute, as an independent national organization, to arrange for the annual conventions and, through its Board of Trustees acting as a permanent council, to attend to such matters of general import as might require action in the interval between one convention and another. This rather revolutionary change was strongly recommended by the Boston Chapter in a series of resolutions adopted in April last, as our readers may remember, and sent about to the other chapters for their consideration. The Convention discussed the question with great care, and unanimously adopted a solution of it at once radical and conservative, accepting the substance of the new scheme while adhering in form to the present arrangements. A new constitution was adopted, by which all that remains of an organic connection between local societies and the national body is this, that the president of each chapter shall be a fellow of the Institute, and shall be *ex officio*, a Vice President of the Institute and a member of the Board of Trustees. In every other respect the local society is free to do as it sees fit, and has neither duties nor privileges. The Institute, on the other hand, is equally independent, receiving as members those who may choose, or be chosen, to take part in a national organization, individually, whether they adhere to the local organization or not. Two grades of members are still recognized, Fellows and Associates, but both alike are admitted to vote on all questions. The only difference is that the Fellows pay higher fees and are alone eligible to office. Fellows are to be elected by vote of all the members of the Institute, while in regard to Associates the present rule, of election by the Board of Trustees, is to be maintained. In

both cases of course, provision is made for nominations by responsible persons. It is proposed that the number of Fellows shall be restricted to seventy, so that election to this body, which can then only take place upon the death or resignation of one of their number, shall be of the nature of a personal distinction awarded by the profession at large. It is to be hoped, and may be expected that the anticipations of the Convention will be realized, and that the Institute and the local societies, freed from the embarrassment of an organic connection, will enjoy an increased activity and usefulness each in its own field, an enlarged membership and a diminished scale of fees or assessments.

THE terrible calamity at the Minnesota State Insane Asylum teaches a lesson which architects will do well to study, since, justly or unjustly, it is becoming more and more the habit to lay the blame of such occurrences on them. The burned building appears to have had stone or brick walls, furred inside after the usual manner, and the fire, originating in the basement, through spontaneous combustion probably, is said to have "crawled up the wood-work until the whole inside was on fire." The building was of immense size, divided into several distinct portions, and very heavily built, so that, instead of being a mass of flames in a few minutes after the first kindling, like most of our stone structures, it took three hours for the fire to spread through the whole extent. This was, however, sufficiently rapid progress to cut off the escape of a large number of the unfortunate patients who perished in their cells, notwithstanding the efforts of the officers, who extended the hose which was coiled up ready at hand to the place where the fire first broke out, only to find that its sides had adhered together through disuse, and it was twenty minutes before water could be forced through it. Except for this fatal delay, the flames could have been subdued with little damage, but the moments passed, and no other help being near, the smoke soon compelled the attendants to abandon the poor women, whom they were trying to rescue, to their fate. We hardly see how any architect can read the sad account without asking himself whether he has always been as earnest as he might in impressing upon owners the dangers of the ordinary construction; as persistent in explaining the ways in which, by a little sacrifice of money or appearance, increased safety could be secured; or as diligent as a high ideal of duty would suggest in devising modes of lessening the danger from fire in his buildings, without detriment to other qualities. Thankless as is the task of contending in matters of construction against the scornful opposition of builders, the impatient indifference of owners, and the fixed habits of workmen, the struggle should be maintained, if only for the sake of the clear conscience which even unsuccessful effort will give; and architects may well take a lesson from the lawyers, who consider it their duty, and find it in the end profitable, to counsel their clients, not always in accordance with their passions or whims, but looking rather to their ultimate interest.

MR. EDWARD ATKINSON'S agitation in favor of the cheap but "slow-burning" construction, whose principles he and his energetic colleagues and subordinates have investigated with so much success, begins to bear fruit. In its most difficult application, to the complex needs of dwelling houses, no great advance seems to have been made, although the system has been successfully applied in several cases, and a demand has unquestionably arisen for increased safety; but for heavy storage warehouses and similar buildings, where the preservation of goods is thought of more importance than the smooth finish of the rooms, floors and roofs framed with heavy girders and covered with thick plank are now often seen as well as the wire lathing, the unfurred brick walls, and the solid cornices of masonry, on which the manufacturers' insurance companies so much insist. For mills also, although this principle of construction can hardly be said to have become the rule, there is at least a general appreciation of its advantages. More recently, some very successful essays have been made in adapting it, by a high degree of finish, to the needs of the best mercantile buildings, and although we are inclined to think that Mr. Atkinson's anticipations as to the comparative cheapness of such structures have not yet been realized, their owners will unquestionably find them profitable in the end, and both they and their architects deserve credit for having been willing to make

some sacrifice, in order that a way might be prepared which others would find it easier to follow. We are sure that architects generally will not be slow to second the wishes of any owners who may be convinced of the advantages of the new mode, and would suggest that the movement having been once begun, the duty now devolves upon the underwriters of doing their part to encourage it, by a reduction in rates of premiums on goods stored in such buildings, adequate to their increased security against fire. The opinion of expert fire-engineers, as well as the experience of mill-owners, goes to show that under the conditions as to facilities for extinguishing conflagrations, now universal in our large cities, buildings constructed in the manner which Mr. Atkinson proposes are nearly, or quite, as secure as the average of so-called fire-proof structures. If this is so, the cost of insurance on property contained in them should be no more than on that in fire-proof buildings. If the underwriters will recognize this fact, and make their rates accordingly, we have no fear but the reform in construction, which they call so loudly on the architects to bring about, will soon become general; but if they are not willing to make it for the advantage of policy holders to encourage and demand such construction, they will do well to refrain for the future from asserting that the architects are solely to blame for the present methods.

An example of the way in which architects and sculptors should work together for mutual benefit is said to be presented by the new Farragut statue, which is soon to be set in position on Madison Square, nearly opposite Delmonico's and the Brunswick Hotel. The statue itself is in bronze, and is the work of Mr. Augustus St. Gaudens, of New York, to whose honorable mention at the last *Salon* we took occasion to refer. The pedestal was designed by Mr. Stanford White, in connection with Mr. St. Gaudens, the two working together in the latter's studio in Paris to secure harmony between the two essential divisions of the monument. None know better than architects the great importance of surrounding lines and masses of light and shade in enhancing or detracting from the effect of sculpture, particularly of statuary, and elaborate as Mr. White's design is said to be, there need necessarily be no fear of overpowering the figure by its richness. Although it is customary among us to design the plinths, even of the most complex groups, with studied coldness, there is no good authority for such treatment. On the contrary, so far as we know, the principal Grecian groups were set in a frame of gaudily decorated mouldings, while the Roman statues were generally accompanied by rich bas-reliefs, and in the best mediæval sculpture the space between the fully modelled figure and the ground was occupied by an exquisite gradation of high and low reliefs, to soften the transition between it and the bare pavement.

NEW YORK real estate owners are perhaps rather remarkable for the frankness with which they manifest their private griefs and resentments to an unsympathizing world. One of the most conspicuous corner mansions on the Fifth Avenue attracts the eye by certain singular appendages, or antennæ, projecting from the rear wall, which, on examination, are found to be braces put there for the purpose of holding up an immense screen in front of the next neighbor's windows; and there are similar examples in other places. The last reported case of the kind has some novel features. It seems that Mr. Banks, the owner of a certain mansion on Fortieth Street, very near the Fifth Avenue, found that the adjoining proprietor was erecting a house with a bay window in front, which would cut off some of the side view from his own windows, and was so much troubled about it that, "notwithstanding his Quaker blood," as he says, he fell upon the offender in the street and pounded him. Not content with this, and finding that the new building was to have a rear extension, three stories high, lighted by two bay windows overlooking the yard behind his own house, he forthwith built a four-story extension on the side of his lot next to the new bays, darkening them completely, so that the first extension had to be taken down and rebuilt, in order to get a window in the end. Mr. Irwin, the owner of the half-finished house, contented himself with painting the wall of Mr. Banks's extension white, so as to gain a little reflected light from it; but Mr. Banks immediately had it repainted with lampblack. Then the neighbors joined the fray, and the owner of the lot in rear of Mr. Irwin's, over whose back yard the single available window of the extension now looked, put up an immense board fence, so as to block it up on that side also, and when Mr

Irwin, finding the erection illegal, had it pulled down, his new enemy sprang from the window with a pistol, and drove the workmen away. By and by the persecuted building was finished and advertised for sale, when Mr. Banks's brother, who owns the vacant lot just beyond, thought to injure its value by putting up a sign announcing that his own property was to be let for a carpenter's shop or stable. However, it was sold to a philosophical gentleman who does not mind fences and is not terrified by black paint, and says that to have a stable next door would give him just the opportunity he wishes for keeping his horses conveniently near. So, except Mr. Banks, who has to pay a heavy bill for a four-story extension, which is probably much worse than useless to him, no one seems to have suffered serious injury, and the inhabitants of the city are much amused at the little comedy.

MAJOR-GENERAL SCOTT, in a paper read before the Sanitary Congress, proposed to improve the condition of sewers by placing in their more elevated portions a quantity of lime, so arranged that at the periodical flushings which he recommended, a certain amount of the lime would be dissolved and washed down through the conduits. The effect of this would be, he thought, to lessen the slimy adhesiveness of the sewage, while the lime itself would absorb a part of the foul gases which ooze into the upper part of the drains. The first of these objects, the change in the consistency of the liquid would be attained, we think, if at all, through the formation of a soap by the combination of the greasy particles in the sewerage with the dissolved lime, and the lime soaps being insoluble would be precipitated in the form of a coating, first soft and flocculent, then gradually hardening, upon the internal surface of the pipes. If undissolved particles of carbonate of lime came to add themselves to the coating, a crust might be formed which would be very difficult to remove, and the probability is that such a fine powder of carbonate would soon be formed by the air-slaking of the heaps of lime, ready to be washed into the sewers at every flush. The withdrawal of gases by the lime in any case must be slight. Carbonic acid would, it is true, be absorbed, but this would be present in comparatively small quantity, while a considerable quantity of ammonia would be liberated through the action of the strong alkali from the various organic substances with which it came in contact. It is very possible that the treatment proposed may be successful, but the probabilities would seem to be against it.

WE are constantly, thanks probably to the new railroad projects, hearing stories with regard to Mexico and its inhabitants, which excite at least our interest, if perhaps also our incredulity in some cases. The *New York Evening Post* reproduces one of the latter kind, in the shape of a half-column article from a Santa Fé paper describing of what it calls an industry peculiar to New and Old Mexico—the manufacture of filigree jewelry. According to this article, "the making of filigree jewelry probably originated among the Italians, was by them taught the Spaniards, and at the time of the Conquest was brought over by the latter and introduced to the Mexicans." This is the first time we ever heard it suggested that Cortez brought filigree workers in his train, although we willingly concede that a Santa Fé editor ought to know more about the history of that region than ourselves; but when he goes on to say that "in Italy and Spain one sees no longer this (filigree) work," we must be allowed to question the accuracy of his information. Certainly, unless some convulsion has very recently annihilated a large number of good people in those countries, together with the products of their industry, an immense amount of filigree jewelry is still visible, to the most casual observer, in the shop windows, not only of Italy and Spain, but of Switzerland, France, and Germany, to say nothing of the numerous places in this country where Italian goods are sold. Nor is the assertion of the Santa Fé journalist, that "until American ingenuity and taste began to be apparent in this branch of art the manufacture was very rude," much more tenable. His impression is, that the Americans can claim the credit of having invented all the different designs in use except a few, "some say only three," rude patterns; an idea which, with all possible respect to those renowned art centres, "Santa Fé, Chiluhua, and the City of Mexico," we believe to be quite erroneous, having ourselves seen not far from a hundred times that number of varieties, made by hands which had received no suggestions from the citizens of any country but their own.

ANNUAL ADDRESS OF THOMAS U. WALTER, L.L.D.,
PRESIDENT AMERICAN INSTITUTE OF ARCHITECTS.

Fellows and Associates of the American Institute of Architects.

I congratulate you on the recurrence of our annual re-union, and extend to you in the name of the Philadelphia Chapter a cordial welcome to our hospitalities.

We have come together to-day, with the added experience of another year, to compare notes as to the past, and, as far as we may, to forecast the future in such a manner as will tend to promote the interests of the Institute, and accelerate the advancement of science, taste, and genius in architecture, wherever our influence may reach.

Progress is an irrevocable condition of our nature: science never plumes itself upon its laurels, but is ever pressing on to new developments. The arts of civilization are never at a stand-still, but are constantly using past successes as stepping-stones to nobler achievements in the realm of beauty and usefulness. Thus we find architecture never ceasing to manifest the tendency of the human mind, in all its works. No intelligent architect is ever satisfied with his past achievements. As our lamented Hatfield truly said, in one of his addresses delivered before the Institute, "the work of the best of us is far from being perfect. Ever reaching forward to the unattainable in art, every earnest architect would gladly reconstruct his creations, were he permitted to do so, in order to improve them."

During the past year architecture has everywhere been marked by decided progress. The increase of trade, of population, and of wealth, especially in our commercial centres, furnish occasions for larger, more convenient, and more ornate structures, and the advance of science in all the arts that enter into the construction and embellishment of buildings, tends to invest architecture with growing interest.

It therefore becomes architects to keep abreast of the times; to lead the public taste—not to follow it, and to study to promote the public good in all that relates to our art.

We need in our studies more of the inspiration that gives power to the productions of the painter and the sculptor, and it would be well if the skill and enthusiasm of these artists were more frequently utilized in adding interest to architectural designs. Aesthetically considered, architecture, painting, and sculpture, are, to some extent kindred, and it is not to be doubted, that a closer affiliation would tend to elevate the standard of art.

During the cinque-cento period, the three arts were frequently practised by one professor, but the success of such a combination is not apparent in the works of that peculiar age. The architect of the present day finds in his own profession a field of thought and study as extensive as it is absorbing. The ramifications of architecture, as it now exists, the development of the sciences that underlie its every thought, and the higher civilization that now rules among all cultivated peoples, demand the daily exercise of his taste and genius, and an intelligent handling of the scientific principles that most concern the stability of his works, their durability under the natural causes that tend to produce deterioration and defacement, and the adaptation of his designs to their intended uses.

A building skillfully adapted to its surroundings, designed in all its details and embellishments in accordance with true artistic feeling, and having an expression of harmony with the purposes for which it was constructed, cannot fail to give pleasure to those who contemplate it, as long as it exists.

The tendency of the architectural mind throughout the world is decidedly in the direction of originality. We therefore find but little attention paid to types of building drawn from the effete works of by-gone ages, or to the mannerism of the more recent past. In place of servile imitations of what used to be called, with classic pride, "approved models," we have evidences everywhere of independent thought. As a late writer very properly says, "we need neither old nor new mannerism, but the soul of art, working out in appropriate forms for our own times. . . . The soul of a structure should shape its body."

Progress in the development of the elements of taste and beauty, and the concretion of æsthetic principles with common-sense in architectural design, is now everywhere apparent. New and ever-changing conditions of society—new and ever-multiplying requirements for business purposes and for the every-day uses of life, call for perpetual progress in our art—that progress is a manifest element in the architecture of the past year. New forms and new combinations have sprung up, as by magic, in all our principal centres of business, while suburban buildings show a corresponding development of taste and genius. Wherever we turn, we find art characterized by progress.

The responsibilities of architects are greater than they have ever been before. The growing demands of the times in which we live call for intelligent studies in all that relates to our art, whether it be in the realm of æsthetics, in the sciences that relate to construction, in the nature and properties of the materials we use, in the atmosphere that surrounds us, or in the availability of the thousand and one useful and ingenious inventions that tend to promote the convenience and completeness of our structures.

If our retrospect of the past year certifies to us the gratifying assurance that we have used our taste and our genius successfully in adding to the interest of our art, and in leading the public to a higher

appreciation of the good, the true, and the beautiful, we have not toiled in vain, nor spent our strength for naught.

We should not lose sight of the fact that our vocation is one that needs the stimulus of fraternal intercourse. It is a great mistake to suppose that architecture can sustain its status as a profession without the existence of confraternal relations among its professors. For the promotion of such relations, the American Institute of Architects was organized, and we have the satisfaction to know that its influence in that direction has tended to establish and elevate the profession, and to command the respect and confidence of the public, wherever its existence and its purposes are known.

To compensate, in some degree, for the difficulties arising from the great extent of our country, and the distances that separate our principal centres of business, as well as to express more fully the national character of our confederation, it was deemed advisable by the Institute, in the year 1867, to establish local chapters. The constitution and by-laws were accordingly changed, so as to conform them to the ideas then entertained on the subject.

It was not, however, to be expected that an institution extending in its interests over so vast a stretch of territory, and embracing in its purposes so wide an influence, could be perfected in all its ramifications in the first decade of its existence. We are therefore, not at all surprised that the natural outcome of experience has made it apparent that the present system, particularly as it relates to the chapters, needs to be remodelled so as to make it acceptable to all respectable practicing architects throughout the country.

As it would not be proper for me, on an occasion like the present, to refer to individual opinions, or to express my own views *ex cathedra*, in reference to the details of any changes that may appear to be desirable, I have only to say, that the subject will be formally brought before the Convention by the Board of Trustees, also by some of the local organizations, and that it is greatly to be desired that such conclusions may be arrived at, as will be productive of increased efficiency, both in the Institute proper, and in the chapters. Whatever we may do, that will have a tendency to increase our membership, and to reinforce our acquirements, and our taste in the line of our art, will be work done in the right direction.

We cannot expect to maintain the high standing the Institute now enjoys, nor to enlarge its field of usefulness, and increase its power for good, without effort—self-sacrificing effort; it has cost money, and brains, and labor, to make it what it is, and it will require the application of similar forces to make it what it ought to be. The profession is what the Institute makes it; let us therefore make the Institute a living memorial of what may be done by concerted action in realizing results worthy of our art, and the ennobling influences to which it is addressed. We owe it to our country—to the age in which we live—to our families—to ourselves, to devote the rapidly fleeting hours of our lives to the accomplishment of the greatest possible good in our vocation; ever seeking to discharge our duties in all good conscience towards those whose interests are intrusted to our care, towards our co-workers in the realm of art, and towards Him in whom we live and move, and have our being.

PORTRAITURE AT THE MUSEUM OF FINE ARTS,
BOSTON.

THE prevalence of landscape here in exhibitions, rather the pre-occupation of that field to the exclusion of other subjects and motives, seems to be passing. We have in the present collection a very pleasing variety to suit many tastes. Art is so varied in its demand and appeal, and individualism is so infinite among mankind, that all subjects are interesting to one or another taste, if treated with power or feeling. How inexhaustible are the motives of the Japanese, and how naïve; what interest they find in common life, incident, and object. Their ivories alone are an epitome of human life and nature for motive, and so are their fans. It is a reproach to Europe, never to have seen, with all its culture, what this race has discovered and done. It does not rely upon subject; all is significant to their unspoiled vision. Already has ornamentation universally taken a naturalistic turn from their inspiration.

Side by side, pictures are doubly instructive, when they do not clash, as they may, by awkward placing, where tone conflicts with tone, or subject mars subject. A certain harmony will suggest itself to every correct taste, and instructed mind. But the instruction is had where the merits of two different schools illustrate each other, and serve as foils, each to the other, where both are equally good. Such contrast here is afforded by different portraiture, which we propose to treat in this article. One man feels a subject internally, one externally; one extracts the essence, another gives the form; one feels color, another feels line; one is excellent in composition, another in tone. The different spheres are undeniable if the examples are near, and can be pointed out to demonstration. How often in Europe one is served in that way if the illustrations are at hand: the intellectuality and intensity of the Florentines, their naturalistic vigor and penetrating force; the rich romance and sensuous poetry, and incomparable wealth of Venetian painting; the composition and grace of the Roman school; the height of Michael Angelo, the inscrutableness of Leonardo, the softness of Correggio, with all the northern schools, so lusty, racy, and free; and the masculine Spanish school. They set each other off where one can point to them to show by contrast the truth of one's analysis of what the artist was aiming at, what was his cast and purpose. A survey of a

¹ Delivered at the Convention held in Philadelphia, Nov. 17-18, 1880.

gallery needs to be catholic and comprehensive. Excellence should be allowed wherever found. We must put ourselves there where the artist was in his very nature when he painted, with his feelings and tastes. One requires largely to go out of one's self, and recognize whole fields of excellence with which one personally is not sympathetic. Artists are intense people and passionate, as musicians are. Art appeals to the sensibilities, educates them and intensifies them; tastes become like passions, and they prejudice by force of instinct and cast of constitution. Oil painters do not do justice to water-colors, nor water-color masters to oil; neighborhoods and localities, sections, cities, are provincial; Boston is of one mind, New York of another, Cincinnati another. Art is not old here, nor the country mature. We are imitative to an enormous extent of Europe. We have originated no characteristic art or literature which is lasting or great. Our function is material and humane, to build up a broad and massive well-being among multitudes of mankind, scattered thinly over a continent. We are too diffused to be mature, too active to be imaginative. We are tributary and provincial, in certain essential respects, to the old world. Europe is too near for originality to strike us yet. Nature subdues man, and makes him material, and will for a century or more. Was ever a city, of near two million inhabitants with its suburbs, less adequately distinguished intellectually, or by prestige, except in the world of business, than New York, our greatest centre? The country is a Liverpool and Manchester spread over a continent. Let us not magnify our meagre performances. Art lifts its head in this vortex of trade as literature does; it is a mere adjunct and ornament, no master. It is just beginning to be, like the whole country, crude, youthful, imitative; but fresh, promising, ardent and determined.

The two portraits showing the most mastery are No. 115 by Mr. Beckwith, and No. 65, by Mr. Volk. This is not to say they are the best. Mastery may be dry, technique unfeeling. Art is ideality or sensibility. Where both are absent, we have the husk not the kernel. French art is dry, and Munich no better; the prevalent work in these schools, at least at the present day, partakes more of technique than any other inspiration. It is a trick of hand; facile, shallow, amazing, confident; not to say bold, material, objective, external. It seems to have no soul, to be a *genre*, with dexterity as aim and goal, and no inner feeling or sentiment to guide it, or to express or strive after. Like Tiepolo and other historic *genres*, it fascinates by this genius of work purely for its own sake. The subject makes no impression. Brilliance is its end.

Prevailing fashions have often guided men awry, so fascinating is such exhibition of skill. It is the genius of facility as Swinbourne's is the genius of stretched sonorous verse, swing in versification and faculty, and no other quality. It is irresistibly attractive. We have to brace ourselves to resist it, and put the mind away in a closet where it has learned other ideals, and fed upon purer models. It is the genius of art without earnestness; it is technical inspiration. It is a brilliancy which flashes and stuns. We bow down to its intelligence, but do not respect its character. Character is the basis of all great work. Intelligence is the tool. Imagination lies at the root of all art. It may be sympathetic simply, but it should be inexhaustibly devout in this feeling for nature; this attitude, this suspense, this devotion, this abasement before the mystery and significance of things.

Confidence is jaunty and mocks the truer feelings. Art is of infinite subtlety. It has often gone astray for a full generation. Ages have dreamt their men were great, and the canons of true taste have destroyed their reputations in another succeeding epoch. The Pre-Raphaelites in England with the truest motives, thought they had a school which was vital and lasting, yet the picture in New York of one of its most thorough exponents is utterly without genius.

This impressionist realism is the last word of French art. It seeks to garner all that has gone before and do the best thing. It is the final teaching of the schools. Smooth, secure, subtle in handling, free, unincumbered with feeling undisturbed by doubt, and uninfluenced by imagination, it goes straight to its object. It achieves a great success but ever on that lower plane where no sentiment prevails, romance, or poetry of feeling, or stimulus of color—itself a world of imagination. It is stony, thin, dry. There is no transparency, no real livingness. It is not luminous. It is a masque and has the spirit of masquerading. Whether it is an accident or the result of the school, there is a fatal *demimonde* air to the figures, so external are they and objective. It has a brutal skill, with all its deftness, as Fortuny had. He ruined art in its conscience and aim. It should be sensitive, sweet, retiring, human. We will go to that charming picture beside this piece of mastery for feeling and sentiment, the two children in No. 107, by Mrs. Whitman.

To follow out further this criticism it is not flesh painting, it is too dry and smooth for that. It is not sensuous. It is *distingué*. For this certain minds will forgive all. It is a French quality—cheap substitute for imagination. Taste is inspiration in a subordinate degree. Too often it is the French genius. It is not ethereal or relieved, though there is the show of it. The light ground projects the figure unduly, without letting us look beyond or behind. It is a violent apposition; is it not an artifice or a trick? We want to go round a figure, we want it to retire and be in space, not shut down upon with such close surroundings. With that we have impression, the all in all in portraiture, which is spiritual, yielding, far away and imaginative. The old masters did this. The envelope of air and nothingness translates the figure into grandeur, gives presence, and concern

trates the whole vision with ineffable penetration and effect. Life seems to be in some other sphere, from which it looks back upon us. Obtruding, the work braves nature, flaunts materialism in her face, rivals her. She will not be so handled. Hence no imaginative result. She must ever be importuned, represented, wooed, not assailed,—gently won. We do not need to paint up to her. The nearer we approach to illusion the farther we are from reality, for still she is infinitely far off. The essence of it is our impression. Luckily, art is not realism. It is immaterial. We must not be too familiar with the goddess. All worship is respectful and at a distance.

This school is a discipline, a phase, and a vigorous one. If it lacks dignity and higher motive, it has a bracing and masculine method. Apparently it leaves nothing to be desired, and yet it has to be reversed from the centre, in order to derive inspiration from within and not from without, to be moved by feeling and not by faculty, to become a conscientious art.

Mr. Vinton (97) accentuates the *physique*, but does not enter enough into the expression. This is not living or penetrating; nor is the vitality achieved or movement throughout. The *pose* and keeping are admirably designed and quiet. If the work were equal in subtlety, sympathy, and in rendering to its conception, this would be a noble style, and in the tradition of the great masters. A realistic training has to be conquered, to give an imaginative result, if we would have really sympathetic, refined, and impressive portraiture. On this wall are two animated works of very piquant expression, though the power of work is not equal to the feeling—Nos. 99 and 91. It is much to have grace and sentiment, if the work halts, for feeling is still the soul of art, and technique simply its body. Mr. Volk's work, No. 102, is quite equal to his larger performance. He has a wonderful sentiment and capacity for life, if the feeling or imagination were equal. Expression is touched on the edge, at its very quick and centre, and the picturesqueness of the style is undoubted, but the art has no retirement. It is crisp, but harsh and crude in tone. One sees it in the raw. It is as if the cuticle were off, and we saw all objects with diseased and microscopic vision. There is such a thing as harmony, which is a law of all art. The portrait, No. 88, by Churchill, has merit of ease, and character, and expression, and is very well thought and treated as to light and shade, and sentiment and action. It is crude.

Mr. Porter's No. 139 lacks articulation and character, rich and effective as the mass of warm color makes it, and the sentiment for lustrous magnificence; yet in this the workmanship should have more character.

To see what a fine sense of portraits may be, the few Stuarts still left exhibit it in its fineness and refinement. Modern work has not advanced beyond this. It strikes other keys. Painting is more minute, but more literal. Mr. Vinton's No. 145 shows the gulf. It has power, but fails in sentiment. The power is rude, insolent, materialistic. The Bonnats were all in this kind, in '68, at Paris. Our eyes would be distressed if we saw things in this way, without mitigation—high lights focused upon reflecting surfaces. It is not true to the fact of daily vision. Nature veils fact and gives us feeling, and does not pitch into us in this way. The Thiers portrait, seen at Paris, and after at Munich last year, was murderously sharp and harsh and hard, without one relieving tone; the shadows black; the lights steely and cold. This does not do justice to nature; she is never so aggressive.

Mr. Weir's No. 152 is a very noticeable work, of subtle tone and subdued, imaginative painting. There is a combined power and finish here, though the work strikes one as lacking animation—a certain deadness.

In No. 107 we have great sweetness in the subject, and in the work a corresponding merit; bright, joyous color—a charming work. The art is slight but rich, and justifies itself by its quality, its sentiment. It is large in manner, generous in feeling; how far removed from the dextrous French and German work we have been noticing.

There is a freedom and incidental character in the *pose* very notable in No. 116, by Miss Bartlett. It has a charm beyond its merit as work, a very animated presence and action, most sensitive in this. A portrait may well show accident and moving. It should not be rigid and *posing*, but capable of getting away, vanishing; the whole substance of it is an impression, an emotion, a lighting up of character, a fixing of soul, a vanishing of body. The life is caught radiating from feature and expression, and presence like an effluence, borne on the air, and kindling with spirit and soul. Such is real portraiture, and the only worthy. It is plucking the soul out of things, and realistic treatment and actualizing and projecting the subject until you knock against it like a beam or a stone is the stockiest and most irrational way of rendering things immaterial, by wooden methods, and by plaster colored casts. All we want is the nature of the person, his habit, his manner, his character, his expression and presence and mind and image, not his simulacrum.

There is a charming feeling, a freshness and a delicacy in the work, No. 48. It reminds us of Millais. The head is inadequately done, but the sentiment is pure and frank. Wherever so much of that is present as is here distinctly given, we can afford to neglect an inadequacy of power in the work. A beautiful piece of work is No. 29, by Mr. Von Hæsslin; it is pure, fine, clear, finished. If Munich would give us such work as this often we should think the revival of the old masters not in vain,—Hals, Brauer, Teniers, Velasquez, Rubens, Rembrandt, all let it be noted out of Italy, and only one in the south. Eclecticism and revivals do not affect us much. Munich

seems an amalgam. These old men were all great *faisseurs*, technicians, and some of largest genius. In Munich last year we were struck by the superior earnestness and character in portraits. Here the school was more promising than the French, and the German nature told. There was the inspiration of character, expression and presence, and not alone of technique, and barren taste and coldness, such as characterized the whole vast number of portraits at Paris in 1868.

The writer cannot forbear a mention in this article of the remarkable bust of Mr. Cabot, by French. This has a Holbein-like veracity. Here is a searching rendering of character, a modelling and type worthy of all praise, showing, as good portraits do, how little we need ideality when nature can speak to us like this. History and life are written over such work as winds engrave the sea, sensitive and strong, complex, and built up of much of experience and thought. It is character knit into every line—a metaphysician's head.

THE METRIC SYSTEM.—IS IT WISE TO INTRODUCE IT INTO OUR MACHINE-SHOPS? I.—II.

I HAD hoped for gain in the drawing-room from the use of metric scales; I expected to find more than in the machine-shop; I have been disappointed in both.

In the machine-shop we come to test the value of shop sizes and merchant sizes, or rather the series possible in both, with one or the other system. For what is in use abroad, we look to Germany rather than to France for information useful to us, inasmuch as in Germany the metric system was taken up at a late day, and was introduced in its entirety without shock. To united Germany anything was better than their frightful confusion of fifteen inches in use, all differing from the inch still used with their screw threads, and differing from the inch of England. The metric system is incomparably better than their former entire want of any uniformity. With us the matter is very different, as will be seen more clearly as we advance. We divide our unit, in practice, into just what parts are best suited to express our practical wants, and the system in our machine-shops is uniform over a continent.

The first item of manufactured matter entering the machine-shop door is bar iron. The merchant sizes of round, square, etc., in America, advance by $\frac{1}{16}$, by $\frac{1}{8}$, by $\frac{1}{4}$, etc. In Germany, similar bars advance in size by 1 mm. up to 40, by 2 mm. from 40 up to 80, and by 5 mm. above 80. This system is memorizable by 40 and 80—by 1, 2 and 5. It is the best that can be done with a system tied up to an unhalvable scale. It does not agree with the English or American merchant sizes except in a few cases. The system of bolts, diameters and threads per inch, common or general over the continent of Europe is that known as the Whitworth system. They still adhere to this system as they do to the English system of gas and steam pipes and their fittings. The Whitworth system pitches its threads to even numbers or half numbers per inch in length. These pitches are easily obtained from the lead screws of all lathes, which are 2, 4 or 6 threads per inch, as a rule. Having given up the inch, the Germans formulate their threads per diameter (see tables at the end of this paper). For the names of the bolts, they must either retain their English names, and call a 25.4 mm. bolt one inch, or they must call it what it is, 25.4 mm., but some call it 25 mm., and make it .4 mm. larger. This inch bolt has 8 threads per inch, and, as the diameter, too, is 1 inch, it can be said to have 8 threads per diameter. A $1\frac{1}{2}$ -inch bolt measures 28.6 mm.; it may be called 29 mm. size; it must be cut out of 29 mm. iron, the nearest merchant size, with a loss of $\frac{1}{10}$ of a millimetre. This loss doesn't seem much, but the dies which have to cut it off tell the story very soon. The Whitworth scale gives the same pitch to $1\frac{1}{2}$ and $1\frac{1}{4}$ screws, viz., 7 per inch. The exclusive metric-shops call the one $7\frac{1}{2}$ threads per diameter, and the other 8 $\frac{1}{2}$, and yet they are practically the same, and must be cut with the same combination of change wheels on the lathe. Here is a precious example of what comes from trying to harmonize two systems under one nomenclature. The screw system in general use is so good, it has been so long in use, its disturbance would shock so many interests, that it is unwise to give it up, as unwise as it would be to adopt the American gas-pipe system in place of the English, or for us, for sake of uniformity with England and Germany, should we attempt to force the adoption of their system into our houses.

Imagine the hue and cry if some "benevolent despot," for the good of mankind in general, and Europeans in particular, should direct us to change our "fittings" to English standards, none of which would fit the pipes we have in our houses. Why, we are even vexed enough if we are sold a "sleeve" which will not fit a pipe put in place thirty years ago.

America has, for the last century, been striving in its own way, towards equalization of its standard sizes. The immense railroad industries demand this. Standard wheels on standard axles—standard fit sizes for both—are all founded on an inch scale of sizes.

Standard shafting for mill gearing gives a good example. It has been demonstrated that bars carefully rolled to size in rounds can be reduced to turned shafting with the loss of $1\frac{1}{2}$ mm., or $\frac{1}{16}$ inch to the diameter. Hence, bars 2, $2\frac{1}{2}$, $2\frac{3}{4}$, 3 inches, etc., are made into shafts $\frac{1}{16}$ less in diameter, sold by their full size names, i. e., by the name of the iron from which they have been made, and design-

nated by the affix, "shafting size." A two-inch shafting-size bar measures $1\frac{1}{16}$ inches, and a pulley ordered to-day with an eye to fit a $2\frac{1}{2}$ or a four-inch shaft made thirty years ago will be found to be to size. Now this American shafting sells freely in Europe, and no one complains of its size. He can command the markets of the world who can make the best machinery at the least cost, and that machinery will be taken and used and no questions asked about its inches or its millimetres.

A scale of shafting sizes so uniform and so easily expressed by $\frac{1}{16}$ up to $3\frac{1}{2}$ and by $\frac{1}{8}$ inches to sizes above 3, is met in metric countries by the ease of an advance by 5 mm. only. To obtain the economy of American shops their shafting sizes should be $1\frac{1}{16}$ mm. less than their name, i. e., a 100 mm. shaft should be made 98 $\frac{1}{2}$ mm. diameter, but the Germans have seen fit to retain even sizes, and thus are obliged to use 57 mm. iron to make a 55 mm. shaft, and 93 mm. iron to make a 90 mm. shaft, while on still larger shafts they must be content to lose 5 mm. at each turning. Such is the usage now, so far as we can learn.

The shop sizes in America harmonize with the merchant sizes and with convenience. We cannot change them. It would be unwise, I think, to do so in face of the obtainable metric sizes if we could. One other example of good and bad systems, and I have done with this part of our subject.

An essential of all machine-shops is a drill system; a series advancing by $\frac{1}{16}$ up to 1 inch, and by $\frac{1}{8}$ inch up to 2 inches, is equivalent to an advance by $1\frac{1}{16}$ mm. in a metric series. Such an advance as $1\frac{1}{16}$ mm. is impracticable, because it must be memorized entire; it affords no holding place for the memory. Twist drills were first made in America; they were so good, so useful, that American drills came to be the rage in Europe. After a time good makers there began their manufacture. I will mention one house, founded in 1834, that of Heilmann, Ducommun & Steinlen, at Mulhouse (Alsace), one of the best known houses in all Europe. They make twist drills from 10 mm. up to 50 mm., advancing by 1 mm., but their price list tells us that the sizes marked in bold face type are the sizes in use in their own shop. These sizes are: 10, 12, 13, 15, 18, 20, 23, 25, 28, 30, 32, 35, 37, 40, 42, 45, 47, 50. Here a series of sizes approximating the English ones is adopted, but it is a series which must be memorized entire, as its advance is not by two or by three either, in regular sequence. We cannot question the wisdom of the men who have selected these shop sizes to meet their known wants; they rank too high as workmen, they know too much to challenge criticism. Doubtless, this scale of sizes is about the best they can do with the metric system; we would not tie ourselves to it. I could continue the list of practical difficulties until I had filled a volume. They run through the entire list of all that goes to make up the requirements of our profession, and show how unwise we would be to change, if we could do so for the sake of harmony with Europe. We have not adopted the Whitworth system of screws in America, and yet, by so doing, we would place ourselves in harmony with all Europe. We recognize objections to the system, and when those objections were clearly pointed out by Mr. William Sellers, and he proposed a system free from the objections, his system was accepted by the committee of the Franklin Institute, and then by many departments of our government. Had the metric system shown itself to be the perfect system it is claimed to be, it too, would have been taken up more generally at a time when it was easier to have done so than now.

The American mind is quick to note what is to the advantage of American mechanics. We take up quickly what is good to hold to, and we will not accept what we have demonstrated to be less useful. This was made manifest to Prof. Reuleaux, director of the Industrial Academy, Berlin, and is expressed by him in his report on motors and machines at Paris Exposition, 1867. In commenting on the many novelties from America, he says, "Upon the whole, it may be said that in machine industry England has partly lost her formerly undisputed leadership, or that she is about to lose it. The healthy young trans-atlantic industry, which continually withdraws from us energetic and intelligent heads and robust hands, makes, with the aid of her peculiar genius, the most sweeping progress, so that we shall soon have to turn our front from England westward." Then, in commenting on the rapidity with which American ideas were finding a home in Germany, speaks of the genius for inventions of this kind as peculiar to us—"They are distinguished from us by more direct and rapid conception. The American aims straightway for the needed construction, using means that appear to him the simplest and most effective, whether new or old." . . . "The American really constructs in accordance with the severest theoretical abstractions, observing on the one side a distinctly marked out aim, weighing on the other the available means or creating new ones, and then proceeding regardless of precedents, as straight as possible for the object." . . . "This spirit is strikingly prominent in the (Wm. Sellers's) system of screw-threads which he has boldly placed alongside of the old venerated Whitworth system, in spite of the terror of its numerous adherents, after he had discovered actual deficiencies. A proper valuation of this proceeding contains the most instructive hints for our higher technical institutions."

There is an irreconcilable discord between the inch and the divisions of the metre. The inch has become fixed to a greater extent in dollars and cents, in fitness and convenience, in this country than in Germany, and yet there, in some cases I have shown, it cannot be given up. To keep our scale of sizes and use French dimension sizes would "furnish a precious example of the simplicity of the

¹ By Coleman Sellers, M. E. Read before the American Society of Mechanical Engineers, Nov. 4, 1880.

decimal system." I was a signer of the majority report of the Franklin Institute which opposed the compulsory adoption of the metric system. That report was prepared and written by the chairman, Mr. Wm. P. Tatham, since made President of the body which adopted it, as their view of the matter. Mr. Tatham is a man of culture and a hard student. His business as maker of lead pipes would have been less affected than that of almost any other manufacturer by the introduction of the metric system. He said, and I subscribed to the statement, that he believed that the ultimate benefits of the change proposed would be of less value than the damages during the transition. This was on the suppositious view that ultimately some would be benefitted. As an engineer, I can see no possible good to come to American machinists from the change. Its introduction exclusively would not diminish his labor in any way; it would not cheapen his product, it would increase its cost. It is, in fact, however, so impossible in view of existing matters and existing harmony in interchangeable matter, that should the metric standard be made the only legal standard in America to be used in buying and selling, the engineering establishments now in existence could not heed the law, but must perforce use their existing tools and gauges of precision, and continue to make material in conformity with existing matter.

The metric system was admitted here to an equal fostering in point of law in 1866. It had not been legalized in any way when we, for good reasons, introduced it into our own workshop in Philadelphia, and yet, at that time, we asked no one's permission to do what we pleased in the metrological management of our own business. We had a chance to try the system in making something which did not clash with existing merchant sizes; once having perfected an organization in this department, we became fixed in its continuance. Precisely the same reasons why we cannot change our general system into the metric hold against our giving up the metric system in the departments where it is in use.

If the change to the metric system will aid commerce, let the merchants do as we have done—try it. Commerce depends in a large measure, on the possible out-put of our workshops. The engineer controlling the workshop and who, to be successful, must be a merchant too, knows too well how he stands to give up a practically useful system more convenient to him after having tried both, for the sake of any fancied conformity with other countries. He can give up no vantage ground. His success in his life-battle in these days of active competition depends upon wise economies to enable him to prosper. He has no more reason to cripple himself with an inconvenient system of metrology than he has to give up a tariff of protection on his production in order to make it easier for the world to compete with him.

I am tempted to touch on the educational view of the subject, but will content myself with very few words. When engineers are told that the change to the metric system would save two years, or one year, in the school life of every child, they ask how many years are now devoted to mathematics only, in the average four years' schooling of the mass of our boys, and ask, what is to be lopped off to make this saving? Many a good workman who has risen to a high rank among educated mechanical engineers had too few years at school to admit of a month's saving in any one branch of his studies.

It is the thing just now to favor the change. A young engineer enlisting himself in the ranks of the metrical reformers (?) buys a cheap scientific notoriety. He is brought into sympathy with the self-constituted advanced thinkers. Those who oppose the change, after having become familiar with both, are said to "sever themselves from the congenial sympathy of the enlightened public opinion of to-day." The mechanical engineer can accept nothing as true until he has demonstrated the truth by experiment; at least, in anything capable of being put to the test of experiment. It is in the power of any intelligent man to test the metric system as others have done. He will, I think, find that the *savants* who originated the scheme before mechanical engineering, as it now exists, was known as a profession, made the mistake of beginning at the wrong end; the big end of the scale, the size of the world, and by the time they had cut it up or down to human wants it came out less fitted to human requirements than if they had recognized in the beginning the needs of the beings who were to use it.

Our metrological reformers urge us to adopt a new system in place of our present one, a system that harmonizes in no way with anything we now use. This new system is practically based on a certain measure over 39 inches long. This is cut up into 1000 parts, and 100 of these parts cubed gives their primary vessel of measurement. The contents of this vessel in distilled water under certain conditions is their pound weight. Had the English yard of 36 inches been so treated it would have been as good a system, but no better. It would have been as inapplicable comfortably to our profession as is the metric. The wonderful extension of the metric system to time and infinite space was given up as impracticable long ago, and we are now asked to bear the shock of a mighty change to use this *inconvenient* system, this unhandy system of ten, for the sake of uniformity with some other people of the world.

In conclusion, when we take into consideration the enormous interests involved in manufacturing in America; if it is, as we think, unwise to tamper with the existing metrology of our workshops, the question may well be raised as to the wisdom of enforcing the metric system in trade generally. The practical mind of Americans has already dispensed with much useless stuff, coming to us with our old

metrology; is it not better to continue to amend what we have, to encourage the uniformity so desirable, rather than to attempt to make all things new; but in no respect practically better, at so frightful a cost?

THE ILLUSTRATIONS.

HOUSE FOR THOMAS HOWE, ESQ., LITTLE NAHANT, MASS. MESSRS. WAIT & CUTTER, ARCHITECTS, BOSTON, MASS.

This house is now building, and will be occupied in 1881.

HOUSES ON COMMONWEALTH AVENUE, BOSTON, MASS. MESSRS. KIRBY & LEWIS, ARCHITECTS, BOSTON, MASS.

HOUSE NEAR FIFTH AVENUE, HARLEM, N. Y. MESSRS. KIMBALL & WISEDELL, ARCHITECTS, NEW YORK, N. Y.

DESIGN FOR A HOUSE IN OHIO. MR. MAX SCHROFF, ARCHITECT, NEW YORK, N. Y.

POPULAR ARCHITECTURE.¹

"If I'd seen that when I was a boy learning my trade, I should have been crazy until I got it," said an old carpenter as he looked over this latest attempt to provide the house-building carpenter with some new ideas for his work. It mattered very little to him that in spite of the statements of the crowded title-page there was little about the designs that savored of Queen Anne, or of Eastlake, and still less that could be called Elizabethan. The chief design might be called American—vernacular American—and most persons would understand the type of the little house which has been selected to do service as a model to be copied here and there throughout the country wherever a subscribing builder may settle with his small working library. It is a satisfaction to find that the houses that, like the dragon's teeth sown by Cadmus, are likely to spring up as a consequence of this publication, are probably to be more attractive and quieter in design than those which have followed the publication of somewhat similar works by the same publishers.

It is questionable whether publications of this sort are a benefit, in that they may, if they furnish the suggestions for buildings of a grade higher than would be evolved by an ordinary builder without their assistance, be educators of the public taste, or whether they may not be an evil, in that they tend to stunt individual effort, and perhaps prevent the growth of the typical architecture of the country, by furnishing to the hand ready-made designs which are copied part for part, however ill they may satisfy the true conditions of the problem which the builder is called on to solve. In every other country the lowly houses of the humbler classes are typical of the country in which they are found, and almost always architecturally interesting. But in America there does not seem to be any corresponding class, partly, no doubt, because in society there is so little class distinction, each man feeling himself to be as good as the next, and that he has a right to live in the same style of house—so far as his means will permit; partly because everything here is machine-made, as it were, and lacks the stamp of individuality which is always the impress of hand-work; and partly because the publications from which most of the buildings have been copied have been no better.

It is the evident duty of publishers, as of all other educators, to keep a little in advance of their public, and if the class to which they cater is one which by force of circumstance has been debarred from many of the quickening influences of a general—or a polite—education, and to be, therefore, a little less likely to understand the possibilities and necessities of progressive development, it behooves them to advance their standard from time to time with regularity, and not to allow too long a time to elapse between the successive steps. It is satisfactory to find that the present publication promises to rise somewhat above the dead level of its numerous predecessors.

THE PRACTICE OF AN ARCHITECT.²

THE first duty of an architect in connection with a new work is to inform himself exactly as to what is wanted. The variety of the objects for which buildings are required makes very large demands upon the intelligence, the adroitness, and the training of the man to whose lot it falls to design them. An architect has to be quick at seizing the essential idea or ideas upon which his building depends for its success as a contrivance; and he must be sure as well as quick. This kind of insight is only acquired by practice and training, and were there no other reason why an architect must be a man of good special cultivation, as well as good natural abilities, this part of his work is in itself sufficiently difficult to require an accomplished specialist.

The design, in its earlier stages, rather implies than sets forth much that will have to be foreseen and provided; but from the first its author ought to be able to see that it is capable of being carried

¹ *Modern Architectural Designs and Details*, containing eighty finely lithographed plates, showing new and original designs of dwellings of moderate cost, in Queen Anne, Eastlake, Elizabethan and other modernized styles, giving perspective views, floor and framing plans, elevations, sections, and a great variety of miscellaneous exterior and interior details of dwellings, stores, offices, etc. Also a number of designs of low-priced cottages in the various popular styles, adapted to the requirements of seaside and summer resorts, and suburban and country places; comprising drawings by prominent architects of New York, Boston, and other localities, as well as other designs prepared expressly for this work. All elevations, plans and details to scale. In ten Parts. New York: Bicknell & Comstock, 1880. Price, \$1 per Part.

² From the *British Quarterly Review*. A reply by T. Roger Smith to an article called "The Profession of an Architect."

out in all its details, whether of arrangement, construction, artistic design, or cost; and as he advances he has to grasp all these matters and hold them, so to speak, in a strong grip; for if any one of them escape him, his work is likely to prove unsuccessful.

The design of a building is, moreover, not complete, even if its arrangements are such as to make it fit for its intended use, unless it be thoroughly sound, stable, and well considered as a structure. This requirement—a very wide one—calls for a knowledge of materials, their strength and nature and the mode of putting them together; of foundations, and the modes of making them secure; and of the forces which are at work sapping the stability of structures, either by way of gradual decay or of a sudden and violent attack; and such knowledge the architect requires to possess, and is called upon to exercise, in a way which varies more or less with every building. It should be remarked, too, that the circumstances of the present day not infrequently call for close economy in the use of materials and the appropriation of space, so that the limit of stability is often unavoidably approached. Now, too, it is more often than formerly necessary to provide for a mode of occupation exceptionally trying to the fabric. Public halls, for example, with their crowded audiences, are in modern towns, as a rule, placed in upper stories, so that the safety of some thousands of people depends upon the provision of ample strength in the construction of their floors. Commercial and manufacturing buildings, again, are often made to support vast loads; the floors of others are crowded with heavy machinery in rapid motion, while such constructions are commonly built with an economy that verges on parsimony, so that it is essential to make them strong and secure, without rendering them costly. This is not always, if ever, an easy task.

It has been pointed out that all the appliances and contrivances in use at the present day, and all the building material obtainable in every part of England and many foreign parts, are at the disposal of the architect, and that every portion of the country is open to him as his field. It is consequently necessary for him, if he is to be equal to his opportunities, to know something of the materials, the climatic conditions, and the local building customs of every part of this country; and this alone implies that much varied information has been got together, such as is difficult to obtain, and can only be acquired by diligent personal search. The various mechanical and scientific appliances available in buildings also require to be understood. The architect should know which of them will suit his client's purposes, and should be able to secure that those which are selected for employment shall be efficiently and properly introduced. This involves no small knowledge of men, as well as inventions; for it is not only necessary to know what contrivances are best, but also what artificers or tradesmen can be relied upon to construct or fix these contrivances in a workmanlike manner, and with a good prospect of their answering the end for which they are to be employed.

The part of the work done by the architect in his own room culminates in the preparation of a complete set of working plans and of a specification descriptive of the materials and labor to be employed. The undertaking then enters on another stage. The architect has to direct the negotiations, measurements, etc., which result ultimately in an arrangement with contractors or tradesmen who shall execute the work, and he then personally and by deputy supervises the carrying of it out to completion. During its progress he has to certify from time to time that such payments on account as are agreed upon have become due, and at its close it is his duty to settle and state the final accounts. Now, it is of all things necessary for the successful discharge of these duties that the architect should be a man of business, and that he should be strong enough not to be afraid of the people with whom he has to negotiate, and over whom he has to exercise control. How far an architectural draughtsman and a superior operative acting together—the combination recommended in "The Profession, etc."—would be able to obtain the necessary command over an energetic, unscrupulous, overbearing and wealthy contractor may be doubted; yet if a man of that class obtains a building contract, it depends almost solely upon the architect's personal influence, straightforwardness and independence to keep him in his place and to secure the due execution of his contract.

Above all things, the direction of a building operation requires the services of a man of upright, straightforward, independent integrity. The writer of the article under reply has permitted himself to insinuate that it is a common practice with architects to receive bribes, which he dignifies by the name of "sly percentages," from the tradesmen whose work they have to superintend. Either he is not in a position to know, in which case it is unjustifiable to bring such a charge, or he is in such a position, in which case a far more severe term ought to be employed to characterize what he must be well aware is a slander.¹ That there are persons entirely unfit to bear the name, who call themselves architects, has been already admitted, and there can be no doubt that such people take all that they can get by fair means or foul; but men regularly occupying the recognized

position of architects of respectability are as honorable as the members of any other profession. To be trusted and trustworthy is the first necessity of professional life. The present writer may, perhaps, be permitted to add that his personal experience confirms him in his belief that the sly percentages spoken of in the article are not offered, as well as not accepted.

To judge by his language, the author of "The Profession of an Architect" seems to attach something like criminality to the very mode of payment always adopted. The custom has now become universal that under ordinary circumstances, and for the usual services, an architect charges his employers a lump sum equal to five per cent upon the amount of money spent. For the public this is a very fair mode of making a charge, and the rate is moderate. No building worth attending to at all, can well fail to reap advantage to the extent of at least one shilling in the pound from the skilled design and supervision under which it has been carried out. To the architect the payment is, on an average of his works, moderately remunerative. Occasionally it is good pay; often, especially in small, intricate buildings, or in the case of buildings in remote situations, it is miserably inadequate, and there can be no doubt that architects would be gainers were this custom abandoned, and the habit of charging for the time actually expended on each work substituted for it. The advantage of payment by a lump sum is that, being known beforehand, there is little room for dissatisfaction or dispute, and rough though the method of assessing the amount undoubtedly is, there is in it substantial fairness. For an architect to reside at one work and superintend it wholly, as the writer suggests, appears to be in nowise necessary, at any rate in this country, now that railways and good roads have made every part of England easily accessible; nor is it quite certain that the result would answer the expectations of those who tried the experiment. Too much interference might possibly result from the presence of an active-minded man bound to one building every day and all day long, and nothing so surely mars any undertaking as vexatious interference, however well-intentioned. To the suggestion that this resident architect ought to be an operative, I reply that at present so much of supervision as a working-man can give is given, and in a fairly effectual way, to the carrying out of work, but not certainly to the design. The superintendence of every building is under the care of a foreman, placed by the contractor or builder in charge of the work. He is an operative who has been marked out by his superior knowledge or intelligence, and who can usually understand, the plans and can direct the undertaking, so far as materials, the employment of labor, and the putting together of the work are concerned. In most buildings of importance the architect is also represented by a permanent "clerk of works," who is generally a man of much the same sort as the builder's foreman—that is to say, an intelligent operative. The practical knowledge and experience of one or other of these men, or both together can generally be trusted in all matters that relate to materials and structure, but it is the rarest thing in the world for them to understand the science of construction or the art of architecture. The meaning of a moulding, a feature, or an ornament of any sort, seems beyond the grasp even of the operative who executes it, and the best workman rarely proves capable of anything beyond a mechanical adherence to a drawing. With the solitary exception of carvers in stone and wood, much the same may be said of all classes of operatives employed in building. They seem rarely to possess any kind of artistic feeling in respect of the work they do, and never to be so informed as to be able to act as resident architects in the manner suggested in the article under reply. The most unsatisfactory results from an art point of view, commonly follow the efforts of an artisan who has had energy enough to establish himself in a small way. The deplorable little structures known commonly as "weekly property,"² seem to be the limit of the unassisted efforts of the artisan turned master-builder, in most instances, and how far these are from architecture let those say who are most familiar with them.

There appears no sufficient reason why, within fair limits, an architect who is able and skilful should not reap the reward of his abilities in the increasing number of his clients, just as a physician, when he becomes eminent, finds patients flock to his consulting-room. The parallel holds good in another respect; for as the fee of the young physician is not less than that of an established one, so architects of very different professional standing regulate their charge by the same percentage. It is quite true that when very numerous works are entrusted to the same architect, much of the preparation of the drawings and not a little supervision of the work must be delegated, just as the carrying out of the directions of the physician is necessarily delegated to nurses and other assistants.

In the architect's office, the plans which he originates are often to a large extent drawn out by assistants. This takes place under the supervision and control of their principal, with the constant addition of his own touches, and the work so done is virtually much the same as he himself would do, did time and opportunity permit.

The amount of personal work in the way of sketching and designing actually done with their own hands by many of those architects whose practice is the most extensive is, however, enormous. The most busy architect of the present day is, in all probability, the one who has charge of the Palace of Justice, now in course of erection in London; yet it is his boast that all the working and detail drawings of this enormous pile are the work of his own hands, and, in addi-

¹ Twice, and only twice, in a course of practice extending over twenty-five years, and bringing me into contact with tradesmen of every sort and kind, has any such thing as a percentage been offered or even suggested to me by a tradesman. Were such offers customary, I must have had my share of them. During the last ten or twelve years I have been largely engaged as an arbitrator and a witness in cases arising out of building disputes. These have been varied, and not seldom obstinate and angry, and in some cases it would have been to the advantage of one party or the other to disparage the architect; but I have never yet, in any case, heard proof given, or even a charge seriously made, that an architect had received a bribe from any tradesman or contractor, as I must have done were such percentage common.—T. R. S.

² Houses of which the rents are collected weekly; i. e., of the value of about 2s 6d per week downwards.

tion, he is pursuing nearly the same course with all his other work. Whatever may be the idea entertained by the writer of "The Profession of an Architect" as to the assistance which he supposes is obtained from clever clerks, he may rest assured that the success of an architect of the present day depends, as a matter of fact, mainly upon his personal skill as a draughtsman. Four abler architectural draughtsmen could not be found in all England than the four gentlemen who, as Academicians and Associates, represent architecture in the Royal Academy—a position the highest to which any architect can aspire. They are Academicians and Associates, however, not because of the excellence of their drawings, but of their buildings.

That which is most unfavorable to modern architecture is not the perfection of the methods placed at its disposal, but the absence of that universal and spontaneous effort which, during not less than four centuries, made architecture the foremost expression of popular energy, faith, skill and feeling. Could we once more gather up into this one channel all the force of the most powerful minds in Europe and leave them without science, and almost without literature, bereft of steam, without the printing-press, without great commercial or philanthropic undertakings, without other paintings and sculptures than works of a decorative character; could we, in short, force back the tide of time that has flowed on for five centuries, and then say to Europe, "Build; throw the best powers of your best men into this channel," we should soon find that human activity, administrative, structural and artistic, concentrated into architecture alone, would infuse a vitality into that art beyond even the vigorous growth which we have witnessed in natural science in our own day. But it is not the part of sensible men to desire the impossible, and there is not the smallest reason to suppose that a return to what it is presumed may have been the methods in which the buildings of the middle ages were managed would ever (were it practicable, which it is not) bring us one inch nearer to spontaneous living architecture, unless we could make the whole age move back also.

SIR WILLIAM CHAMBERS.—1726–1796.

"Court-like and learned."—*Merry Wives of Windsor.*

THE present taste for all art matters having to do with the eighteenth century accounts for the number of our pages devoted to that period, and the chapter herewith is another contribution to the art history of the so-called Queen Anne epoch. It may be urged that the subject of this notice has no place in a journal devoted to furniture matters, seeing that he was simply an architect; but the most superficial observation will show that unless the work of the cabinet designers and architects of those times is considered conjointly, we shall fail to understand the whys and wherefores of fashionable taste. In these days of eighteenth century revival it is both interesting and instructive to review the lives and works of those eminent men who are responsible for a style which possesses such resurrection qualities, and few men have left a greater mark upon their times than did Sir William Chambers upon the Georgian era. Notwithstanding that some eminent modern critics look upon him as an "innovator," his "conceits" are still palatable to the reproducing manners of to-day. Following in the footsteps of such men as Sir Christopher Wren and his pupil, Gibbs, he added an elegance to their constructive grandeur that was most acceptable in his day, and avoided somewhat that repetition of festoon and scroll-work so often met with in the works of earlier architects. Some of the original drawings made by him, now in the South Kensington Museum, give an excellent idea of his particular rendering of old details. One of the most noticeable features in these original drawings is the coloring, which might prove a suggestive study to those interested in interior decoration.

Having thus indicated the place this architect occupies in the history of the past and present, the events of his life may be considered *seriatim*. Although born in Stockholm, we may claim him as a fellow-countryman, for his parents were English, and at an early age he was sent to Yorkshire to receive his education. Like a great many notable men, as a lad he had a fancy for the sea, and on leaving school went as a supercargo to the East Indies. It is generally supposed he made two journeys to this quarter of the world, during one of which he visited Canton, and having considerable taste for drawing, made sketches of the buildings and costumes of that country. On his return to England some years after, these clever notes and sketches were published, with the assistance of such excellent engravers as Grignion, Foudrinier, and "Old Rooker." His brother is said to have amassed a large fortune as a merchant, but William Chambers, preferring architecture to business, resolved to carry his ambitious purpose into effect by travelling to Italy for the purpose of studying the remains of classic art in the land of their birth. Shortly after, he placed himself under the eminent Clerisseau, at Paris, and it is interesting to notice that Mr. Reynolds (afterwards Sir Joshua) was also studying at this time on the continent. In 1759 Sir William favored the world with his well-known volumes on "The Decorative Part of Civil Architecture," a work that must ever take the first rank as a text-book of classicism. In 1785 it was revised and republished by Mr. Joseph Gwilt, who added to it an outline of Grecian architecture; and this work still continues to be of great value to art students.

About this date, the then "Mr." Chambers was appointed instructor in the art of architecture to the Prince of Wales, afterwards George III., who, on coming to the throne, made him his chief archi-

tect. Once basking in the sun of royal favor, his success was assured, and he soon received his Majesty's orders to lay out and improve the Gardens at Kew, then the seat of the Princess of Wales. Whatever we may think of the several temples and Chinese summer-houses and pagodas now-a-days, they certainly gave great satisfaction at the time, for in 1765 the architect published a series of designs showing the plans, sections, and perspective drawings of the Gardens at Kew. The name of Cypriani, well known as an ornament still later in the century, appears in connection with this volume.

Royalty thus set the fashion for Chinese, and, as a consequence, we find it largely mixed up with the ornament of the period. Chippendale's pagodas, bells, birds, and dragons, are early examples of the rage, and at about the same year that Sir William Chambers's "Kew Gardens" appeared, several furniture catalogues were published, all more or less tainted with Chinese. For example, take Mainwaring's "Cabinet and Chair Maker's Real Friend and Companion" or his "Chair-maker's Guide," and another volume that followed it some years later; they all set forth the worst features of "the old French style," alternated with mixtures of Chinese and Gothic. Even Lock, who, as early as 1740, had designed and executed some fine classic furniture in the pure style, lent himself to the taste of the period in his publication of 1768. Ince and Mayhew followed in 1770, with their designs for household furniture; but they were much the same in style as Mainwaring's and others issued about that date.

A condemnation of the way in which Chinese was mixed up by many of these designers does not involve disapproval of such a style when sensibly applied and utilized. Take the side of room in Chinese style, by Sir William Chambers, as a study from originals. It certainly is very novel, and with but little alteration would please the taste of to-day. As remarked in our last number, "just as the Queen Anne style was associated with Chinese in the eighteenth century, so modern Queen Anne is accompanied by an unmistakable rage for Japanese. It is easy to understand why Japanese has taken the place of Chinese in this repetition of history, the former was so very much superior to the latter in artistic treatment. Japan was not known a century ago as it is now, otherwise Sir William Chambers would doubtless have eulogized and utilized it, as he did everything Chinese."

Returning to the legitimate department of Sir William Chambers's labors, it is well to inquire how far his treatment of classic art and domestic architecture influenced the household furniture of his day. It is in the designs of Heppelwhite that this influence is first apparent. In the design-book published by him some nineteen years afterwards, we find the details of the ornaments, pediments, brackets, etc., evidently affected by the study of the works of Sir W. Chambers. The cabinets and book-cases follow the architectural lines of his works, and his designs for pedestals and knife-cases are as elegant and pretty as some of the productions of Sir William.

The year of 1768 will always be memorable as that in which the Royal Academy of Arts was instituted by George III., with Mr. Chambers as treasurer, and Mr. Reynolds as the first president, and other honors quickly followed for the rising architect. In 1771, having presented the King of Sweden with some highly-finished drawings of the Gardens at Kew, his Majesty conferred on him the Order of the Polar Star, and he was permitted by his Britannic Majesty to assume the usual style and title annexed to British knighthood. In 1772 appeared a work entitled "A Dissertation on Oriental Gardening," by Sir William Chambers, Knight, Controller of His Majesty's Works," which seems to have been much appreciated, a second edition being called for within twelve months.

At this time the brothers, J. and R. Adam published their noted work on architecture, which is so much admired by some, and blamed by others. Of these two artists, Mr. T. Talbot Bury says: "As a contrast to the pure style which the last-named architects had endeavored to introduce into the edifices of this country, we have to mention that which was brought into fashion by Robert Adam, whose corrupt taste has invented a style which contained all the worst peculiarities of the worst class of ornamentation and composition; this had its numerous admirers, and unfortunately it was extensively practiced. Both of the brothers, Adam, gave designs for furniture, and it may be said in their favor that they improved on the taste then prevalent; but some of their ideas are too flimsy and poor in conception to be commended."

In 1774 Sir William visited Paris a second time, solely for pleasure and recreation. On his return he was appointed to the important and profitable task of conducting the works at Somerset House. The whole of that extensive building was erected from his designs, and whilst some consider it a monument to his fame, others look upon it as a grand opportunity lost. That it abounds in excellent detail and good points is undoubted, but it is wanting in the art of architectural massing—the central block being too depressed for the reception of this building. The old façade (by Inigo Jones) facing the river had to be removed, and Sir William was most severely criticized for destroying the edifice built by so great a man.

On the retirement of Sir William Chambers, he was appointed architect to the King, and from this date (1774) we hear but little of his public life. Having bought an estate he retired to it, and passed his latter years in the occasional company of some of his contemporary architects. The Architects Club was instituted and frequently visited by him, where he found congenial company amongst the artists of that day. He died on the 8th of May, 1796, and in the 71st year of his age, and was considered worthy of sepulture in

Westminster Abbey. Such an honor was a fitting close to the career of an eminent self-made man whose life is a lesson in painstaking industry, and who had no little to do with the furniture and art fashions of the 18th century.—*The Cabinet Worker*.

ST. LEONARD'S TOWER, MALLING.

MR. J. H. PARKER, C.B., writes to the *Architect*:—Will you allow me to call attention in your columns, to a remarkable historical monument which has been commonly overlooked, and which Sir John Lubbock now wishes to be added to the list of those to be specially protected by law when his Act passes, which, for the credit of the English nation, and especially of their representatives in Parliament, it is to be hoped will be in the next session? This monument is the earliest Norman keep in existence, and in all probability the earliest that ever was built, the construction of the walls being of earlier character than any Norman keep in Normandy itself or in Britain. It is called St. Leonard's Tower, at Malling, in Kent. The name is that of the manor on which it stands, and will only help to mislead people. This manor was given by William the Conqueror to one of his Norman followers, Gundulfus, or Gundulph. He found himself placed in the position of a settler in a hostile country, the king of which had given him a donation of a large tract of land, but he must get possession of it in the best way he could. His first object was naturally to secure an abode for himself, in which, with a small band of followers, he could be safe against any number of assailants. He was a brave man and a clever man, and an architect, and, not daunted by the danger of his position, he saw how he could secure this object. This was by building a house on an entirely new plan. The walls were built of rubble-stone, found on the spot or near at hand. The lower part was built solid, so that no battering-ram could have any effect upon it and the doorway was 10 feet from the ground, with a short ladder, which could be easily drawn up. The usual modes of attack were either by battering down the walls or by setting fire to the door. By this plan of defence the first was entirely impracticable, and the second very difficult. The principal apartments were at the top of the tower, and round it was a sort of wooden gallery, technically called a *hourd*, which could be easily thrown out when wanted, and archers stationed upon this *hourd* could make it impracticable for any one to get up to the door. As soon as these arrangements were completed, a score of men could defend themselves against any number so long as their provisions and their arrows held out. This was exactly such a house as was wanted by all the Norman settlers in Britain. It was very soon copied in all directions. The fame of Gundulph spread far and wide, and a few years afterwards he was employed by the Conqueror to build the Tower of London, a Norman keep on the same principle, only on a much larger scale, and built of good ashlar masonry, instead of rubble.

The popular notion that the Normans brought their keeps with them from Normandy, as things well known and long in use there, is entirely a delusion. About forty years ago my lamented friend, M. de Caumont, the leader of the Archaeological or Architectural Society of Normandy, made a tour to the sites of all the castles of the Norman Barons who had gone over to England with William the Conqueror. His object was to ascertain the character of the construction of stone walls of the first half of the eleventh century as distinguished from that of a later period. To his amazement and annoyance he found no masonry of that period in any one of them. Magnificent earth-works, enormous fosses or trenches, and lofty earthen mounds were found everywhere: the additional defences had been wooden palisades only, and no stone walls. When I first saw St. Leonard's Tower I immediately saw the importance of it for historical objects. My friend, R. C. Hussey, a Kentish man, had called my attention to it, and made me an accurate drawing of the construction. This I had engraved by the late Orlando Jewitt in one of his excellent wood-cuts, and I took one of these to De Caumont at one of the meetings of his society, of which I have been a member almost from its commencement. He acknowledged at once that this construction was of earlier character than any keep in Normandy. An account of the excursion of a select party of this society to the sites of the castles which I have mentioned and the results obtained will be found in the early volumes of the "Bulletin Monumental" of that society, of which De Caumont was the editor for the first forty years, and which is still continued with equal vigor by his successor, Count Léon Palastre.

These well-organized archaeological excursions were begun and carried on systematically, and I had attended many of them for years before the British Archaeological Society was thought of, or the Oxford or Cambridge societies, which have set the excellent fashion of local or county societies, which now extend to almost every county in England. M. Arcisse de Caumont must have the credit of inventing and developing the plan, which before his death had extended all over France also. A statue of him was erected with great ceremony at Bayeux, his native place, a year after his death. The inauguration was attended by thousands of people, representatives of the whole of Normandy. Almost every village sent its band and its banners in procession to do honor to the memory of De Caumont. He was comparatively little known in England, and he did not speak English, but he was well known to many of the principal archaeologists of England, including the then Marquis of Northampton, Mr. Albert Way, the director of the Societies of Antiquaries

and others whom I have met at these excursions, including also some of the best archaeologists of Germany, especially the Baron Quast, the inspector of monuments for the German Empire. All must acknowledge that the authority of De Caumont upon such a question as this was the highest that could be obtained.

CHRISTIAN ART IN THE CATACOMBS.

No one can examine the art of the catacombs without seeing that the primitive Christians, brought up, as they necessarily must have been, in the traditions of their time, preserved the general system of debased classical decoration which they found in being. They rejected, of course, many heathen figures and subjects, while they adopted a few which suited their own purpose. Occasionally, for instance, they preserved pagan types and mythological legends, such as the figures of Orpheus and Psyche, and symbolical representations of natural phenomena, such as Oceanus and Iris. But they began from the very first, though timidly and tentatively, to develop a Christian system of iconography. Their first attempts were naturally symbolical. They would have shrunk, especially during the ages of persecution, from the open representation of distinctively Christian subjects. Accordingly, such emblems as the anchor, the lamb, the dove, the fish, the stag, the dolphin, the vine, and the ship, were the most favorite adornments of the earliest Christian *arcosolia*. De Rossi and his English followers find the most ancient known specimen of Christian decorative painting in the gallery at the entrance of the Cemetery of Domitilla, on the Via Ardeatina. Here the vaulting is covered with most gracefully flowing vine-branches, with birds picking at the grapes, and naked boys gathering them. The fair presumption is that this painting, considering how significant an emblem the vine is, may be reckoned as a Christian work of an age which cannot be later than the second century. In the same cemetery there are subjects of a man fishing, of sheep feeding, of Noah in his ark, and of Daniel in the den of lions. Mommsen's authority is quoted for the opinion that these decorative works are of the same age as the original excavation of the particular part of the catacombs in which they are found. Another painting representing two persons seated at a table on which are some cakes of bread and a fish, undoubtedly, in the eyes of Christian iconographers, represents, in a way which would veil its meaning from a heathen, the Eucharistic feast. De Rossi distinguishes between representations of the common feast, or *agape*, or rather the heavenly banquet; the supper of the Seven Disciples (recorded in St. John, xix.) and a purely symbolical exhibition of the fish with loaves of bread, meaning the sacrament of the altar. Mr. J. H. Parker, who is the *bête noire* of Dr. Northcote and Mr. Brownlow, wishes to get rid of the Christian character of such representations by describing them as merely depicting the anniversary commemorative feasts of the dead common among the ancient Romans. But Bishop Graves, of Limerick, admits, as any dispassionate observer cannot help doing, their religious character and intention. The so-called crypts of Lucina are another division of the most ancient part of the Cemetery of Callistus. Here, in one of the cubicles, is a picture of our Lord's baptism. Here, too, the figure of the Orante, a female figure with the arms uplifted and outstretched in prayer, makes its first appearance. This, whether representing a particular Christian soul, or the collective Church, is one of the most common adornments of the catacombs. We can see no proof that the Orante ever stands for the Blessed Virgin. Even if it did, as our authors laboriously contend, the attitude and sentiment would imply a very different regard for our Lord's Mother, than is inculcated in modern Romanism. The first appearance in art of the Blessed Virgin with the Holy Child is found in the Cemetery of Priscilla, which is believed to be of the age of the Flavii, that is, before A.D. 150, or of the time of Trajan, immediately following. This is naturalistic in character, and a very beautiful work of art, of excellent style and execution. The Good Shepherd, our Lord with the Woman of Samaria at the well, the Hamorrhoeist, Jonah, Moses striking the rock, all made their appearance in the second century. The following age introduces a development and combination of subjects and compositions. The history of Jonah in its several stages, the sacrifice of Isaac, the healing of the paralytic man, now occur as common subjects. The chapel of Dionysus, about the year 275, has her figure with two other women and two men, all inscribed with their names, represented as standing in prayer in a paradise, wherein are birds and flowers. Nothing can be pleasanter or more instructive than to pursue our authors' pages, with their copious illustrations, describing in chronological succession these monuments of the earliest Christian art. The adoration of the Magi, and the story of Susanna, (represented as a lamb, with the name Susanna, standing between two wolves, inscribed "Seniores,") are also subjects which were represented in the third century.—*The Saturday Review*.

RUSKIN TO THE WORKINGMAN.

From *Fors Clavigera*.

As things are nowadays, you know any pretty lady in the Elysian fields of Paris who can set a riband of a new color in her cap in a taking way, forthwith sets a few thousands of Lyonnaise spinners and dyers furiously weaving ribands of like stuff, and washing them with like dye. And in due time the new French edict reaches also your sturdy English mind, and the steeples of Coventry ring in the reign of the elect riband, and the Elysian fields of Spital, or whae-

ever other hospice now shelters the weaver's head, bestir themselves according to the French pattern, and bedaub themselves with the French dye; and the pretty lady thinks herself your everlasting benefactress and little short of an angel sent from heaven to feed you with miraculous manner, and you are free Britons that rule the waves, and free Frenchmen that lead the universe, of course; but you have not a bit of land you can stand on—without somebody's leave—nor a house for your children that they can't be turned out of, nor a bit of bread for their breakfast to-morrow, but on the chance of some more yards of riband being wanted. Nor have you any notion that the pretty lady herself can be of the slightest use to you, except as a consumer of ribands; what God made her for—you do not ask; still less she, what God made you for.

How many are there of you, I wonder, landless, roofless, foodless, unless, for such work as they choose to put you to, the upper classes provide you with cellars in Lille, glass cages in Halluin Court, milk tickets, for which your children still have "the strength to smile." How many of you, tell me—and what your united hands and wits are worth at your own reckoning?

Trade unions of England—trade armies of Christendom, what's the roll-call of you, and what part or lot have you hitherto, in this holy Christian land of your fathers? Is not that inheritance to be claimed, and the birthright of it no less than the death right. Will you not determine where you may be Christianly bred, before you set your blockhead Parliaments to debate where you may be Christianly buried (your priests also all a-squabble about the matter, as I hear—as if any ground could be consecrated that had the bones of rascals in it, or profane where a good man slept!) But how the earth that you tread may be consecrated to you, and the roofs that shade your breathing sleep, and the deeds that you do with the breath of life, yet strengthening hand and heart—that it is your business to learn, if you know not; and this mine to tell you, if you will learn. . . .

Be it far from me to speak scornfully of trade. My father—whose charter of freedom of London town I keep in my Brantwood treasury beside missal and cross—sold good wine, and had, over his modest door in Billiter Street, no bush. But he grew his wine before he sold it; and could answer for it with his head that no rotten grapes fermented in his vats, and no chemist's salt effervesced in his bottles. Be you also tradesmen—in your place—and in your right; but be you primarily growers, makers, artificers, inventors, of things good and precious. What talk you of wages? Whose is the wealth of the world but yours? Whose is the virtue? Do you mean to go on forever, leaving your wealth to be consumed by the idle, and your virtues to be mocked by the vile?

The wealth of the world is yours; even your common rant and rabble of economists tell you that—"no wealth without industry." Who robs you of it, then, or beguiles you? Whose fault is it, you clothmakers, that any English child is in rags? Whose fault is it, you shoemakers, that the street harlots mince in high-heeled shoes, and your own babes paddle barefoot in the street slime? Whose fault is it, you bronzed husbandmen, that through all your furrowed England, children are dying of famine? Primarily, of course, it is your clergymen's and master's fault; but also in this your own, that you never educate any of your children with the earnest object of enabling them to see their way out of this, not by rising above their father's business, but by setting in order what was amiss in it; also in this, your own, that none of you who do rise above your business ever seem to keep the memory of what wrong they have known or suffered; nor, as masters, set a better example than others.

NOTES AND CLIPPINGS.

A LEGAL DEFINITION.—A supervising architect is a person performing "labor," although not a "laborer," within the meaning of the mechanics' lien law. — *Albany Law Journal*

A FIND OF OLD DRAWINGS.—A chest of old drawings lately discovered in Yorkshire, has been the source of a valuable addition to the British Department of Prints. There are a fine specimen of Filippus Lippi, a sketch in red chalk, attributed to Michael Angelo, two water-color drawings by Cuijp, and a spirited pen and ink sketch by Wouvermans.

INDUSTRIAL USE OF THE PRECIOUS METALS.—The director of the mint, in the course of his inquiry into the annual production of precious metals in the United States, has discovered that the United States uses in the arts; and in manufacturing, about \$10,000,000 worth of gold, and about \$5,000,000 worth of silver annually, or about one-fourth of the entire amount of both metals so used. France employs another one-fourth. All the other countries of the world put together but equal the United States and France in the industrial employment of the precious metals.

DEADENING SOUND.—The association of architects, in Wurtemberg, after a thorough discussion of the best methods of deadening ceilings, walls, etc., to sound, have arrived at the conclusion that the propagation of sound through the ceiling may be most effectually prevented by insulating the floor from the beams by means of some porous, light substance—as a layer of felt, a filling of sand or of stone coal dust, the latter being particularly effective. It is difficult to prevent the propagation of sound through thin partitions, but double unconnected walls, filled in with some porous material, have been found to answer the purpose best.

SIPHONS IN SEWERS.—In constructing sewers it is often necessary to lead them across the branch of a river or some other water course. The passage has usually been accomplished on the plan of M. Belgrand, by means of a submerged siphon. The sunken portion, however, often clogs, and even where Belgrand's cleansing sphere is introduced the visits and repairs are difficult and costly. Maurice Lévy has introduced an elevated siphon to carry the sewer waters from Bercy over the St. Martin canal. Water pipes and valves are connected with the summit of the siphon in such a way as to act automatically whenever the movement of the sewage becomes sluggish, and the experiment has proved satisfactory and economical. — *Annales des Ponts et Chaussées.*

A FRENCH FIRE-RESISTING PREPARATION.—The French Society for the Encouragement of National Industry has lately awarded a sum of 1,000 francs to M. Martin, of Paris, for his preparations, which have been variously tested by a committee of the society. The report briefly is that M. Martin's mixtures render tissues and the superficial parts of wood unflammable, that they do not alter the tissues or colors on them, and that stuffs so rendered unflammable retain this property after having been exposed several months, either in a stove at 36 degrees or on the stage of a theatre. M. Martin's mixtures are not in a sense new. For all light tissues he uses pure sulphate of ammonia (8 kil.), carbonate of ammonia (2.5), boric acid (3), pure borax (2), starch (2), water 100. Another mixture he applies to painted decorations consists of chlorhydrate of ammonia, boric acid, glue, gelatine, water and lime. Two other preparations are specified. M. Martin's preparations are said to have been used with success for decorations in the Théâtre des Variétés and the Théâtre des Nouveautés, and at the Théâtre du Châtelet, in the Venus Noire, for rendering unflammable the masts of vessels in which a fire is simulated every night by means of oakum wrapped round the masts.

STEAM-BOATS IN VENICE.—Among the few existing relics of mediævalism which we imagined would continue to survive the attack of the practical and go-a-head tendencies of the age, we certainly reckoned the gondola. It is difficult, in fact, to imagine Venice without this peculiar characteristic, so suggestive of the romance of its past history, and yet there can be little doubt as to what will be the result of the competition which it will be shortly called on to enter into with the new steam-boats which we see are to invade the lagoons of the Adriatic; travellers will, of course, lament the change, and talk bitterly about the vandalism of the age; but they will all the same take the steam-boats as soon as they are put on, and leave the few leaky gondolas that may still ply to the undisturbed patronage of travelling aesthetes. The company that is about to supply Venice with steamers will model its vessels upon those of our own river, we understand, and it is quite possible that the fares charged to passengers also may imitate the cheapness of our "penny boats." And with penny boats on the water-ways of Venice, we think the climax of modern utilitarianism may be fairly considered to have been reached. They are a fitting supplement, in fact, to the railway up Vesuvius, and the steam launches of the Nile. — *London Figaro.*

WOODEN FLOORS IN RUSSIA.—The best existing wooden floors in the European capitals are the parquet and the mosaic floors, and the finest specimens are perhaps to be met with in Russia. For the making of these which may justly be termed "art floors," tropical woods are exclusively employed. Fir or pine, and especially pitch pine, are woods that are never employed, as, in consequence of their sticky character, they attract and retain the dust and dirt, and thereby soon become blackened. The difficulty to, with pitch pine is that, however well seasoned, it has a tendency to continue shrinking. Some of the mosaic floors to be found in the palaces of the nobility of Russia are of great splendor, and in the Winter Palace of the Czar there are large floors composed of squares of wood, none of which are larger than an inch square, and one truly magnificent specimen of mosaic wood flooring in the Summer Palace of the Czar is made of small squares of ebony wood, extravagantly inlaid with mother-of-pearl. A considerable trade is done in Dantzic and Riga by exporting small blocks of oak for parquet flooring work, and it is somewhat remarkable that no market can be found for the stuff in England, although the demand in Germany and France is so great. Last year a small vessel, loaded with these blocks and bound for Bordeaux, was wrecked on the coast of Withersea, near Hull. The cargo was offered for sale by auction on the account of the salvors, and, there being no English buyers, it was bought by the agent of a French house, who afterward railed down the wood to Hull, and from that port shipped it to France. — *Timber Trades Journal.*

REPORT OF THE LIGHTHOUSE BOARD.—The annual report of the Lighthouse Board for the last fiscal year, promises to contain considerable valuable information with regard to the progress made in the electric light during the past year by Professor Morton, the scientific expert of the Board, with a view to placing it in lighthouses, and doing away with the oil lights which are now in use. In order to give the electric light a proper test before adopting it for general use, an appropriation of \$50,000 will be recommended to place one of the new lights in the Navesink Lighthouse, situated on the Highlands. The only other recommendation which will be made by the Board, in addition to the amount necessary for carrying on the work of the Bureau, which amounts to about \$2,500,000 per annum, will be in connection with the Lighthouse, which was during the last session ordered by Congress to be constructed in Stamford Harbor, Conn., and for which an appropriation of \$7,000 was made. This amount, it is found, is not sufficient to construct the building, as it will have to be built upon rocks. In order to carry out the intention of Congress, an additional appropriation of \$23,000 will be asked for the establishment of this lighthouse, \$30,000 being the amount necessary to complete it. The lighthouse, if the appropriation is granted, will be built on the rocks known as Harbor Ledge. The Board will not ask for any new lighthouses, it having been concluded to leave the matter of constructing additional houses, exclusively to Congress.

TWO MONTHS FREE!

New Subscriptions for the *American Architect and Building News* for the year 1881, received on or before December 25, 1880, accompanied by the amount of the advance price (\$6.00), will entitle the subscriber to receive, free of charge, the eight issues for Nov. and Dec., 1880.

BUILDING INTELLIGENCE.

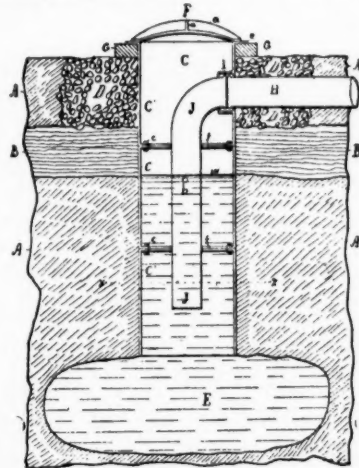
[Reported for The American Architect and Building News.]

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents at Washington, for twenty-five cents.]

No. 233,714. **RESERVOIR-WELL.**—David H. Tiehenor, Newark, New Jersey. This invention is an improvement upon the well for which an application for Letters Patent was filed under date of August 3, 1880. The invention described in the said application consisted, primarily, in forming an underground chamber at the bottom of a well of large bore, that the water-supply might be drawn from a great area and drain as large a number of water-veins as possible. The present improvements consist in applying an air-tight cover to the top of the well-casing for the purpose of forming an air chamber in which a partial vacuum may be produced, and in drawing off the water at some level below the cover, so as to utilize the space above the water as an air vessel to ease the operation of the well-pump, while the partial vacuum in this space produces a greater flow of water from the veins feeding the reservoir through the atmospheric pressure thereby developed upon the sources of the water-supply. This improvement is designed, primarily, to increase the flow of water from the supplying-veins into the well-reservoir, and, secondarily, to ease the working of the pump employed to drain the well by utilizing a portion of the well-casing as an air-chamber. The first object is at once effected by applying an air-tight cover to the well-casing, either at the top or any convenient point above the surface of the water, and exhausting the air from inside the casing. The second may be effected by introducing the suction-pipe into the well through the side below the cover, or by projecting it downward a suitable distance through the cover, the space above the open end of the pipe in either case serving as an air-vessel to ease the working of the pump. B represents a hard stratum near enough to the surface to sustain the concrete bed D. C is the well-curb, composed of sections C', bolted together. E is the underground reservoir. F is the air-tight cover applied to the top flange of the well c. H is the suction-pipe from the pump, inserted into a socket, I, formed in the side of the curb at a suitable distance below the ground to lead conveniently to the well-pump. J is a pipe leaded into the same socket, and extended downward in the well to the lowest or natural level of the water (indicated by the line x x'). It is obvious that if the pump were started with the mouth of the pipe in the water, no vacuum or rarefaction of the air in the casing would be produced as long as the water supplied the draft caused by the pump, and as the object of my invention is to employ a vacuum in the casing to stimulate the flow into the reservoir from the water-veins, the water-pipe must be shortened, or the draft of the pump upon the well must be increased. The former course would prevent the pump from drawing any water whatever in a time of drought; therefore the demand of the pump upon the well for the purpose of producing a vacuum is increased, thereby increasing the supply of water to the reservoir, and raising the level of the water in the casing. By forming a hole from one-half to one inch in diameter in the pipe J at any desired point below the range of atmospheric power to lift the water, a vacuum can be maintained



without interfering with the pumping operation, even if there should be a leakage of air into the well from any of the joints in the casing. Without this hole to draw a certain amount of air from the well at each stroke of the pump the degree of vacuum produced would only raise the water-level continuously to cover the mouth of the pipe J, and the greatest supply of water to the reservoir would not be secured. The function of the hole b is to steadily increase the rarefaction of the air in the casing and the flow of water from the veins into the reservoir without interfering with the pumping of water continuously from the well. The flow of water from the veins may be thus materially increased until the level of the water in the casing is raised by the vacuum therein to a level with the hole b, when the rarefaction of the air would cease until such time as the water-level again fell below the point marked b, just above the hole b. The space above the line x x' serves as an air-vessel to the well-pump, permitting a free flow of water to the pump at each stroke, which draft is made up by the continuous flow into the reservoir while the pump is reversing or changing stroke. This mode of increasing the vacuum without shortening the suction-pipe secures all the advantages of an increased flow of water from the supplying-veins, while it obviates the danger of a serious accident to the pump if the end of the pipe were suddenly uncovered and the piston allowed to make a stroke too suddenly.

234,382. **GATE-HINGE.**—John L. Anderson, Muncie, Ind.
234,387. **FASTENING FOR MEETING RAILS OF SASHES.**—Charles M. Burgess, New Britain, and Rollin Sanford Newington, New Britain, Conn.
234,402. **COVER FOR SINK-OUTLETS.**—John W. Grows, Brooklyn, N. Y.
234,408. **REVERSIBLE FILTER.**—Ralph S. Jennings, Baltimore, Md.
234,417. **COVERING FOR STEAM-PIPES, ETC.**—Jane Merriam, Milwaukee, Wis.
234,419. **STEAM RADIATOR.**—Hazen Mooers, Milwaukee, Wis.
234,425. **ROOFING COMPOSITION.**—Christopher F. Pearson, Portland, Oregon.
234,442. **ROOFING AND PAVING MATERIAL.**—Cyrus M. Warren, Brookline, Mass.
234,464. **HATCHWAY-DOOR MECHANISM.**—Jas. W. Evans, New York, N. Y.
234,466. **KNOB-ATTACHMENT.**—William H. Gonne, Chatham, Canada.
234,477. **EXTENSION CHANDELIER.**—Timothy D. Hotchkiss, Cromwell, Conn.
234,495. **CURTAIN FIXTURE.**—Herman Seehausen, Memphis, Tenn.
234,517. **BIT-STOCK.**—Quimby S. Backus, Winchendon, Mass.
234,545. **PLANER-TOOL.**—Harlow Dewey.
234,570. **WATER-CLOSET.**—Samuel S. Hellyer, London, Eng.

SUMMARY OF THE WEEK.

Baltimore.

BUILDING PERMITS.—Fourteen building permits have been issued since the last report; the following only are of sufficient importance to be mentioned:

Philip Neiss, three-sty brick building, in rear of 126 Fayette St., 25' x 40'.
Chas. E. Willis, 13 two-sty brick buildings on Jefferson St., near Burk St.; also 3 two-sty brick buildings on Burk St., near Jefferson St.
B. Struck, 1 three-sty brick building, on Mulberry St., between Howard and Park Sts., 14' x 51'.
IMPROVEMENTS AT LOCUST POINT.—The B. & O. Railroad Co., in view of the necessity for further storage room at Locust Point, have decided to extend the double piers Nos. 31 and 32, inland to the distance of several hundred feet, the new portion to be built up two, and probably three or more stories high. An additional force of men have been put to work on the new elevator of the Company, the foundations being about completed.

Boston.

BUILDING PERMITS.—*Beacon St.*, No. 342, for D. C. Knowlton, 1 dwell., 22' x 63', three stories; James Fagin, builder.
Wood.—*Washington St.*, near Keyes St., for A. A. Ayers, 1 dwell., 13' x 28'; A. A. Ayers, builder.
Monadnock St., near Dudley St., for Mrs. John H. Sumner, 1 dwell., 38' x 36'; two stories, hip-roof; Edw. McKechnie, builder.
Sweet St., near Magazine St., for Bradley Fertilizing Co., 1 storage, 50' x 75'; Christopher Tilden, builder.
Kendrick St., near Lake St., for J. B. Downing, 1 engine-house, 20' x 40'; A. J. Needham, builder.
Garfield Ave., near Washington St., for Thomas J. Tobin, 2 dwells., 18' x 28', two stories; Thom. J. Tobin, builder.
Belfort St., cor. Sagamore St., for John H. Worthington, 1 dwell., 16' x 48'; Jas. E. Yates, builder.
Grampan Way, near Savin Hill Ave., for Geo. H. Young, 1 dwell., 18' x 38', two stories; Geo. H. Young, builder.
Ware St., near Trull St., for Franklin King, 1 dwell., 33' x 35'; Edw. McKechnie, builder.
Elmo St., near Erie Ave., for Luther D. Stiles, 2 dwells., 22' x 33', two stories, mansard; Luther D. Stiles, builder.

Brooklyn.

BUILDING PERMITS.—*Gates Ave.*, s s, 175 e Yates Ave., 5 three-sty brown stone flats, 20' x 55'; gravel roof, wood cornice; cost, \$7,000 each; owner, etc., Geo. Nichols, 619 Warren St.
Bedford Ave., n w cor. Hancock St., 4 four-sty

brown-stone stores and flats, 24' and 21' x 55'; owner, William J. Northridge, 56 Myrtle Ave.; architect, Rulof Van Brunt; masons, Van Pelt & Pearce.
Hancock St., n s, 78 w Bedford Ave., 1 four-sty brown-stone flats, 22' x 55'; owner, William J. Northridge, 56 Myrtle Ave., architect, Rulof Van Brunt; masons, Van Pelt & Pearce.

Grove St., e s, 175 from Bushwick Ave., 1 two-sty brick stable, 25' x 55'; owner, Chas. Kelbe, cor. Second St. and South Eighth St.; architect, A. Herbert; builder, Henry Stocks.

Maujer St., No. 229, 1 three-sty frame tenement, 25' x 54'; cost, \$4,000; owner, Henry Eichhorn, 227 Maujer St.; architect, John Platte; builder, John Rueger.

Fayette St., No. 23, w s, 215 n Broadway, 1 three-sty frame tenement, 28' x 50', tin roof; cost, \$3,500; owner, M. Reichert, cor. Broadway and Fayette Sts.; architect, Th. Engelhardt; builders, Wm. Cutter and Jos. E. Frise.

Bushwick Boulevard, No. 174, e s, 70 n Scholes St., 1 three-sty brick brewery, 22' x 48'; cost, \$15,000; owners, Ochs & Lehnert, cor. Bushwick Boulevard and Scholes Sts.; architect, Th. Engelhardt; builders, B. Rauth & Bro.

Fourth Place, n s, 100 w Clinton St., 6 two-sty brown-stone dwells., 18' x 45'; cost, \$5,000 each; owner, Ester Williams, 39 Fourth Place; architect, R. Dixon; builder, L. Bossert.

Willoughby Ave., s s, abt 150 w Yates Ave., 1 three-sty brown-stone dwell., 22' x 48'; cost, \$15,000; owner, Hermann Reiners; architect, W. H. Gaylor; builder, Thomas Gibbons.

Decatur St., n s, 50 w Reid Ave., 3 two-sty brick dwells., 16' x 40', gravel roof, wood cornice; cost, \$2,500 each; owner, A. Miller, 72 Stanhope St.; architect, T. Miller.

Ninth Ave., n w cor. Lincoln Place, 1 three-sty brick dwell., 25' x 46'; cost, \$8,000; owner, James Davenport, 102 Sixth Ave.; architect, W. H. Wood; builder, J. S. Drake.

Fulton St., n e cor. Spencer Place, 3 four-sty brown-stone stores and flats, 20' x 60'; owner, C. L. Marsh, 111 Broadway, New York; architect, M. J. Morrill; builder, G. H. Chamberlin.

New York.

BUILDING PERMITS.—*East Forty-Ninth St.*, Nos. 150, 152 and 154, and Nos. 151 and 153 *East Forty-Eighth St.*, 5 four-sty brown-stone tenements, 25' x 80'; cost, \$15,000 each; owner and builder, Fred. Schuck, Eighty-Fifth St., between Aves. A and B; architect, John Brandt.

Thirteenth Ave., cor. Fourteenth St., 1 four-sty brick factory, about 104' x 125' 9"; cost, about \$30,000; owner, Duncan Macfarlane, 19 South William St.; architect, Herman Kreidler.

Sixty-Second St., n s, 65 feet west of Ninth Ave., 1 five-sty brick tenement, 30' x 45'; cost, \$12,000; owner, Mrs. Louisa Miller, 937 Ninth Ave.; architects, Thom & Wilson.

West Fifty-Sixth St., No. 336, 1 five-sty brown-stone tenement, 25' x 82'; cost, \$15,000; owner, Peter Farley, 240 West Fifty-Third St.; architects, Thom & Wilson; mason, James Stevenson.

One Hundred and Sixteenth St., n s, 139 feet west of Third Ave., 4 three-sty brown-stone dwells., 17' x 52'; cost, \$12,000 each; owner, Edward Lange, 209 East Twelfth St.; architects, Thom & Wilson; builders, J. Crow and Grissler & Fausel.

Eighty-Sixth St., n s, 164 feet west of Ave. B, 12 three-sty brick dwells., 17' 4" x 36'; cost, about \$5,500 each; owner, John C. Henderson, 109 Spring St.; architects, Lamb & Wheeler; builders, Robinson & Wallace and John J. Brown.

West Thirty-Ninth St., No. 450, 1 five-sty brick warehouse, 25' x 95'; cost, \$8,000; owners, Ward & Son, on premises; architect, W. H. Cuvel.

Fifth St., Nos. 213 and 215, 2 five-sty brick tenements, 25' x 72', tin roof, iron cornice; cost, \$12,000 each; owner, Adam Folz, 239 Fifth St.; architect, A. H. Blankenstein; mason, Peter Schaeffer.

Thomas Ave., cor. Fordham St., 1 three-sty frame engine-house, 25' x 83'; cost, \$7,800; owner, City of New York, 155 Mercer St.; architects, N. LeBrun & Son.

One Hundred and Twenty-Fourth St., s s, 225 feet west of Sixth Ave., 4 four-sty brown-stone tenements, 18' 9" x 65'; cost, \$14,000; owner, Minnie Braender, Ave. B, between Eighty-Fourth and Eighty-Fifth Sts.; architect, John Brandt; builder, Ph. Braender.

Robbins Ave., n e cor. Division Ave., North New York; 10 two-sty brick dwells., 20' x 46'; cost, \$5,000 each; owner, John G. Heintze; architect, John Brandt; builder, Charles Bornkamp.

East Fifty-Sixth St., No. 228, 250 and 232, 3 five-sty brick tenements, 25' x 55' 10"; cost, \$10,000 each; owner, M. Rinaldo, 220 East Thirty-Third St.; architect, Julius Boskell.

One Hundred and Sixth St., s s, 79 feet west of First Ave., 6 four-sty brick tenements, 25' x 52'; cost, each, \$9,500; owner, Andrew Spence, East Fifty-First St.; architect and builder, Jas. Duffy.

East One Hundred and Tenth St., No. 108, 1 three-sty iron and brick hotel, 25' x 60'; cost, \$8,000; owner, Jas. Shrady, 1074 Madison Ave.; architect, Andrew Spence.

Second Ave., cor. One Hundred and Twelfth St., 1 four-sty brick store and dwell., 20' x 60'; cost, \$4,500; owner and builder, John W. Warner, One Hundred and Sixth St., between Madison and Fifth Aves.; architect, Wm. Graul.

Seco d Ave., w s, 20 feet north of One Hundred and Twelfth St., 2 four-sty brick stores and tenements, 25' x 60'; cost, each, \$5,000; owner, builder and architect, same as last.

Second Ave., w s, 70 feet north of One Hundred and Twelfth St., 1 four-sty brick store and tenement, 18' x 60'; cost, \$4,000; owner, builder and architect, same as last.

One Hundred and Twelfth St., n s, 75 feet west of Second Ave., 1 four-sty brick dwell., 25' x 61' and 16'; cost, \$700; owner, builder, and architect, same as last.

Fifty-First St., n s, being east of Tenth Ave., 1 five-sty brick and stone parsonage, 21' 9" x 55' 4"; cost, \$13,000; owner, Rev. M. J. Brophy, representative; architect, A. Crooks; builders, J. Ross and P. Walsh.

Mercer St., No. 171, 1 two-sty iron and brick store, 25' x 90'; cost, \$8,500; owner, S. B. Duryea, 25 Broad St.; architect, M. J. Morrill; builders, Drummond & Jones.

Seventy-Fifth St., s w cor. Fourth Ave., 6 four-sty brown-stone dwells., 18' 17' and 15' x 56, 58, and 75'; cost, each, \$16,000 to \$18,000; owner and builder, Hugh Blesson, 142 East Fifty-Eighth St.; architect, Jno. G. Prague.

Greene St., No. 62, 1 two-sty brick wagon factory, 25' x 56', tin roof, iron cornices; cost, \$2,500; owner, John Schmitt, 43 Leonard St.; builder, John Derr.

Second Ave., n e cor. Eighty-Second St., 1 four-sty brown-stone store and tenement, 25' 7" and 26' 7" x 76'; cost, \$16,000; owner, Frank Hertel, 346 East Eighty-Second St.; architect, Frederick Jenth.

Eastern Boulevard or Ave. A, from Fifty-Ninth St. to Sixtieth St., 10 four-sty brown-stone tenements, 26' 10" and 19' x 73' and 65'; cost, \$10,000; owner, Andrew J. Kerwin; foot of Fifty-Eighth St., E. R.; architect, Albert Wagner.

One Hundred and Fourteenth St., s s, 100 feet west of Second Ave., 5 four-sty brown-stone tenements, 21' x 60'; cost, \$13,500; owner, Robert J. Algie, 884 Tenth Ave.; builder, Peter Algie.

ALTERATIONS. — *Kingbridge Road,* w s, about 1,500 feet south of Inwood St., raised one-sty, mansard roof, newly lathed and plastered, doors, trimmings, etc., cost, \$2,500; owner, Wm. H. Hayes, Inwood St., cost, \$2,500; owner, Wm. H. Hayes, Inwood St.; architect, Albert Wagner.

BROADWAY. No. 82, raised one story (making six stories) mansard roof, metal and slate cornice; owners, United States Express Co., on premises. **THEATRE.** — *Lester Wallack* will have a new theatre built, with 150 feet frontage on Broadway, and 150 feet frontage on Thirtieth St. The building will be built from ideas gleaned by Mr. Wallack from the leading theatres in Europe.

APARTMENT HOUSE. — On Fifty-Fourth St., corner of Sixth Ave., a first-class apartment house is to be built of brick, with stone and terra-cotta finish. The cost will be about \$40,000 and the architects are Messrs. E. L. Littell and Arthur Crooks.

BUILDING. — Building has been almost at a stand-still this week, owing to the severe frost, and new projects, as usual in a holiday week, are held back. We hear of several large buildings which will be announced within a few days.

Philadelphia.

BUILDING PERMITS. — *North Twenty-First St.,* No. 158, 2 stables, 18' x 32'; A. J. McGary, owner. *Rittenhouse St.,* No. 42, two-sty dwell., 16' x 28'; H. Toland, owner.

Wyandusing Ave., between Forty-Fourth and Forty-Fifth Sts., two-sty dwell., 16' x 30'; Chas. Christine. *Jefferson St.,* west of Bonier St., 2 three-sty dwells., 18' x 70'; Culbertson & Hay, contractors.

Broad St., south of Cumberland St., two-sty dwell., 16' x 17'; Jos. N. Pattison, contractor.

Tenth St., north of Montgomery St., two-sty fire engine house, 30' x 60'; Serrills & Shoemaker, owners. *Herman St.,* north of Cresson St., 2 three-sty dwells., 16' x 25'; Jacob Rettengruber, owner.

Harry St., near Jenks, two-sty dwell., 16' x 28'; Sebastian Heim.

Orinkey St., No. 2006, two-sty dwell., 16' x 28'; Jacob Farber, contractor.

Reed St., west of Eighteenth St., two-sty dwell., 16' x 42'; W. Martin, owner.

Lehigh Ave., cor. Braddock St., 4 two-sty dwells., 15' x 42'; J. R. Pyle, contractor.

Twelfth St., cor. Carpenter St., one-sty dye-house, 20' x 60'; Jno. Williams & Son.

Gray's Ferry Road, between Thirty-Fourth and Thirty-Fifth Sts., two-sty store-house, 60' x 128'; Harrison Bros. & Co., owners.

Fernon St., No. 1020, 2 two-sty dwells., 15' x 30'; Albert L. Fretz, contractor.

Center and Wood Sts., two-sty store and dwell., 33' x 38'; S. S. Keely, contractor.

Chestnut St., No. 305, east of Thirty-Sixth St., two-sty dwell., 15' x 40'; Davis Marshall, owner.

Kimball St., west of Twentieth St., two-sty addition to store-house, 50' x 50'; Fulton Walker & Co., owners.

Thirty-First St., north of Jefferson St., three-sty dwell., 18' x 32'; F. A. Poth, owner.

St. Louis.

BUILDING PERMITS. — Twenty-seven permits have been issued since our last report, of which ten are for frame structures of slight importance. Of the rest, those worth \$2,500 or over, are as follows: —

OWNERS' NAME.	USE.	Sy.	Foot.	Cost.
T. Manning.	Dwell.	3 10	4,800	
T. Manning.	Dwell.	3 10	4,800	
F. Tiedeman.	Flour Mill.	5 6	6,000	
I. C. Orick.	Dwell.	2 12	15,000	

General Notes.

BELLEFAIRE, WEST VA. — Mr. G. W. Yost, architect, is building for L. Rankin a house costing \$1,000; a house for H. Over, cost, \$5,000; and a house for S. Cummins, cost, 4,000.

CHESTER, N. Y. — A brick church, with stone finish, 40' x 78', in the Gothic style, with open timber roof, is to be built, at a cost of \$6,500, from designs of Mr. Arthur Crooks, of New York.

CINCINNATI, O. — Sixty-one bids for building an engine house on Harrison Ave. have been received.

HOLYOKE, MASS. — J. S. Carr, of Springfield, is building a brick block on Dwight St., to be used for a crackerbakery.

HULL, MASS. — E. A. P. Newcomb, of Boston, has just prepared plans for a summer cottage for J. P. Palmer, Esq.

LOUISVILLE, KY. — Very little of importance has transpired here, in the building line, since our last report. The total value of building permits in the past week has been \$11,000, of which \$5,000 was an addition to a frame cattle pen, and \$2,400 for alterations to the St. Cloud Hotel. The sudden cold spell, it is feared, will delay several buildings, which would otherwise have gone on, but mechanics of all kinds are yet quite busy.

LYNN, MASS. — J. N. Buffum & Co. are to build a new planing mill and box factory for their use, and a large building which will be occupied by Melcher & Spinney, manufacturers of rubber heel stiffenings. The new planing mill will measure 50' x 116', three stories high. The building for Melcher & Spinney will be near the engine house and the new planing mill. It will be 55' x 120', and two stories high.

MARBLEHEAD, MASS. — At a recent town meeting, the sum of \$10,000 was appropriated for the new school-house.

MILWAUKEE, WIS. — Mr. C. F. Brandt will rebuild his house on Eleventh St., and has received a permit for that purpose.

The foundation for the Exposition will be all laid in less than two months.

NEW BRITAIN, CONN. — L. Crane is about building a brick block, 47' x 74', three stories, to be used for stores and tenements; R. W. Hills, of Waterbury, architect; John Hanna, contractor for stone-work.

NEWTONVILLE, MASS. — E. A. P. Newcomb, architect, of Boston, is altering a house for H. H. Sacker. **NEW HAVEN, CONN.** — J. Parker is building an addition to his store, at the corner of Orange and Elm Sts.; cost, \$5,000.

NORTHFIELD, MASS. — The Northfield Knife Company have purchased land, on which to build new tenement houses.

PARIS, ME. — A large pulp mill is to be built at Snow's Falls, the building to cost \$15,000.

PRINCETON, N. J. — Work on the new chapel is to be begun soon. Mr. R. M. Hunt, of New York, is the architect.

WORCESTER, MASS. — We are requested to state that the architect of the two houses reported in our last issue is Mr. J. B. Woodworth, not "Woodruff," as printed.

WORCESTER, MASS. — Messrs. Barker & Nourse are building a brick office-building for the Washburn & Moen Manufacturing Co., at Quissigamond Village; cost, \$3,000.

Bids and Contracts.

HOLYOKE, MASS. — A. B. Tenny has taken the contract to put up an office building at Holyoke, Mass.

WALTHAM, MASS. — The foundations for the new pumping-engine at the Waltham water-works are being laid by agents of H. R. Worthington, of New York, to whom the contract has been awarded.

Publishers' Department.

The American Architect and Building News.

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New Advertisements.

WANTED. — Architect's Assistant. Page 264.

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H. W. JOHNS MFG CO. (New York), Paints and Roofing. Pages vii and vi.

JAMES TAYLOR (Boston), Terra-Cotta. Page vii.

A. H. ROFFE & CO. (Boston), Architectural Books. Page 264.

WARREN, FULLER & CO. (New York), Artistic Wall Papers. Page vii.

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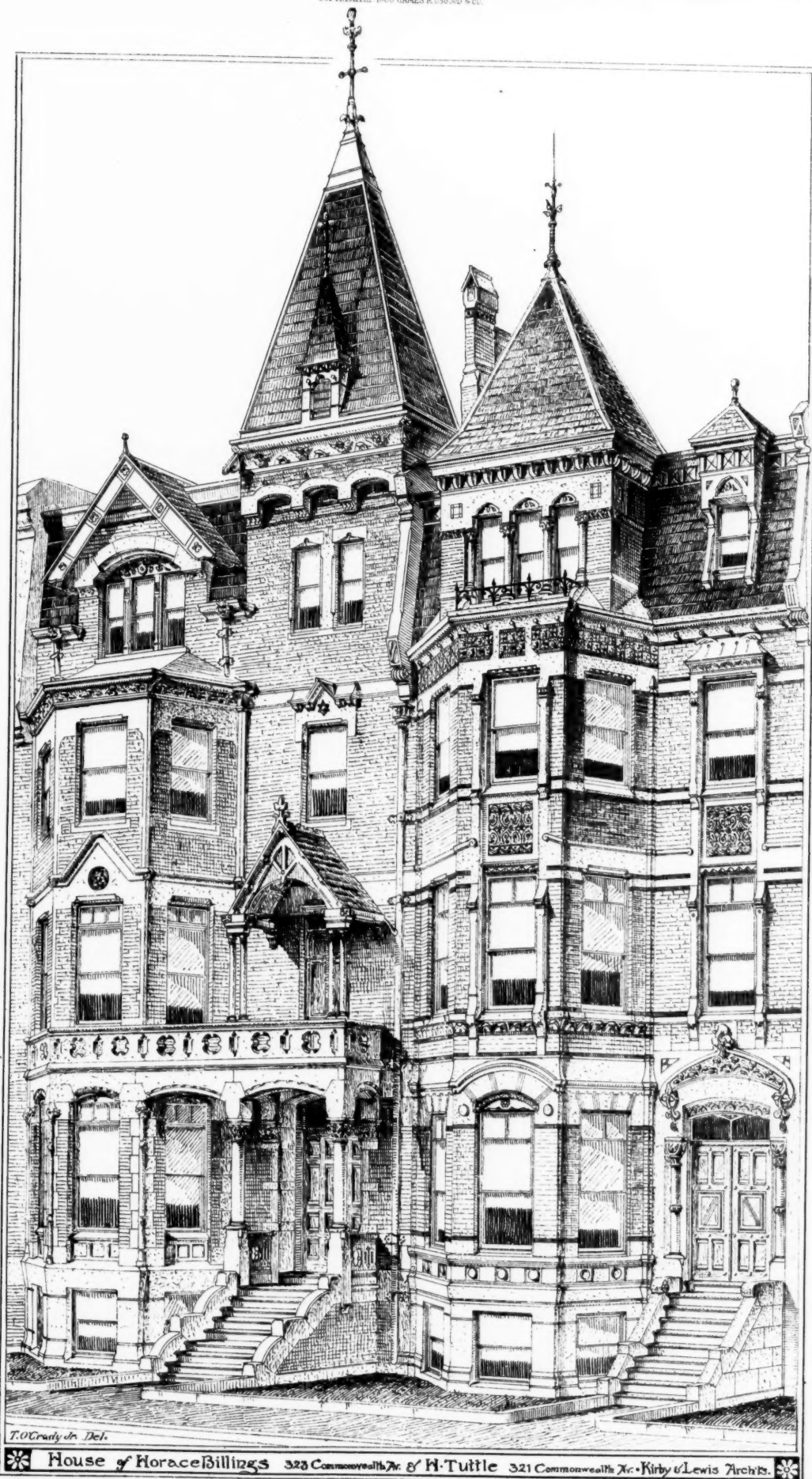
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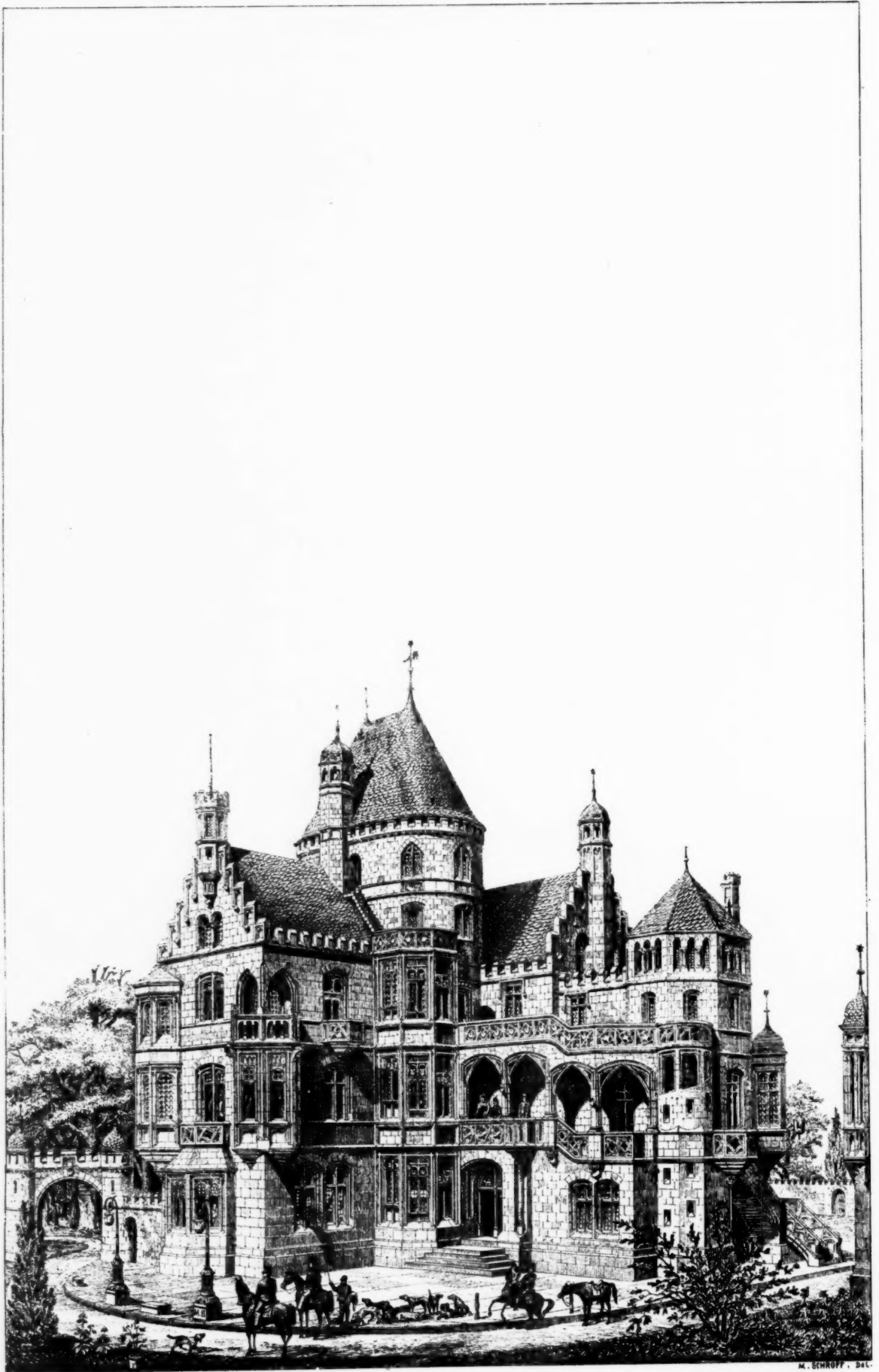
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T. O. Crady del.

House of Horace Billings 323 Commonwealth St. & H. Tuttle 321 Commonwealth St. Kirby & Lewis Archts.

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The Helms - Project on 211 Thruway St. N. Y.

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