

THE AMERICAN ARCHITECT AND BUILDING NEWS

ADVERTISERS' TRADE SUPPLEMENT.

No. 1.]

SATURDAY, FEBRUARY 4, 1882.

MODERN HOUSE PAINTING.

In the *American Architect* for Oct. 22, 1881, "Rectus" has struck the key-note of this subject; those who have eyes for color can unite in sympathy with him. Nature, in her varied forms, displays natural beauties which such persons readily distinguish, while many others are blind to any object but a white or drab-colored house.

I am delighted that somebody has had the courage to depart from the old and stereotyped fashion of painting houses outside. Brilliant and harmonious colors for the ornamentation of our dwellings outside are not out of character, so long as they add beauty to the landscape, and serve to cultivate good taste; but difficulties lie in the way which may not be recognized by the artist who has not had the experience of exposing his pictures to the weather for any considerable time. 'Tis the scorching rays of the summer sun that tells upon paint to a much greater degree than storms. And while the bleaching process is going on in this, it is not as noticeable as it would be in darker tints. Since, in order to avoid this, and to keep alive the interest in fancy colors, a new system of painting must be had; for by the old these colors are sure to bleach if not to fade, and it lies in the power of architects to correct it if they choose to do so.

Having thoroughly examined the subject, and proved by actual test, I am prepared to give valuable information in regard to it.

By the ordinary method now and for many years past in general use the best white lead known, will, if exposed to the weather two years or even in a less time, begin to shed or rub off at the touch. And if tinted with the most permanent colors, will fade or bleach. Now this may not be the fault of either the architect or the painter, because ignorance may be the excuse, but when once informed how to prevent it, then it becomes neglect, — if the proprietor is willing to pay for a good job.

There are two ways by which this may be accomplished. One is a tedious process, the other much shorter and cheaper, so far as labor is concerned. By the former it would require the application of six coats of clear linseed oil to the wood in order to fill the pores before painting, and to lay a foundation to support the pigment; but a new process far better, has been discovered by Mr. Asahel Wheeler of Boston.

What the builders have rejected for all time past, has become the head of the corner, so to speak. It is the old fattened linseed oil, that under his manipulation is made to serve a better purpose than anything else for outside-painting. He prepares it, and has christened

it with a new name — the "Paint Preserver."

The process of using it is as follows: Upon new wood a coat of it is applied clear; for the second coat, a small proportion of paint is added to it; the third coat is made flat by oil and turpentine mixed with the paint, and the fourth and last coat is one part mixed paint to one part "Preserver," which leaves it with a beautiful gloss that will not blister, crack, or bleach.

I am aware that architects object to glossy paint, but the gloss will disappear in the course of one year and leave the paint and color permanent; but without it such a condition is utterly impossible. And, furthermore, when this paint becomes dirty and dingy it can be washed like a carriage body and it will then look fresh and new; the colors unchanged if care be taken in the selection of permanent tints in the beginning.

Some of the colors which can be relied upon as permanent, if used by the new method in painting, are Blue Black, Raw Turkey Umber, Raw Italian Sienna, Italian Vandyke Brown, Oxford Stone Yellow, Green Ochre, Ultramarine Yellow, Ultramarine Blue, Cobalt Blue, even if used with white lead. But no calcined color, like Burnt Sienna, Burnt Umber, Burnt Ochre, etc., should be trusted, for they will surely fade in lead. There are numerous colors which may be used in a pure state that will not fade under the new system, which include all of those above-mentioned and the Chrome Yellows, Chrome Greens, Gold Ochre, Bronze Green, Indian and Tuscan Reds. Of the Vermillions, the American is the most permanent and the cheapest, which in a southern and westerly exposure does change some, but not where the sun does not shine all day.

Varnish or Japan should not be used in paint for the outside; the only safe skin is what is known as the Siccocast.

It may be profitable to mention the virtues of the different blacks called for in painting. Ivory Black is quite frequently used, and when mixed with white lead is sure to fade very badly. Lampblack has the fault of spotting, but pure Blue Black which is made of the lees of the wine-vat, never fades; besides, when mixed with white lead or zinc, it makes the finest neutral tint of all the blacks.

ASAHEL WHEELER,
145 MILK STREET, BOSTON.

FIRE ON THE HEARTH.

THE Open-Stove Ventilating Company, of New York, has brought out several modifications of their celebrated Fire-on-the-Hearth Stove, intended especially for use in mantel openings, — viz.: "Air Warming Grates" of

different sizes for warming and ventilating connecting rooms, such as French flats, double-parlors, etc. "Fire-on-the-Hearth Heater," for conveying warm air to upper rooms, while heating below.

The grates and heaters are, in fact, open-fire furnaces, giving the sanitary advantages and cheerful appearance of one with the increased power and economy of the other.

The Air-Warming Grates for rooms on one floor require no smoke-pipe or hot-air flue, the brick flue common to all fire-places serving for both smoke-pipe and ventilating flue. They are usually set without change of brick-work, and can be, if necessary, transferred to other quarters as easily as any ordinary stove. They are very handsome and convenient; keep fires continuously; burn either hard or soft coal, or wood, and can be ornamented with nickel or brass to suit taste.

OPEN STOVE VENTILATING CO.,
78 BERKMAN STREET, NEW YORK.

TILES.

SINCE the establishment of this house in 1868, many works of magnitude and importance have been successfully carried out under the best known architects of the West.

The experience gained in many years of application to the business, enables me to guarantee the best workmanship, the first quality of material, and promptness in executing contracts.

My stock is a choice selection of the better class of goods, made by Minton, Hollins & Company, Minton's Chicago Works, and other prominent English manufacturers, and the Low (Chelsea, Mass.) Art Tiles. In grates, etc., I supply only the best-made goods, and have many original designs in frames, fenders, fire-sets, etc., not found elsewhere.

I employ only the highest skilled labor, and keep a large force of men during the entire year, thus being enabled to execute contracts quickly and satisfactorily.

My facilities for filling orders are unexcelled, and I am prepared to make contracts throughout the West and North-west, on the most favorable terms.

Among the recent work done by me, I will mention the Chicago Club House; the Illinois State House; Treasurers' and Auditors' offices; Grand Opera House, Chicago; Grand Opera House, St. Louis; Haverly's Theatre; American Express Office; John Whitaker's residence, St. Louis; W. T. Baker's residence, Chicago; W. H. Metcalf's residence, Milwaukee, and numerous other public and private edifices.

CHARLES L. PAGE,
337 WABASH AVENUE, CHICAGO.

The American Architect and Building News.

PUBLISHED EVERY SATURDAY BY

JAMES R. OSGOOD & COMPANY,
211 TREMONT STREET, BOSTON, MASS.

*An illustrated Journal of Constructive and Decorative
Art, devoted to the Interests of Architects,
Builders, Decorators, etc.*

15 cents per copy; \$7.50 per year; \$6.00 in advance;
12 Monthly Numbers with Detail Sheet, \$1.75.

The "Advertisers' Trade Supplement" is main-
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COLORED BRICKS AND TERRA- COTTA.

THE Clark Colored Brick and Terra-Cotta Co., of Glens Falls, N. Y., began operations about two years ago, and are now largely engaged in the manufacture, in both red and buff, of all kinds of plain fronts and moulded bricks, as well as other architectural wares in Terra-Cotta. These have met the approbation of many architects and builders, and large shipments have been made as far south as New Orleans, and west to St. Paul's, Minn., as well as to places nearer. The demand has been so active this year, that they have had to enlarge their premises, and erect drying and moulding houses, which enable them to execute orders promptly winter and summer.

They hold in stock a great variety of moulded brick, and can turn out any shape or design asked for, at reasonable notice, and at considerable reduction in price for similar quality.

No such work as this Company is now so successfully engaged in has heretofore been attempted out of Philadelphia. Their catalogue of designs embraces a great variety of shapes and designs.

THE CLARK COLORED BRICK AND
TERRA-COTTA CO., (LIMITED),
GLENS FALLS, N. Y.

BUILDING AND MONUMENTAL GRANITE.

DURING a few years past the granite industry has developed very rapidly in this country and abroad. By the outlay of large sums of money, quarries producing every shade of color from the standard gray to the beautiful red have been opened. What was a short time ago considered an impossibility, viz.: to architecturally treat this imperishable stone in any other than in the simplest manner, has now become a reality, so that we have granite wrought in almost all the forms of which the softer stones are capable. Even *statuary* in granite now adorns our parks and cemeteries, — a recent achievement. By the application of machinery, polishing has reached its highest effect and is made subservient to decoration. Rough shafts are by huge lathes turned into beautiful polished columns. In our very trying climate these results are of the highest importance. Take the matter of cemetery improvements. It is only a few years since these were mostly in marble, but who has not noticed the advance in appearance that the later use of granite has produced? Marble necessarily discolours, cracks, and wears away under the climatic extremes of our country: so that in the larger cemeteries the officials

are discountenancing its use, and urging the use of granite to replace the decaying monuments, and recommending the future use of granite, whose first cost is comparatively but slightly more than marble.

Architects seem to be recently coming more to the use of granite, and we are having fronts more or less made up of polished and hammered work. We recall this as conspicuous instances of the Sloan Building in New York in its first story, and a frontage of about 70 feet in Leadenhall St., London, made up almost entirely of the red Scotch granite, polished, in which an arched entrance, columns to the cornice, lintels, ashlar, etc., form a magnificent façade at a moderate figure.

While Aberdeen, Scotland, is the acknowledged centre of the granite industry, many sections of our own country are now rivalling it, — producing first-class work.

One of our advertisers, Mr. Henry C. Weeks, imports from the Scotch and all the foreign quarries, and also deals largely in our New England granites. His testimonials from many persons of prominence through the States speak of first-class work at moderate prices.

HENRY C. WEEKS,
54 EAST 23D ST., NEW YORK.

THEATRE-STAGE VENTILATION.

NEW YORK, December 27, 1881.

To the Editors of the *American Architect*:

Gentlemen, — The communication in the *American Architect and Building News*, December 24, from Charles A. Walton, and your remarks thereon in relation to ventilators over theatre stages, attracted our attention from the fact that it is practically the same as one Mr. Wing has claimed and practised for some time, not only for theatres, but for concert rooms, lower floors of large factories, lower floors of tenement-houses, and also for each floor of large stables.

We have no doubt that many buildings could be saved by having a large sheet-iron flue reaching from the point most in danger to and above the roof, thus holding the fire near the base of said flue, and enabling the firemen to work to better advantage, being comparatively free from smoke, steam, etc.; while in theatres, etc., it would give sufficient time for the people to get out, and in stables give time to remove the horses. We would further suggest that a properly arranged damper should be placed in the flue, to close while heating the building; but in theatres, churches, etc., make it obligatory by law, under penalty, to keep the damper open while the audience is assembled. In relation to keeping an active current in the flue — without which it is useless, — the turning of the heated air through ducts in loft from chandelier, etc., we deem objectionable for two reasons: 1st. The entrance of air from these ducts necessarily decreases the capacity of the flue. 2d. The draughts from over chandeliers have a tendency to draw more or less of the smoke and heat into the auditorium.

The ventilating flues over chandeliers, etc., should all have dampers with wire ropes carried to some accessible point, when they can be closed immediately upon appearance of danger, thus throwing the entire draught into the large flue over the stage. The flue must be kept active by fan, steam-coil, or other heat.

We have found the Wing Fan Ventilator a good substitute for the steam fan, placed on top of the flue; a wind-wheel furnishes the power; the action is similar to the steam fan, without the cost of steam for power. These fans are in use on Chickering Hall, Steinway Hall, Dr. Storrs's Church, and other places.

We are authorized by Mr. Wing to pay \$100 to charitable objects if one of these fans fails to make a current or lets down cold draughts in any flue where properly placed. With all outer doors and windows at the stage end of the building closed, with a proper sized flue as suggested over the stage, we believe it a better safeguard than a wire or sheet-iron curtain.

Yours truly,

THE SIMONDS MANUFACTURING CO.,
50 CLIFF STREET, NEW YORK.

FIRE-PROOFING.

HAVING established an office in Chicago for the purpose of the sale of Manufactured Clay Material for building purposes, and being desirous of informing the building profession thereof, we respectfully call the attention of architects, and the building interest generally, to the fact; and take this opportunity to state that we have combined with our manufacturing interests the business of CONTRACTING FOR THE FIRE-PROOFING OF BUILDINGS. We are further pleased to state that we have secured the good will of the firm of Johnson & Co., long established in the business of *Hollow-Tile Construction*, and shall hereafter continue the introduction of Fire-Proof Tile, in all its various improved applications. Combining, as we do, the knowledge and experience of the retired firm with our new and improved facilities for speedy and economical manufacture, we are confident that we shall be enabled to contract for work at prices that will compare favorably with other systems.

We are now reconstructing our works at Ottawa, Ill., with a view to meeting the demands of our increased local trade, and it is our intention to obtain facilities sufficient to enable us to manufacture every form of Clay Material for Constructive Fire-Proofing.

In conclusion, we wish to say that we are now prepared to execute designs, and furnish plans and estimates for every description of Hollow, Solid, and Porous Tile, used for the purpose of fire-proofing buildings, and will take contracts for the erection of the work in any city in the United States.

Soliciting from the profession a share of the trade, we are, respectfully,

THE OTTAWA TILE CO.,
32 METROPOLITAN BLOCK, CHICAGO.

THE GLOBE VENTILATOR AND CHIMNEY CAP.

The Globe Ventilator and Chimney Cap was patented February 29, 1876, and introduced to the trade some six months later. Notwithstanding the brief time that these Ventilators have been in the market, orders for them have been received from every State in the Union, and many places in the Canadas.

The Globe is made in twenty-four sizes, from our model one inch to 48 inches inclusive, presenting a variety of sizes equalled by

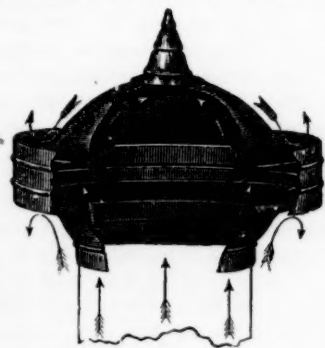
no other manufacturer of ventilators in the world. By this multiplicity of dimensions, we are invariably enabled to give our customers just the size required, and not constrain them, as has often been done in the case of other goods, to purchase a ventilator too small to perform the expected service, or so large, that the money invested is practically thrown away.

Much complaint has been made, and strong objections urged against the ventilation of cars, buildings, etc., on account of the noise made by the ventilators heretofore used. This is an invariable fault where the article employed revolves or moves with the action of the wind. This annoying difficulty is victoriously overcome by the Globe Ventilator, which, being stationary, is noiseless. As the Globe has no movement, it is not subjected to the constant wear on any bearing, and therefore will not get out of order.



The Globe Ventilators are constructed on strictly scientific principles, which were only applied, as at present, after years of labor and painstaking experimental investigation, combining perfect simplicity with the highest efficiency.

The air striking the upper or lower dome from any direction, is deflected by the turned edges, which forms an exhaust in the Ventilator, compelling the air in the pipe to rush towards the head to fill the vacuum. The band not only prevents any current of air from the sides entering the cap, but as it is



raised a short distance above the edge of the upper and lower dome, deflecting it in like manner and producing the same effect. These advantages are very clearly illustrated in our working model, which can be seen with every agent.

The Globe is manufactured from the best brands of iron, and put together in a substantial and workmanlike manner. The upper and lower domes are made by machinery of black iron, and afterwards galvanized, giving a better finish than could otherwise be obtained. The braces are struck up by machin-

ery, and then tinned, and the tips, or ornaments, are of cast-iron, japanned, which prevents all liability of rusting, and are firmly attached by bolts to the upper dome. We have given this detailed description of the Globe to satisfy our customers that our goods are placed in the market with the greatest possible care.

The magnitude of our operations enables us to produce better and cheaper goods, and sell them at a closer margin, than any competing firm, making at the same time reasonable profit, the statement of some of our competitors, that we sell at "ruinous prices to monopolize the trade," to the contrary notwithstanding. Many of the leading railroad companies and larger dealers frankly confess that they can procure our Ventilators, made of galvanized iron, to say nothing of their incomparable working qualities, at a less price than they could manufacture a common cap. As a result, our business is constantly increasing and extending in all directions. The most incredulous may be satisfied of the cheapness of the Globe, by comparing prices with those of other manufacturers, or by making the old style by hand, and keeping account of the time and stock used.

We do not wish to be understood as saying that the Globe is so cheap that it is not durable. Such is not the case. No part of its manufacture is neglected, and it is impossible to use inferior stock, as it would not stand the great pressure required in stamping. Our Globe is manufactured of the best material, and as the braces are re-tinned and the upper and lower sections re-galvanized, a smooth and unbroken surface is obtained, which prevents water from rusting the iron, and gives greater durability. Those acquainted with the working of galvanized iron are familiar with the fact that when a seam is turned, or the iron bent, the galvanized part becomes flaky and chips off, leaving places not galvanized, where snow or water will, in a very short time, rust and destroy the iron. These objections are all overcome in the use of the Globe.

The inquiry has often been propounded to us: Will the Globe Chimney Cap cure every smoky chimney? We frankly reply in the negative. Some chimneys are so dilapidated that nothing short of re-building will lead to satisfactory results, while the walls of others are so exposed that the cool air strikes through; while others are so situated that the air forms an eddy which exerts a stronger downward pressure than the cap can overcome, but such cases can be remedied by extending the pipe above where the eddy occurs. We do claim, however, and most emphatically, too, that the Globe will operate satisfactorily where any other cowl will, and in many cases where every other device utterly fails.

We would call attention to the following fact, which must be observed to produce satisfactory results with the Globe or any Chimney Cap, viz.: The cap must have as great a capacity as the flue upon which it is placed. If the flue is 4" x 12" it cannot be expected that any size of the Globe less than 8 inch will work satisfactorily, as the flue has 48 inches, and the smoke and hot air therein contained cannot find an exit through a cap that has less outlet.

GLOBE VENTILATOR COMPANY,
TROY, N. Y.

LINCRUSTA-WALTON AS A WALL DECORATION.

Decoration in relief has not been always entirely neglected. In a few magnificent mansions, such as the Duke of Devonshire's residence at Chatsworth, remarkable wood-carvings by Grinling Gibbons are preserved, and many bits of curious old English carving are found in ecclesiastical edifices, in the halls of the City Companies, in out-of-the-way nooks in colleges, the Inns of Court, and country houses. Unfortunately, Gibbons carved in very perishable wood, and some of his finest works have been reduced to powder within a hundred and fifty years of the time when they were executed. Had he used a material of which we shall have something to say hereafter, his existing works might have been a far better representation of his genius. In Italy, at the time of the Renaissance, Raphael himself did not disdain to design ornaments for carvers. The celebrated wooden stalls of the choir of San Pietro dei Casinensi, at Perugia, are an example. The name of the artist who executed these admirable compositions is also carefully preserved: it was Stefano da Bergamo. The elder Sansovino, and Donatello, carried ornamental modelling to perfection. In France, Puget and Jean Goujon are famous artists in this style. The carvings which remain of Goujon's Chateau d'Anet, the panelling of the bed-chamber of Diana of Poitiers, the interior decorations of Fontainebleau and Chambord, are among examples of their powers. The German wood-carvers of the fifteenth century — Lucas Moser at Tiefendronn, Schühlein, whose "Descent from the Cross" is found at the same place, and other carvers, the products of whose antique skill are enshrined at Rothenburg, Bamberg (Adam Kraft's magnificent altar-piece here is a little later than the fifteenth century), Nuremberg, Schleswig, Augsburg were among the first to catch the inspiration of the Italian revival of art. Thus, it will have been seen that in the palmy days of artistic excellence, there was great activity in the production of raised mural decoration; but this activity has not endured to our own time.

A new discovery has now, however, been made, which gives to mural work in relief the same facilities for infinite variation and reproduction, which ornament in one plane has hitherto enjoyed. There is no extraordinary difficulty in devising ingenious machinery for stamping a material which is found to be ductile and durable, or in coloring it by hand, or by mechanical means, when stamped. The main fact about the new discovery was the creation of the substance, and this was discovered among a class of new and most valuable products, first devised and successfully worked by Mr. Frederick Walton, the inventor of linoleum. To produce, by stamping, the effect of carving, it was necessary to have a substance which was soft at one period, but became perfectly hard at another. Unless its use was to be confined to ceilings, it must not be brittle. It had to resist the effects of damp, and of alternations of heat and cold. If it were found to be a non-conductor and perfectly impervious to wet so that it supplied to rooms a warm surface, on which the moisture in the air would not readily condense, so much the better. If it was so workable that

the artist could elaborate the stamped ornamentation to any extent by under-cutting or otherwise; so tough that the roughest scrubbing would not affect it; so durable, that disease germs might be washed off it with dilute acid—the original conditions would be over-passed, and a material of the highest and most valuable artistic and hygienic uses would have been found. Briefly, these are the properties of Lincrusta-Walton.

Some years ago, a paper was read before the Society of Arts, by Mr. Frederick Walton, on the "Introduction and use of Elastic Gums and analogous substances," in which, after discussing the sources and qualities of india-rubber and gutta-percha, he described a method which he had invented of manufacturing an artificial product, which should not only possess the principal qualities of caoutchouc, and of the gum of the para tree, but should be cheaper and more widely applicable. The leading feature of the new process was the oxidation and consequent solidification of linseed oil. Linseed, nut, and poppy oils, when spread in a thin layer on a surface of wood or iron, dry or change into a thin skin. This change is produced by the absorption of oxygen and the disengagement of carbonic acid. It is obvious that the solid oil can be obtained in large quantities either by promoting this chemical change by some ingenious admixture of the air with a large body of oil at a time, or by exposing successive films, and then coagulating them together. The property of absorbing oxygen rapidly is inconsiderable in the crude or raw linseed oil, but is very greatly increased by boiling the oil—that is, by exposing a large quantity of raw oil to a strong heat, in a cauldron, with a small percentage of metallic oxide of lead added. It is then called varnish, and has a viscid character like honey. A layer of this oil requires from six to twenty-four hours to change into a skin-like substance, according as the state of the atmosphere is more or less favorable.

The discoverer of oxidized oil, the basis of the great linoleum industry, and of the new linoleum product Lincrusta-Walton, Mr. Frederick Walton, now a Director of the Linoleum Manufacturing Company, the largest floor-cloth company in the world, has seen his invention of linoleum drive its competitors from the field in the space of less than twenty years from the time he first invented it. The manufacture of linoleum has now become an industry of the first rank. For Lincrusta-Walton, the new development of the manufacture, at least as great a future may confidently be predicted. It is a mixture of linseed oil and fibre, rolled onto a fabric. On this material, ornamentation in relief is obtained by machinery with the greatest clearness, beauty, and sharpness of diversified outline. The use of color in addition is optional, and the patterns may, if desired, be tooled after the first stamping. The effect produced is, according to the will of the designer, like that of carved wood, embossed leather, of terra-cotta or plaster ornamentation; or the work may be allowed to assume a character of its own as a most subdued and graceful style of ornamentation.

It is a bold thing to say of a novelty like Lincrusta-Walton, that it is remarkable for durability, but as the product has already

been practically tried in the linoleum manufacture, this assertion is not made without considerable experience. When it is remembered that it consists of a thick fabric of oxidized oil, and that a thin film of oil exposed to the oxygen of the atmosphere has, in the pictures of Van Eyck, or John of Leyden, lasted in perfect preservation for many centuries, the prediction that Lincrusta will likewise remain lasting does not appear unwarranted. Its admirable capacity for resisting blows and abrasions is capable of more evident proof. Pieces can, indeed, be cut off from it with the knife or chisel, and its toughness and freedom from all liability to splinter render it peculiarly suitable for any amount of elaboration and improvement by artists after it has once been stamped. But a blow or cut produces on the elastic surface no lasting impression. If it is struck with the sharp end of a hammer-head, a slight indentation will be at first produced; but in half an hour the elastic substance fills up the gap. This result is secured whether the blow is struck upon the flat ground or upon that portion of the Lincrusta which is raised in relief, and thus the ornamentation, in lieu of being liable to be flattened and chipped off, as the noses of Brunelleschi's angels in wood-carving are, is practically indestructible.

Mr. Ruskin has said that linseed oil is one of the most durable materials supplied by nature, and a life of many hundreds of years—a life practically without limit—may be assigned to Lincrusta. A piece of Lincrusta-Walton has just been taken out of the water after three months' immersion, and it is as perfect and sound as when first put in. Another piece has been used on an outer wall, exposed to the roughest weather, and after twelve months shows no signs of deterioration whatever, and it is confidently anticipated that the new material (upon which any depth of relief can be secured) will have a remarkable career as an exterior decoration. Actual support will not be furnished by Lincrusta, but it will supply a waterproof shield to wood, iron, or other building materials, and afford lasting and beautiful ornament to the structure which it clothes.

For the interior decoration of houses, its warm and comfortable surface makes it peculiarly applicable. It has no glaze to break up and reflect the light with the cold glitter of Dutch tiles, nor does the moisture of the air condense upon its surface, unless water is present in excessive quantities in the atmosphere. It is not warped, cast, eaten by worms, or pulverized like wood. It does not become ice-cold in winter and hot in summer, like stone and terra-cotta. It does not absorb moisture and give it out again, like uncovered brick and plaster. On the contrary, it offers an impermeable resistance to wet from within or without; and if the air within is so dangerously damp as to communicate moisture to the walls, Lincrusta-Walton does not conceal the effect by drinking in the moisture.

The continuity in length of Lincrusta makes it invaluable for dados, and for friezes and mouldings, in lieu of, or beneath, the cornices of plaster-work now so generally employed. As its application will be subsequent to the completion of the building operations, the tenant of a house will be enabled to consult

his own taste, both as to color and form.

The material is flexible, and can be carried round curves and corners, a quality which marks its superiority over papier-mâché and carton-pierre. Some of the finest examples of modern carving have been executed at great expense for ocean-going steamships, including the luxurious vessels of the Atlantic lines. The lightness and water-proof character of the new material renders it peculiarly adaptable for use in steamships' saloons, as well as in pleasure yachts. No racking or straining of the ship would crack it. It gives a warmth, dryness, and comfort not readily obtained on ship-board, and the rough and wholesome scrubbing to which cabin walls are periodically subjected on a well-conducted passenger ship will always leave its surface uninjured. The same great quality of bearing, without harm, the most vigorous assaults of soap and water, or of acid washing solutions, makes Lincrusta an admirable lining for the walls of hospitals and hospital-rooms in large houses. It can be perfectly cleansed, and all the germs of infection removed.

In its original color as manufactured, Lincrusta has a soft and pleasing neutral tint. In coloring it, the raised portions should be picked out in brighter tints, the lower portion remaining more sombre in hue. Mr. Walton has invented machinery for coloring it, by which a soft gradation of color, quite unlike block-printing, can be obtained. Lincrusta-Walton may, however, be colored after being applied to the wall or screen which it is destined to ornament. The coloring would then be done by hand. The form being already given by the relief, the process of applying the color may be compared with that of filling Berlin wool into a marked canvas, but does, in fact, afford scope for the exercise of much greater skill and judgment. The coloring may also be applied to Lincrusta while it is still detached from the wall or furniture.

Lincrusta-Walton is easily fixed. The ordinary method is to hang it at the top by small brass gimp pins, and then to attach every portion of it to the wall by ordinary paper-hanger's glue and paste, made with as little water as possible. It will be found much easier to hang than flock paper, as there is no danger of tearing it, and should it be soiled in the operation, a little soap and water will quickly cleanse it of any stain. Where there is reason to expect much damp, a special water-proof coating is used.

Lincrusta may be removed and transferred to another house, a quality in which it differs in a valuable and sometimes very essential degree from wood-carvings, which, under some circumstances, after being executed with great expense by or for the tenant, remain the property of the landlord.

LINCRUSTA-WALTON,
41 UNION SQUARE, NEW YORK.

THE *Congregationalist* has the following notice of this journal: "The American Architect and Building News is a weekly journal which must be of the utmost value to all directly concerned with building and kindred matters. Yet its interest is by no means limited to them. Though but a layman in such things we find ourselves taking real and increasing enjoyment in examining its pages. Its illustrations are practical and admirable. All persons who are proposing to build houses will do well to consult it for a while, and its regular subscribers certainly are treated to some charming pictures, as well as furnished with much vastly useful knowledge."

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XI.

Copyright, 1882, JAMES R. OSGOOD & Co.

No. 320.

FEBRUARY 11, 1882.

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

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IN another column will be found a copy of a circular issued by the Journeymen Stone-Cutters' Association of New York, with some comments of a number of architects of that city upon it. The language of the circular is not very clear, but we think we can infer from the first part that no member of the Association is to be allowed henceforth to make small contracts on his own account; and that no member is to be permitted to work on any job upon which other men who violate the rules of the Association, or who are "not in communion" with it are employed. The last clause, which reads, "Neither will it" (the Association) "allow the separation of carving from stone-cutting," presents more difficulty to our mind. At first sight it reads like an abstract proposition in art, referring to the lamentable discord which is too often observed at the present day between the characteristic quality and texture of hard materials and the forms which they are compelled to assume; but the New York architects appear to interpret it very differently, and to regard it as a declaration, not of high artistic aims on the part of the members of the Association, but of a determination to force themselves into a business for which they are daily growing less fit, and not only to prevent the exercise of any choice by architects or others in favor of particular stone-carvers, but so far as appears, in favor of stone-carvers in general, for decorating the buildings which they pay for, as distinguished from those worthy individuals whom the Association may designate for that office.

IF it were not for some previous knowledge of the antics of the New York Stone-Cutters' Association, such an explanation as this of the meaning of its circular would appear to us incredible. The first part, it is true, is a simple reiteration of the fixed principle of the Union, to destroy all ambition on the part of its members, and to drive out of the trade all men too intelligent to be the dupes, or too independent to be the slaves of the organized folly of their meaner comrades; but an announcement such as is thought to be made in the latter portion of the document, on the part of a body which conceives of special industry, application, prudence and skill only as qualities to be promptly and ruthlessly stamped out of existence, that henceforth the rest of mankind shall have no option of its own as to whether its buildings shall be beautified by the hands of free artists, or disfigured by the botching of an abject Unionist, seems too preposterous to have been made in earnest. That it can ever be carried into effect is impossible. We know the harsh discipline by which the members of the Association are kept in subjection, and the delays and annoyances which its malice can inflict upon those who presume to resist its exactions; but if the circumstances are once understood, and the contest between the will of the building public and that of the Union openly entered upon, the result cannot be doubtful. In this contest the architects must of necessity take a part. As the heads of the building world, they are compelled to consider all circumstances affecting the operations under their control, while

in measures for accommodating the interests of the several trades, and in questions between them and the public, their opinion has, and should have, the highest authority. For this reason we would have them refrain from hasty expression or action, but in case of need, their decision should be prompt and unanimous, and their action well-considered, concerted and effectual.

IN order to prevent the setting of railway-cars on fire after collisions, several expedients have already been suggested for isolating the heating apparatus from the wood-work, and some of them are likely to be adopted. The simplest arrangement appears to consist in enclosing the stove within a casing of stout sheet-iron, and this, as the cheapest expedient, will probably prove the most popular among railroad managers. To be of any real use, however, such a casing ought to be double, an air-space of at least half an inch intervening between the outer and inner sheets. Without this precaution a mass of red-hot coals, suddenly precipitated after an accident upon whichever side of the car happened to be lowest, would quickly heat through the thin metal and set fire to the wood-work behind it; and even with it there is at least a chance that the casing may be ruptured by the shock of a collision, allowing its incendiary contents to escape. Another measure which has been seriously advocated is the introduction of large vessels, containing a warm saturated solution of some salt of soda, instead of stoves. Several of these salts, as the sulphate and acetate, evolve a considerable amount of heat on crystallizing, and if a solution, saturated at a high temperature, is placed in the car while warm, it will continue to give out a gentle heat until the crystallization is complete. Metallic reservoirs so filled have been successfully employed in France for diffusing warmth through the small and tightly closed compartments of the railway-carriages in use there, but for our long, open cars, with doors at each end, through which a violent gust of freezing air rushes in upon the entrance or exit of every passenger, the warmth evolved by chemical solutions would be very inadequate.

A better plan is that which proposes the heating of the train by steam from the boiler of the locomotive. With radiators in each car, and flexible connections like those in use for air and vacuum brakes, there is no great difficulty in obtaining any degree of warmth desired, if steam can be had to supply them, and it is thought that this is generally the case. It is found necessary in locomotives to maintain a high pressure of steam in all parts of the machinery while moving, and the exhaust steam is under great tension, but beyond doing something to help the draught of the chimney by a few puffs at starting, is simply wasted into the air, while every stop is marked by a great increase of boiler pressure, followed by the bursting open of the safety-valve, and the issuing of additional clouds of vapor. If some of this superfluous energy could be utilized to warm the trains, so great an economy in running expenses would probably be realized that railway directors might well afford to introduce the necessary appliances, while the passengers would be relieved from one of their greatest dangers, enjoying moreover at the same time a warmth far pleasanter and more healthful than that derived from the stoves now in common use.

AT Hooley's Theatre, in Chicago, an experiment was made the other day to determine the efficacy of ventilators over the stage for keeping the flames of a conflagration behind the proscenium arch from issuing into the auditorium. In the presence of several fire engineers, members of city committees and others, half-a-dozen stoves, filled with rags dipped in turpentine, wet shavings and other combustibles, were lighted, and allowed to burn for several minutes. When the stage was well filled with smoke, a ventilator, formed by a round shaft, eight feet in diameter, and carried up twenty feet above the roof, was opened by pulling the wire rope which controlled a valve in it, and in less than a minute the smoke was completely cleared away. The curtain separating the stage from the auditorium was partly lowered during the trial, which certainly affords evidence of the value of such an arrangement in protecting the audience in case of a fire on the stage. To give assurance of effective operation in case of actual need, the experiment ought, however, to be repeated while the gas is lighted all through the house,

and the regular ventilating apparatus of that portion in full operation. With anything like the thorough ventilation now usual in the best theatres, the upward draught from the space in front of the curtain would during a performance be very powerful, enough so perhaps to counteract, or even reverse, the current through the stage ventilator. This would, if once ascertained, be easily remedied; perhaps by the device suggested some time ago, of having the air-currents from all parts of the house drawn toward the stage, to issue together from the ventilator over it.

THE *Deutsche Bauzeitung* gives the best description of the various forms of electrical accumulator now in use which we have seen, and a brief abstract of it may be interesting to our readers. Every one knows that the accumulators, or secondary batteries, are very different in character from the ordinary voltaic cell, and serve only to collect the current generated either by a voltaic battery or a magneto-electric machine, and preserve it for subsequent use as required. It has long been known that if a pair of platinum plates, immersed in acidulated water, were connected with the wire from a battery, they became charged with electricity which, on the removal of the plates from the acid liquid, became, so to speak, latent, but could again be revived and communicated to other conductors on a second immersion. Some years ago Planté changed the form and much increased the power of this secondary battery, by substituting lead for platinum, and greatly extending the metallic surface, winding the two plates, separated from each other by means of rubber bands, into a spiral coil. This coil is placed in a cell filled to the brim with a mixture of one part of sulphuric acid to six parts of water. On connection being made with a voltaic battery, one of the plates is oxidized by the action of the free acid present, becoming covered with hyperoxide of lead, while the other simply decomposes the water, separating bubbles of hydrogen. When the battery is disconnected, a reverse series of reactions takes place on the surface of the plates, the coating of hyperoxide being reduced to metallic lead, which is deposited in a spongy condition, while an amount of electricity is generated equivalent to the original charge. By repeated charges and discharges, transposing the electrodes occasionally, the surface of both plates is brought to a spongy condition, which greatly increases their capacity for electrical storage.

THE time and expense necessary for converting the surface of Planté's plates into a lead sponge is now saved by the discovery of Faure, that a coating of ordinary red lead spread over the plates answered the same purpose even better than the spongy surface. Instead of the long, coiled sheets, the Faure accumulator employs pairs of plates, separated by strips of felt, and connected throughout the series as in an intensity battery, the negatives with negatives, and positives with positives. Each plate is well coated with red lead, and where great power is needed, the surface is increased by coiling as in Planté's original apparatus. To charge the accumulator, it is placed in acidulated water and connected with an electric current from any source. The red lead on the positive electrodes absorbs oxygen, and is converted into hyperoxide of lead, while that on the negative electrodes is reduced to metallic lead in the spongy form. When all the red lead is converted, the battery is fully charged. In discharging it again the hyperoxide is reduced, and the spongy lead oxidized, until all the accumulated electricity is given up, when the apparatus is ready for a second operation. In this way an amount of energy equivalent to the work of one horse for an hour can be stored in a Faure accumulator of seventy-five kilogrammes weight.

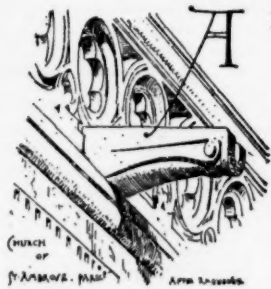
A CURIOUS table is given in several of the daily journals, showing the relative condition of the large cities of the United States in regard to wind. The towns near the great lakes have the reputation of being the windiest in the country, but the statistics show that although certain winds may be exceptionally violent there, some of the sea-coast towns fall little behind them. The comparison is made between the aggregate length, so to speak, of the atmospheric currents from all directions passing over each place in a year. Milwaukee, Wisconsin, stands at the head of the list, enjoying more than ninety thousand miles of wind every year; New York comes next, with eighty-nine thousand, and Galveston, Texas, is the third, while San Francisco with its regular sea-breezes, gains the fourth place. The

quietest atmosphere belongs to Augusta, Georgia, which has only thirty-six thousand miles of wind in twelve months, but Nashville, Tennessee, gives very nearly the same result. The Southern cities, as a rule, have a more placid atmosphere than those in the North, the principal exception, Galveston, perhaps owing its unusual windiness to its situation between the warm waters of the Gulf of Mexico and the high plateau which forms the main portion of the State of Texas. Philadelphia appears to have very nearly the same amount of wind in the year as New York, but the record is incomplete. We do not know whether similar statistics have ever been collected in regard to the European cities, but the probability is that our own far surpass those on the other side of the Atlantic in violence of atmospheric disturbances. For our own part, we have often wondered how long such thatched roofs as are common all over England and the Continent would stay in place on a cottage in a Western prairie; and our builders, who find it necessary to anchor their wooden buildings to the ground with great care, while in process of construction, lest they should miss them on the morning after a breezy night, would, we imagine, decline to guarantee for any long period the sufficiency of a Swiss roof, with its covering of huge shingles held down, not by nails, but by their own weight, assisted by the pressure of a few long poles laid across every eighth or tenth row, and weighted with a stone at each end.

AN extraordinary proposition, made a few-years ago by Professor Shaler of Harvard University, has been recently revived, and is now under discussion in the newspapers. It is well known that the climate of certain parts, and perhaps of the whole of the northern portion of America, has changed within a few centuries, the winters growing colder year by year. In Greenland are still to be seen the ruins of a settlement which in the twelfth century was sufficiently large and prosperous to be made an episcopal see, where now no such settlement would be possible; and the very name of the country indicates that it once possessed a climate very different from that which at present characterizes it. The reason of this change Professor Shaler believes to be the gradual rising of the land at the mouth of Behring's Straits, by which the warm Japanese current, which formerly, following a course very similar to that pursued by the Gulf Stream, penetrated the Arctic Ocean, and tempered with its warmth the seasons upon the whole northern coast of the continent, has been interrupted, and turned toward the shores of California and Oregon. The gradual upheaval of the surface in this region has now ceased, to be followed probably by an equally gradual subsidence, which may restore to the frozen regions of the north their ancient climate, but Professor Shaler thinks that this effect may be artificially hastened by means quite within the reach of human enterprise.

THE narrowest part of Behring's Strait is thirty-six miles wide, with a depth of thirty or forty fathoms, but is obstructed by three small islands in the middle of the channel. After the experience already gained by our engineers, the removal of these islands, and perhaps of the rocks and reefs along the shore which offer most impediment to the current, would be a task of no very great difficulty, and considering the advantage which Professor Shaler thinks would be derived from it, not of extravagant cost. To use his words, if the civilized nations of the earth would unite in giving to the work the money, men, and energy which they now employ in keeping themselves ready to fight each other, with the means placed at their command by modern science they could make an artificial channel, which would let enough of the Japanese current through to melt the ice of the polar seas, and reclaim a vast empire for civilization. By the same means the climate of all North America would be changed. The Arctic winds of winter, which keep British America for the most part an uninhabitable waste, while they annually destroy millions of dollars worth of property as far south as the Gulf of Mexico, would cease, while the violent heat of our summers would be greatly tempered. Even those European nations who have no territory in the Western Continent might contribute to the cost, for the sake of the open northwest passage to Asia which the change of climate would give, while Great Britain, Russia and the United States, which now own the territory bordering on the Straits, could well afford to expend great efforts to complete a work, which, if what Mr. Shaler tells us is true, would in the end be so profitable.

SANFORD ROBINSON GIFFORD.



AN admirable custom, surely, is that of exhibiting as soon as possible after an artist's death a representative collection of his works. Such an act is a duty incumbent upon the guardians of the art-interests of the public no less than upon the painter's friends. Much harm may be done the latter's memory by the mere exhibition and sale of such pictures as happened to be in his studio at the time of his demise—many of them incomplete, and some of them, very likely, pictures that had not found much favor in his eyes. It is well that such works should be supplemented by important examples borrowed from their owners, and, if possible, chronologically arranged. It might pass into an axiom, that paintings never show to such disadvantage, never reveal so little of their individual kind of charm and merit, as when hanging on the motley walls of a general exhibition, side by side with others the most diverse and nullifying. But it is as certain, on the other hand, that pictures worthy of the name gain immensely in force and clearness of meaning when shown in company with sister works. Even life-long comrades of the artist, even his most careful critics, will find under such circumstances much that is new to them in the shape of individual pictures, and much, very often, that is new in the way of general ideas as to the artist's aim and scope and true position. How much more, then, will the public be enlightened,—the public which is apt to hold such very vague ideas with regard to the attributes of even the most familiar names?

We were all indebted, therefore, to the friends of the late Mr. Gifford and to the trustees of the New York Metropolitan Museum for exhibiting, soon after his death, a large collection of his works. He died in August, 1880. The exhibition was opened in the following October, and continued until April, 1881, when such of the pictures and studies as were the property of the artist's estate were sold at auction. The sale occupied four evenings, and proved the high esteem in which Mr. Gifford is still held by the community in spite of the fact that his work represents an almost outgrown phase of American art,—a phase that is being rapidly succeeded by a development alien in aim and method to its own.

Aside from the pictures that were the property of the estate, there were on exhibition at the Museum fifty-seven works loaned by their respective owners, and comprising, of course, many of the most notable in the room. The total list ran up to 160 numbers, the canvases entirely filling one of the west picture galleries. To further facilitate our knowledge of his work, moreover, the Museum issued a memorial pamphlet, containing a sketch of Mr. Gifford's life and a criticism upon his art, written by Professor Weir, and a long and laboriously annotated catalogue of as many of his pictures as could be traced or recollected. When I say that we were given the titles of 731 works, with their approximate dates, their dimensions, and, very often, the names of their successive owners, I bear testimony to the immense productiveness of the artist, and no less to the affectionate industry of Mr. Waldo Pratt, of the Metropolitan Museum, upon whom fell the chief labor of cataloguing. From this pamphlet I have gathered the following details with reference to Mr. Gifford's life.

Sanford Robinson Gifford was born in 1823 at Greenfield, Saratoga County, New York, but passed most of his childhood at Hudson. In 1842 he went to Brown University, staying there only two years, however, in his anxiety to devote himself entirely to the study of art. In 1844 he went to New York for the best instruction then to be had in this country. His first intention was to be a portrait painter, and with this end in view he studied drawing, perspective, and anatomy. In 1845, however, he made landscape art his principal aim, and to this branch he continued to devote himself through life. In 1851 he was elected Associate of the National Academy of Design, after having exhibited upon its walls for five years; and in 1854 he became a full Academician. The time between May, 1855, and September, 1857, he spent in Europe, chiefly in travelling and in sketching from nature. From the last-named date until his death, he occupied the same studio in the Tenth Street Building, New York, and came to be looked upon, by painters and laymen alike, as one of the chief landmarks in the artistic life of the city. Here he worked with the greatest industry, as the long list of his pictures amply proves, though with absences from home of shorter or longer duration. Three times he went to the front when the New York "Seventh" was ordered out during the civil war, and some of his most popular pictures have been reminiscences of those camping days. In 1868 he made another trip to Europe and the East—to Italy, Greece, Syria, Egypt, and Turkey. In 1870 he visited the western portions of our own continent, going even to the remote shores of the Alaskan territory. In 1874 we hear of another westward trip, this time to the Great Lakes. Next in strength to Mr. Gifford's love of painting, is said to have been his love of fishing. But the summers spent in the wilderness for the sake of the gentle sport were utilized, we may suppose, in the interests of art as well. For even when they produced few actual studies, they must have fostered that intense love of nature which was Mr. Gifford's most marked

characteristic as a painter. In 1877 Mr. Gifford married. On the 29th of August, 1880, he died of malarial fever and pneumonia after a fruitless trip to the Lake Superior region in search of restoration.

It was not my good fortune to know Mr. Gifford personally. But in his case one does not need personal knowledge to enable one to speak with assurance of his admirable character and of the singular charm he exercised over all those with whom he came in contact. The universal expression of sorrow when his death was made known, the universal chorus of praise, without one dissenting syllable, which followed, were remarked upon by all who listened; he seemed to have been not only publicly admired as an artist but publicly beloved as a man. Even critics who felt small sympathy with his work and who must have been tempted to criticise it when death had made prominent his name, seemed to refrain from an expression of their views—not from a weak desire to fall in with popular opinions on the subject, but from a natural wish to speak nothing but praise of the dead in the presence of his mourners. And the whole city mourned for Mr. Gifford. It is because this was the case,—because in spite of Mr. Gifford's wide reputation and his prominent place among our elder artists, scarcely anything was written about him immediately after his decease—that it has seemed worth while to make a brief analysis of his work at this present moment, now when the emotion caused among his very wide circle of friends by that decease has lost its first sensitiveness, and when his pictures have finally been scattered, after affording full opportunity for impartial judgment.¹

Criticism passed upon Mr. Gifford's art by those in sympathy with our more recent developments will not, of course, be so laudatory as that pronounced by the generation which made his fame. Every observer will agree, however, that his generation was right at least in so far as it accorded him a very high rank among his fellow laborers. Kensett and Gifford must be said, I think, to hold the foremost place among their co-workers in landscape art. Thus considered, Mr. Gifford's work must always be highly prized for its historical value, as standing between the work of his predecessors—such as Cole and Durand—who founded our landscape practice, and the quite alien art of the men who are now following in his steps. But apart from all such value as this, apart from their representative worth and interest, so to speak, his pictures have a distinct artistic value of their own, a value that has certainly been over-estimated in the past, but that is likely to be under-estimated just now in our eager sympathy with other styles of work. Taking his pictures as a whole, and excluding some few exceptional works which will be noted later on, I may say at once that the chief artistic interest to be found in them is potential rather than actual,—proves that under different circumstances Mr. Gifford might have been a capital painter, rather than that under actual circumstances he showed himself as such.

The chief aim of Mr. Gifford's art is to give a record of certain natural aspects. He portrayed to the best of his ability; he did not translate or paraphrase. It is needless to say that in so doing he was in accord with the mass of his contemporaries. Some observers, it is true, trace a very strong personal accent in his pictures; but upon analysis it will be found to lie, I think, entirely in their evidence as to what were the aspects of nature that were most attractive to his mind, and in the fact that these aspects were a little different from those usually attempted by his fellow laborers. But such testimony as this, however clear it may be, is a very different thing from the presence in pictorial art of an individual mood or sentiment, of a way of seeing and feeling the general facts of nature that is peculiar to the artist, that never quite deserts him no matter what the subject he portrays, and that cannot be imitated by another brush.

The natural aspects that most appealed to Mr. Gifford were aspects of vivid color such as he found in Venetian views and in autumn scenery, and aspects of intense light, often streaming from a visible luminary. Such themes as these are among the hardest of all to treat in art. It is very evident, however, that Mr. Gifford was attracted to them solely by their surpassing beauty, and not at all because they happened to be difficult. An artist of great technical ability, an artist filled with the desire to experiment upon the latent possibilities of pictorial representation, may delight in difficult problems for their difficulties' sake. But Mr. Gifford's way of painting shows most clearly that this could never have been his attitude toward his work. His art is very simple, very frank, very self-forgetful and unpretentious. It is so self-forgetful, indeed, that it is often most naive in its attempts to deal with themes it cannot master. No man's work gives surer proof that he painted things because he loved them *as such*—which is very different from loving them in proportion as they are fit subjects for one's art. Every artist born must of necessity be touched and thrilled by all natural beauty of whatever sort. But whereas one will consider first and chiefly the title of a given scene to love and admiration, another will consider first and always its capability to serve his own artistic purpose. It is a theory of many critics, of course, that an artist should love nature best and with reverential deference, and should esteem his art but in the second place,—as the handmaid with whose aid he is to copy nature as truthfully and entirely—and I may say indiscriminately—as he can. But I cannot think this is the principle that has been followed by the greatest artists in any age—by the old Dutch landscape painters, by the modern French school and its many offshoots,

¹ This paper, which was written for and would have been published in the *American Art Review* but for the untimely demise of that journal, has been recast for our own columns.

or (Mr. Ruskin notwithstanding,) by Mr. Turner and his contemporaries. It is evident, I think, when we look at the works of any of these painters, that *their art* has been the first consideration with them; that they have not painted a picture in order to register natural facts, no matter of what beauty or what grandeur, but have chosen certain natural aspects because out of them they could make a beautiful and thoroughly successful picture. They have done exactly what Mr. Ruskin tells us an artist should *not* do — they have "sought to paint fair pictures rather than represent stern facts." If we return to Mr. Gifford, now, we shall find a painter with whom nature is indeed the first consideration, who has such an eager desire to paint, not "stern facts" exactly, but complicated and gorgeous and almost unpaintable facts, that often he does not seem to have reflected whether by so doing he could produce pictures as well expressed, as complete, and therefore as good artistically, as though his subject and his aim were of a different sort. Carried away by his enthusiasm for vivid color and intense light he essays problems that a Turner might have shunned; that a Turner would certainly have modified in some way had they come beneath his brush. His most frequent, and most popular works are views of Venice in her most brilliant moods, and American landscapes in their autumn colors — than which no scenes could be harder to put on canvas. Yet while we are convinced that Mr. Gifford did not always realize very clearly the entire difficulty of such tasks, we cannot deny, that, the tasks once set, he had no inconsiderable degree of artistic judgment as to the way in which they should be met. He saw the true method of dealing with such things — and indeed, with all things — in landscape art, the method of adopting an all-pervading key of light and color, thus securing a coherence of tone, and, consequently, a unity of pictorial effect. That this necessity was not perceived by all his contemporaries is demonstrated by a recollection of their works — or by a sight of such pictures, for example, as Mr. Cropsey still exhibits from year to year. In a room at the Metropolitan Museum next to that in which the Gifford pictures were displayed, hung at the same time a view of Venice, painted a dozen years ago by an American artist, who now works in a different vein and in a far superior manner. It would be unfair to criticize more definitely an early work long since surpassed. But I may say that the picture was very useful where it hung; for a glance at its jumbled tones and colors, at its reckless want of composition, at its lack of a dominant pictorial idea of any sort, made us realize how right had been Mr. Gifford's instincts. But a standard of another sort was afforded by the presence in the same room of still another view of Venice — this time from the hand of Mr. Bunce, one of the best trained and most competent of our younger workers, and one of those endowed with the richest sense of color. Here we saw in perfect realization the color, the harmony of line, the coherence of tone, the poetry of effect, and the skill of technique toward which Mr. Gifford had so evidently striven, — and we realized that he had not attained them. His striving toward them was a personal and peculiar merit: his failure to attain them was due to causes which affected the whole artistic generation about him. The painter's instinct is born in a man, no doubt, and it was undoubtedly born in Mr. Gifford, but the painter's executive power must be *made* by a long course of laborious study, and this making was never well accomplished in Mr. Gifford's case. This can scarcely be considered strange if we remember when he studied, for how few years and under what disadvantages. We can hardly realize perhaps, how meagre were the facilities for training in the New York of forty years ago, or how low was the standard of technical achievement by which a young painter could measure his own stature. Nor were the more general artistic influences of the time — the current local theories as to the ends and aims of pictorial art — such as to encourage him, if perchance he went abroad, to apply himself to the techniques of his art. Our elder school of painters and of critics accorded no such prime importance (as do we) to the proper management of one's tools. The soul, not the eye and wrist, was thought the principal factor in an artist's equipment, and when that seemed of proper quality, the most rudimentary training in the mechanics, so to speak, of painting was held sufficient. Thus when we hear of Mr. Gifford's years in Europe we are not surprised to find them spent in gathering new ideas as to nature herself, and not in so perfecting his executive power that he might render her most commonplace and most simple aspects in a way that would rank as *art* far above a less perfect treatment of her grandest scenes. To perpetuate the most gorgeous aspects of Venetian seas and skies, the most fiery splendors of sunset and storm-clouds, the most dazzling radiance of summer noons, the most parti-colored blaze of our autumn hill-sides, — this, as I have said, was what Mr. Gifford loved to do. And if his technical ability had been greater he might have done it all with fine success, for his intuitions were unusually good; it is impossible to give an analysis of a painter's method for non-technical readers — or, indeed, for any readers who have not his actual work at hand in illustration. Suffice it here to say that Mr. Gifford had no idea of managing his brush as that work is understood today by every pupil in an art school. I do not say *practised*, naturally, but *understood*. His surfaces are hard, his textures indiscriminated, his composition often panoramic — after the fashion of his day — and his drawings sometimes weak. His treatment of foliage is almost infantile, and we cannot believe that his early studies as a portrait painter were carried very far when we look at the figures he has introduced into some of his

pictures — as, for example, into the well-known Sunday Morning at Camp Cameron. The floods of sunshine that he portrays in many of his works, and their ambitious scheme of color, are not such fine technical realizations as they were once considered. They are at most, it seems to me, but a strong evidence that with better training he might successfully have grappled even exacting themes.

If I have spoken first and in detail about those among Mr. Gifford's pictures which appear to me the least successful, it is because they are the most common, and, as I have said, the most popular representatives of his brush. Looking through the collection at the Museum one found, however, many that were intrinsically much better — not so individual in aim, perhaps, but more complete as works of art; not so grand in their intentions, but more satisfying in their results. A number of hasty outdoor studies, usually of seashore bits, were especially good, broad in handling and agreeable in texture. And the large Parthenon picture, painted shortly before the artist's death, was in many ways a very admirable work. It may be thought strange that I should call it less ambitious than those to which I have previously referred; but in spite of the grandeur suggested by its theme, it was *pictorially* simple. It was simple in composition, in the nature of the materials that composed it, and in its scheme of light and color. The artist himself considered it a representative picture, one by which he was "quite willing to be judged." He was anxious, therefore, that it might pass into the keeping of some public institution. This wish has been gratified, one is glad to learn, the Parthenon having been purchased at the auction last spring for the Corcoran Art Gallery in Washington. It is indisputable, I may repeat, that in preferring this picture to those characterized by more vivid effects of light and color, Mr. Gifford judged very wisely — much more wisely than do most of his admirers. Yet there was one picture in the collection which seemed to me to rank above it; to rank, indeed, much above everything else of his that I have seen. It was different in theme, in composition, and in color, to the rest of Mr. Gifford's works, and in all these points, as well as in technical handling, it seemed to me superior to any. I refer to the Matterhorn at Sunrise, a large square canvas in which the huge snowy peak rises bathed in rosy light, the lower part of the picture being filled with a broad purple shadow cast by some other mountain-top. It was certainly a most beautiful picture, complete and balanced in composition, rich and lovely in color, good in handling, and full of an original and solemn kind of sentiment. I do not know who owns it now, but the possessor may congratulate himself upon having, not only the best of Mr. Gifford's pictures, but one which may hang without detriment in any pictorial comparison. The first study for this work was also shown, and was most interesting, proving how little the artist had departed from his first conception. The principal difference seen in the larger canvas was a lightening of the beautiful purple shadows in the foreground. There was also a third treatment of the same subject exhibited, another study intermediate in size between the first study and the completed picture.

The fact that these two, the best of all Mr. Gifford's pictures, are the latest in date, and that the improvement results from better technical processes, shows that Mr. Gifford, in common with many painters of as long standing as himself, had been touched by the new ideas now stirring in our midst. The nature of these new ideas, the reason why our growing style is so different in aim and in result to the style typified by Mr. Gifford's work, I have implied throughout. I may recapitulate, however, by saying that since the days when Mr. Hunt first preached, with a voice loud enough to command general attention, the gospel of technical training, we have passed largely under the influence of French ideas. Not only have our artists gone abroad in crowds to study, but a hundred foreign pictures are now imported where but one was brought to us some forty years ago. This French influence has worked in two ways. It has made technical excellence a *sine qua non* in our eyes; has shown it to be the only possible basis upon which lasting work can be erected; and it has also implanted in the minds of our artists — the public following slowly in their wake — the belief that I have already indicated, the belief that with a painter the first consideration should be his *art*. This belief means, if I may repeat, that he should paint nature (truthfully, but not necessarily with exactitude of a literal sort) for the sake of the pictures he wishes to create, and should *not* make his pictures for the sole sake of reproducing the nature he admires. This formula, I know, is crudely put, and I know that it is apparently contradicted by the published words of many painters; but a man's theories, often impressed upon his mind from without, are not always in accordance with his practice, and I do not think it is contradicted by the *work* of any good painter whatsoever. This is the principle which must guide a truly successful brush, consciously or unconsciously as the case may be. It is no longer, I believe, an open question whether our art has gained or lost by adopting these ideas. Every observer must have felt, when viewing the collection just described, that our standard of achievement had risen greatly in the past few years. No one could grudge Mr. Gifford the celebrity he attained, for compared with his associates he more than deserved it all. But no one could deny that, were he to begin his career today, and were he to follow it out in the same manner that achieved success a score of years ago, it would be impossible for future critics to rank his name where now it stands — among the very first of his artistic generation in this country. M. G. VAN RENSSLAER.

A TRIP ABROAD—PARIS. IV.



N the evening of August 16 we left Lausanne, and after a comfortable night on the *rapide* arrived at Paris the next day at half-past nine. As the morning broke, we were about passing Dijon, and obtained a glimpse of two slender and well-proportioned spires, probably belonging to the Cathedral. Going from Switzerland to Paris is going architecturally from good and honest construction and decoration to tinsel and glitter. The native buildings of the former country have retained for ages their one form, that appropriate to their use, while those of Paris are a conglomeration of all styles, Gothic, Renaissance, Louis Quatorze, and modern, and the interiors of the majority display a superfluity of ornamentation and of gilding. The lasting impression, after viewing many of the churches and palaces, is that of paint and fresco in contradistinction to wood-work and carving. Brightness and gaiety of effect is generally the result which can be contrasted favorably or unfavorably as one may please with the colder, but I should suppose to the general architectural eye more pleasing, halls and other buildings of England: there may be as great excess in color and gold as in other things. We found very pleasant and quiet quarters at a small hotel named the Prince Albert, on the Rue Hyacinthe, St. Honoré, only a few minutes' walk from the gardens of the Tuileries. I would recommend it for reasonable prices and fairly good breakfasts. Dinner had best be taken at one of the numerous restaurants scattered about; the Etablissements Duval being the cheapest, where an excellent meal, consisting of soup, meat, and one vegetable, desert, and a bottle of wine, can be obtained for about two francs and a half.

One's first walk is generally, I suppose, the one we took along the gardens of the Tuileries and the Champs Elysées to the Arc de Triomphe. At the Place de la Concorde is to be obtained a view giving probably the best idea of the magnificence of Paris. Fronting the burned, but still majestic palace of the Tuileries, you have on your right, across the Pont de la Concorde, the imposing façade of the Corps Legislatif; on your left the Madeleine, visible at the end of the wide Rue Royale, while behind you extends the grand boulevard leading to the Arc de Triomphe, on which and the side streets running therefrom front most of the large compartment houses of the city. The arch lifts itself very beautifully at the head of the avenue, and is a focus-point from which many of the boulevards start. The edifice is in itself very excellent, well-designed, and has on its façades an enormous amount of carving. The view from the top on a fine day is superb. From here by one of the boulevards the most interesting parts of the Bois de Boulogne can soon be reached by pedestrians.

Nôtre Dame is to me the most satisfactory of all the Paris churches. Built at the time when Gothic architecture was in its prime, it shows on both exterior and interior all the fineness of conception and detail that characterized the period. The west portals, with their varied and numerous carvings, are of extreme beauty, while the flanks, with their graceful flying-buttresses and immense length, give the beholder an idea of majesty unsurpassed anywhere. On entering, one's eye is caught by the crossing and blending of the arches of the nave and the four aisles, and the long, enclosed space is apparently increased by the numerous apsidal chapels at the east end, which are only partly hidden by the choir screen and baldachino. The glass in some of the windows, especially the rose of the north transept, is of the finest—if not the very finest—to be found anywhere. On some of the capitals of the choir aisles the undercutting is marvellously well done, the flowers standing on their stems as if they had grown there. In the chapter-house are contained many curious relics, both religious and secular, among others the coronation robe of Napoleon I.

Close behind Nôtre Dame is the Morgue, but certainly no architectural traveller, except one with morbid propensities, can deem it worth a visit.

The Grand Opera House, about which so much has been written and said, is all that is grand and magnificent, until we enter the theatre proper. The vestibule, the grand staircase, the *foyer*, the *salles* of all kinds could not well be more beautiful or more appropriate for their purposes, and when lighted at night the blending of gold, rich paint and hangings, the glitter of the many-colored marbles, and the sparkle of the little lake under the main stairway, compose an entrancing whole; but the theatre itself, having a ground-work of chocolate, slightly relieved by gold and crimson furnishings, is dark and gloomy, and is lit by but one large chandelier, while its acoustic properties are bad, and the ventilation not much better. M. Garnier, the architect, seems to have given this latter

subject little thought, and in a book entitled, "Le Nouvel Opéra," published in 1875, all that is said about it is, that the whole dependence for emptying is placed upon the grand chandelier, which, by its heat, draws the air into the roof. This, without a concomitant of valves opening to the outside air, is not sufficient. The Parisians use the dependencies of their theatres much more than we do. Almost every one leaves the auditorium during the time between the acts which frequently amounts to as much as twenty minutes, and *foyers* and *salles* are filled with people, talking, walking, and sipping wine or absinthe. From the loggia, a place much sought by the heated crowd, a splendid view of the Avenue de l'Opéra is obtained, all lighted by electricity clear to the Rue de Rivoli, the high and well-constructed buildings along its sides being thrown forward in good relief.

No architect should fail to visit the Hôtel de Cluny, to obtain an entrance into which a passport is said to be necessary, but we found a little well-directed silver was sufficient. It is full of curious details, both in its own construction and in what it contains. Quaint staircases spring up before one at the most unexpected points, and lead to equally quaint rooms and galleries. Besides the chance to study Gothic which the place affords, in its lovely garden are contained remains of an old Roman bath. These ruins are very perfect, the vaulting even remaining intact, and give an excellent idea of the arrangement of buildings of this class. The bricks are very large, and cemented together by a mortar almost as indestructible as iron.

While on this side of the Seine, we can easily pay a visit to the Luxembourg Palace, one of the great works of the era of Marie de Medici. Herein is contained the famous Salle du Trône, an apartment of magnificent size, richly decorated with carvings, fresco and gilding, and with a huge picture of Universal Suffrage painted on the ceiling. The building also contains the room at present used by the Senate, and the private apartments of the Medicis. The chief attraction to the general public is the museum, wherein are contained some of the choicest works of art in Paris. The gardens are very beautiful, and contain many well-executed statues.

The Ste. Chapelle, although rather difficult to find on account of its being so closely hemmed in by the halls of the Palais de Justice, should on no account be missed, if not for its beauty of design and decoration, then for the exquisite glass with which every window is filled. It is a little Gothic gem, worthy of close and attentive inspection.

With the exception of Nôtre Dame, the Ste. Chapelle and a few others, the churches of Paris are not satisfactory. The Madeleine certainly is not, notwithstanding the enormous expense of its erection, and its faithful following of the style chosen for it. A great heathen temple is portrayed, and so far so good: one recognizes when viewing the exterior, its beauty and what it must have cost, but when once entered, what can be more disappointing than a darkly-decorated interior, with no windows—nothing but a few skylights, which hardly break the gloom? The Eglise de la Trinité, well situated at the head of the Chaussée d'Antin, is an excellent example of comparatively modern work. The Panthéon, of course, every one visits, and if a good classical design is sought, here it can be found; while, in fine music, brass bands, and the like, St. Roch, from the steps of which the great Napoleon taught his first martial lesson, takes the lead. The Eglise des Invalides claims more than a mere passing notice. Its graceful and well-proportioned dome, designed by Mansard, shows in almost every part of Paris, and catches the eye by its gilding and height. Its interior, approached through a large court-yard and under a two-story façade, which is the worst part of the whole, serves excellently the purpose for which it is used—that of a gigantic mausoleum for the dust of the great emperor "who loved the French people so dearly." It is paved and lined with beautiful and expensive marble. Approaching the heavy rail, and peering down into the crypt directly under the dome and lighted from it, we behold the dark and ill-designed sarcophagus in which his ashes rest. Still lower, a mosaic pavement bears the names of his great victories, while the piers are adorned with battle-flags, gradually mouldering to decay.

We visited but one cemetery in Paris, Père la Chaise, and if it is a sample of all, as I suppose it to be, for in travelling on the rail I constantly saw small reproductions of it all over France, I do not think I should ever waste time on a visit to any other. The only things that can be brought forward in its favor are its superb situation, and that it contains a few tombs of some architectural merit. The taste displayed in both monuments and decorations is of the most villainous and unformed character, while tawdry wreaths and ornaments are strewn about, adding to the painful impression. The tomb of Abélard and Héloïse is, however, a Gothic conception of great beauty, and it is well to know, as it is very hard to discover among the variety of tombs and overshadowing growth of foliage, that it is only a short distance from the main entrance, along the right-hand path. This simple and chaste monument only makes one feel more plainly the exceeding vulgarity of all about it.

The Champ de Mars, where the great exhibition was held, is now a bare and ill-kempt field, having near its entrance the low and in nowise remarkable buildings of the Ecole Militaire. Across the Pont de Jéna loom up the graceful towers and admirable façade of the Trocadéro building, the surrounding grounds being laid out in flower beds.

Any description of the buildings of Paris would be incomplete

without a word or so about the Bon Marché, the largest store in the world, and which might well be designated a modern labyrinth from the difficulty one finds in making an exit at the place where one has entered. It occupies a whole block; is as massive on the exterior as a building with several stories and a mansard, supported on store fronts, can be, and contains numerous staircases and galleries around large well-holes, through which the light comes from the roof to illuminate the immense area. This is the place to see activity,—it is a small world in itself.

The apartment-houses, of which so many are contained in this great city, are, as a rule, many stories high, very plain on the outside, and with what little ornament there is worked on the stone *in situ*. The great beauty of these houses lies in their being so completely fire-proof: light iron joists from 6" to 8" deep support the floors, while between them are arched narrow strips of iron holding the counter-ceiling. The flooring-boards, when tiles are not used, and the wood-work of the doors and windows, are about all there is inflammable. Of private houses, such as we know them, there are few.

Versailles, whither we went on the morning of August 18, is easily reached by train from the St. Lazare station. On this road we again found the pleasant two-story cars. After gaining an excellent bird's-eye view of the city from the elevated ground along which the train speeds, St. Cloud and Sèvres are passed in quick succession, and the town of Versailles is finally reached. A long walk through the not over pleasant streets, and by the by no means remarkable buildings, bring one to the open area in front of the palace. It was a grand conception of Mansard to set the main front so far back, thus giving so much additional room and light and apparent extent. The building is too full of wonders and curiosities of every sort to describe in detail. After a stroll through the picture galleries and halls, where everything shone like glass—even the floors—we wandered out into the renowned gardens, and found our way to the Petit Trianon, the lovely spot where the unfortunate Marie Antoinette tried to imagine herself a milk-maid and her husband a miller. The buildings of this Paradise are little models of their kind, built partly of wood and partly of stone, with quaint overhanging balconies and curiously-placed stair-cases. From here a short walk brings one to the Grand Trianon, a small, squat, and ugly building, with low ceilings, only interesting on account of its connection with Madame de Maintenon.

Having now spent our allotted time in Paris, and seen, even if imperfectly and in a hurried manner, the most of its renowned buildings, and having learned much of the ways of its inhabitants, and something of their manner of living, we left on the morning of August 23, for Rouen, where we arrived about 2 o'clock, P. M. This old city, full of memorials and archaeological treasures, claims much more time for its thorough—even satisfactory—inspection, than we were able to give; still, however short a glimpse of beauty may be, it is better than none at all, and with this idea possessing our minds, we left the railway station for a short tour of investigation. There being, as I have said, so much to see, it is no wonder that, with the short time we could allow ourselves, buildings, etc., should be somewhat mixed in my mind. I remember distinctly, however, the profusion of decoration on the west front of the Cathedral, the curious but beautiful "Butter" tower; the central spire nearly 500 feet high, and of as ugly modern iron-work as can well be found; the wonderfully tinted glass of the interior, and the many historic tombs. It is not often that a town can boast of two cathedrals, but Rouen certainly has that rare privilege. St. Ouen fulfilling all the requisitions of a second one. It is amongst other things remarkable for its great interior height, and little solid wall-space, the windows occupying almost all the wall-space. The view of the choir from the garden behind the Hôtel de Ville is rarely beautiful. St. Maclou, although comparatively a small church, is perhaps the most interesting in Rouen. There are so many enticing little odds and ends of Gothic work about it, including Goujon's carved door, and the curious and elaborate winding stone stairway to the organ-loft. The Palais de Justice, not far off, amply repays a visit by the rich study of Gothic detail its court-yard façades afford. The Salle des Assises is said to have a very fine open roof, but we could not obtain admission. Nor should the visitor to Rouen neglect to walk down the narrow and winding Rue de la Grosse Horloge, passing under the old gate-house, with its belfry and quaint clock—from whence the name; besides which, to complete a survey of the curiosities of the town, the Place de la Pucelle should not be overlooked. On this spot, marked by a statue of no great merit, was Joan of Arc burned in 1431. Spite of its renown, it requires some searching to find it, hidden, as it is, in a sort of back street. We were directed hither and yon, and finally came upon it only by a happy accident.

We arrived at Havre late in the evening, but before dark had seen pretty much all of interest in the place, of which the pier and breakwater, and a large and substantial-looking new hotel by the beach, are the most prominent objects. The Hôtel de l'Admirauté is perhaps the best place in Havre for a transient visitor to stop at. It is situated directly on the quay, convenient to the steamers, and affords good beds and living at reasonable rates.

The day succeeding, August 24, we paid a visit to the watering place of Trouville-sur-Mer, where we spent the day with a friend, and thus I had a chance of viewing the interior of one of the seashore cottages of France.

On returning to Havre, we, in five minutes' time, set sail for Eng-

land, thus ending our architectural and other experiences on French soil.

T. BUCKLER GHEQUER.

THE ILLUSTRATIONS.

HOUSE FOR ROBERT SENEY, ESQ., BERNARDSVILLE, N. J.—
MESSRS. LAMB & RICH, ARCHITECTS, NEW YORK, N. Y.

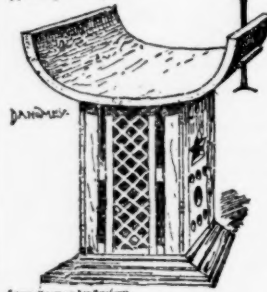
THE interior details of this house were published in the *American Architect* for December 3, 1881.

SKETCH FOR A COTTAGE. BY MR. J. M. CORNER.

COMPETITIVE DESIGN FOR A COUNTRY HOTEL. BY "Arcades Ambo."

SOME HINTS ON PATTERN DESIGNING.—III.

KING'S COLLEGE OF STATE.



Sketch from the King's College of State.

WILL finish my incomplete catalogue of the crafts that need the pattern-designer by saying a few words on designing for embroidery and for pottery-painting.

As to embroidery-designing, it stands midway between that for tapestry and that for carpets; but as its technical limits are much less narrow than those of the latter craft, it is very apt to lead people into cheap and commonplace naturalism: now, indeed, it is a delightful idea to cover a piece of linen cloth with roses, and jonquils, and tulips, done quite naturally with the needle, and

we can't go too far in that direction if we only remember the needs of our material and the nature of our craft in general; these demand that our roses and the like, however unmistakably roses, shall be quaint and naïve to the last degree, and also, since we are using specially beautiful materials, that we shall make the most of them, and not forget that we are gardening with silk and gold-thread; and, lastly, that in an art which may be accused by ill-natured persons of being a superfluity of life, we must be specially careful that it shall be beautiful, and not spare labor to make it sedulously elegant of form, and every part of it refined in line.

In pottery-painting we are more than ever in danger of falling into sham naturalistic platitudes, since we have no longer to stamp our designs with a rough wood-block on paper or cotton, nor have we to build up our outlines by laying square by square of color, but, pencil in hand, may do pretty much what we will. So we must be a law to ourselves, and when we get a tile or a plate to ornament remember two things: first, the confined space or odd shape we have to work in; and second, the way in which the design has to be executed. As to the first point, if we are not to miss our aim altogether, we must do something ingenious and inventive, something that will at once surprise and please people, which will take hold of their eyes as something new, and force them to look at it. Within these limits we may do as we please, so long as we do not forget, in the next place, that our design has to be pencilled by an instrument difficult to use, but delightful to handle when the difficulty is overcome—a long, sharp-pointed brush charged with heavy color, which pencilling should be done with a firm, deliberate, and decided, but speedy hand.

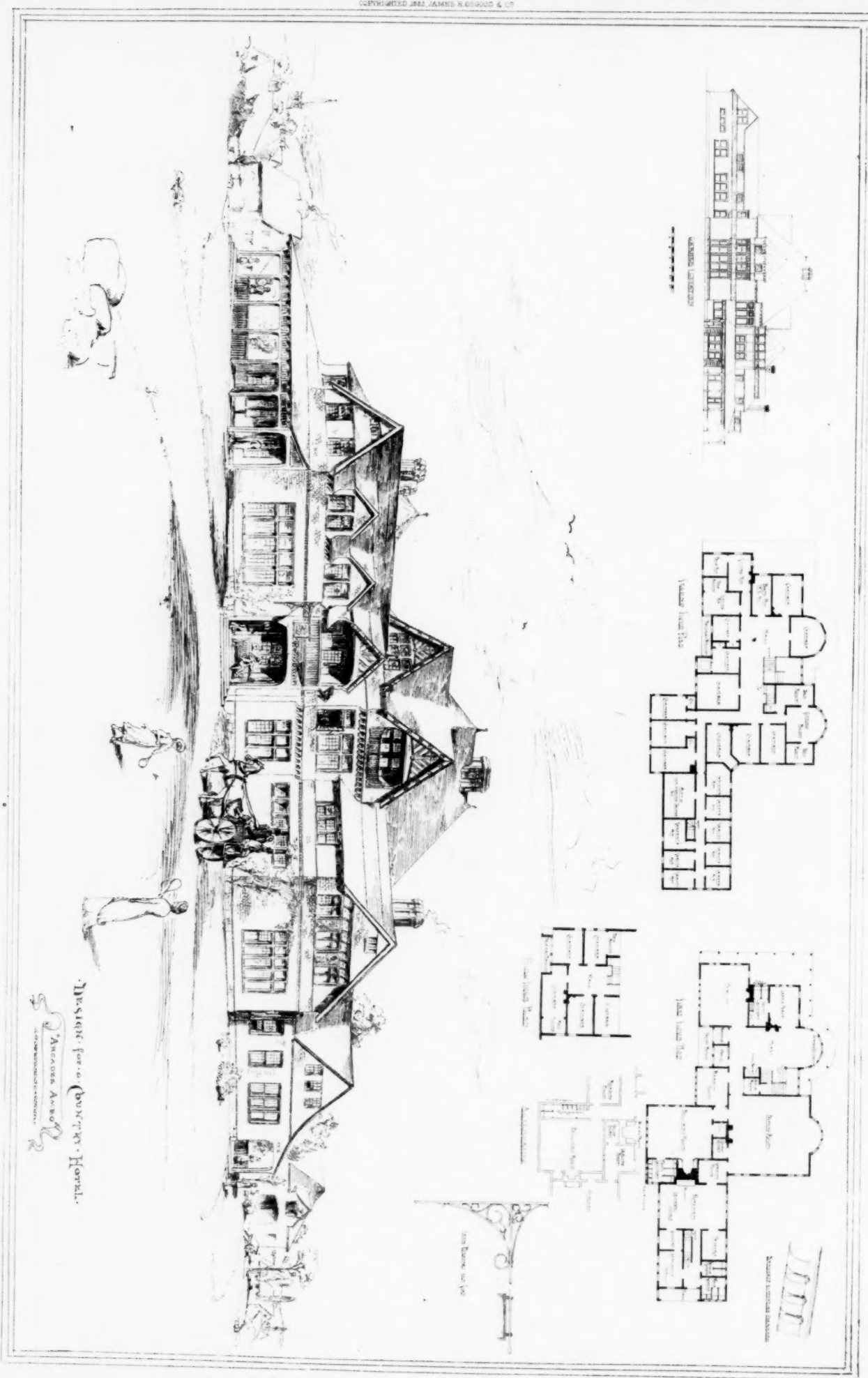
I feel the more bound to insist on this in pottery-painting because of late a kind of caricature art has been going about in the shape of elaborately painted dishes of the most disastrous design and execution. Most often the designers of these have thought they have done all they need when they have drawn a bunch of flowers or a spray without any attempt at arrangement, and colored it in imitation of a coarse daub in oils, without the least thought of what pigments were within reach of the pottery-painter. Such things teach nothing but the art of how not to do it.

Now, once more, those of you who are unconscious that there is any beauty in a pattern painted on pottery can at least help the art by utterly refusing to have any pattern on it; and I beg them earnestly and sincerely to take that amount of trouble.

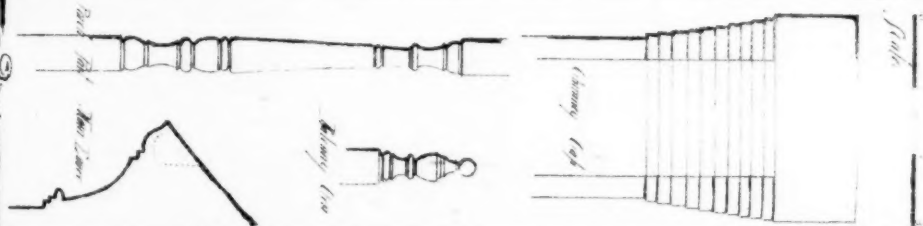
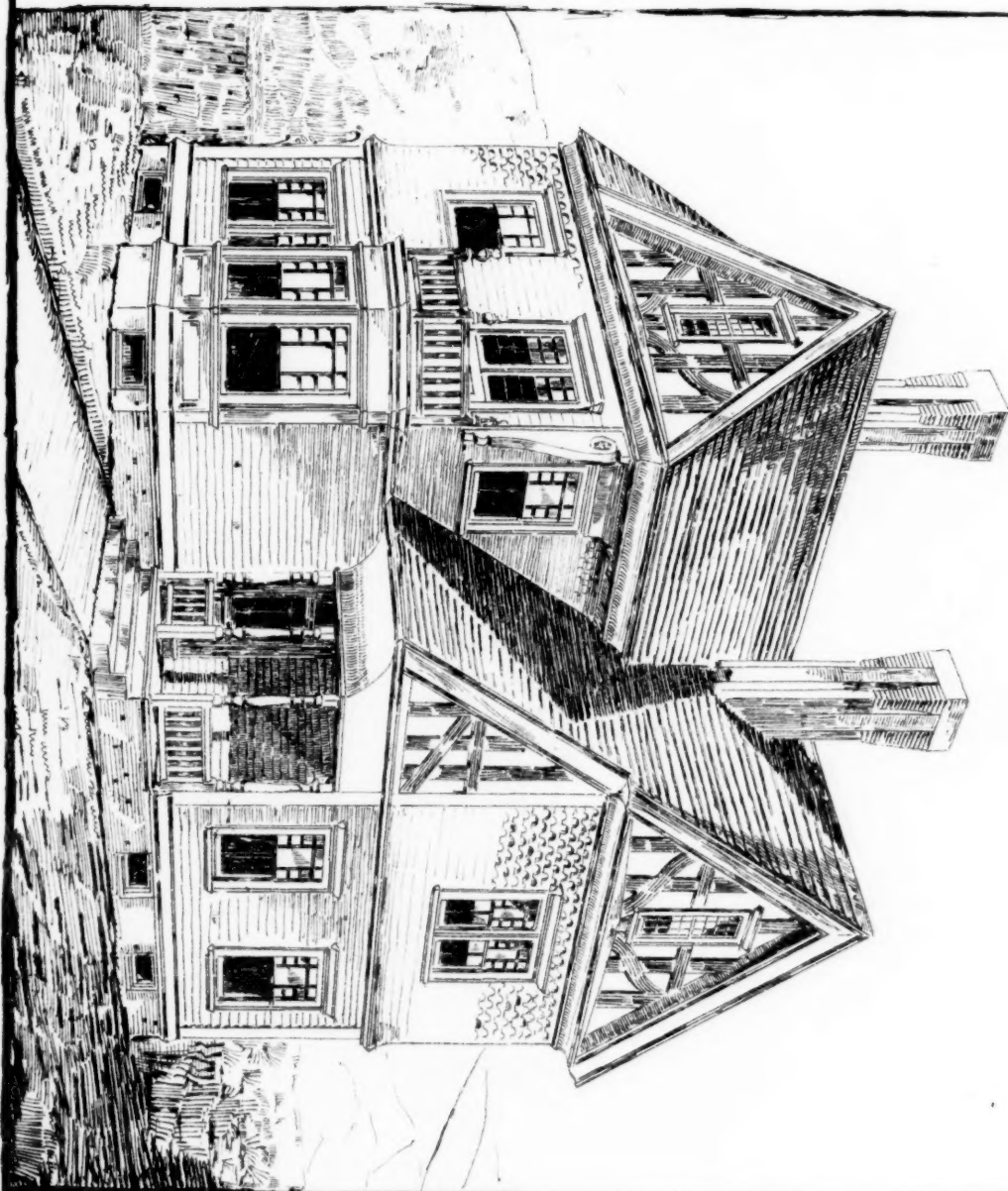
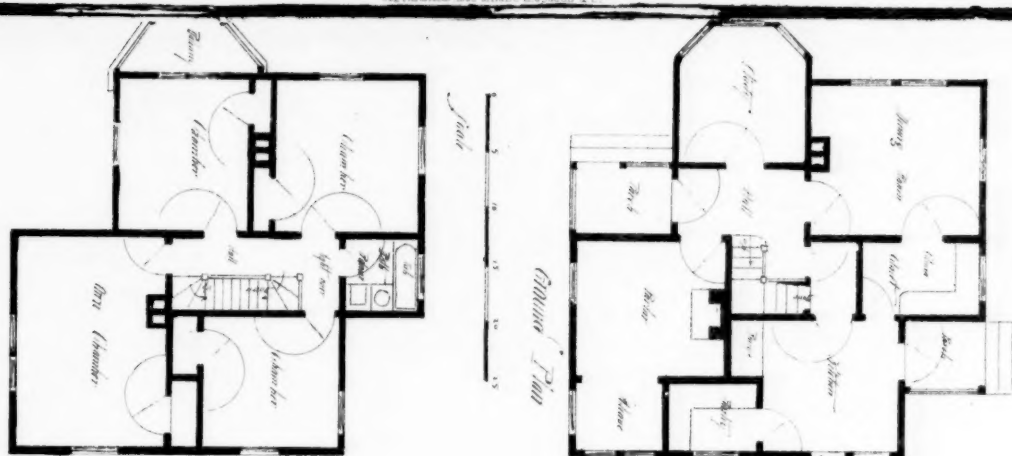
You may think that I have been wandering from my point in saying so much about the various crafts for which designs have to be made, rather than treating of the designs in general; but I have not done so by accident, at any rate, but because I want you to understand that I think it of capital importance that a pattern-designer should know all about the craft for which he has to draw. Neither will knowledge suffice him only: he must have full sympathy with the craft and love it, or he can never do honor to the special material he is designing for. Without this knowledge and sympathy the cleverest of men will do nothing but provide platitudes for the public and wanton puzzles for those who execute the work to break their hearts over.

Perhaps a few words on pattern-designing generally may be of some use to some of you, though the chances are you will have heard the same thing said often enough before.

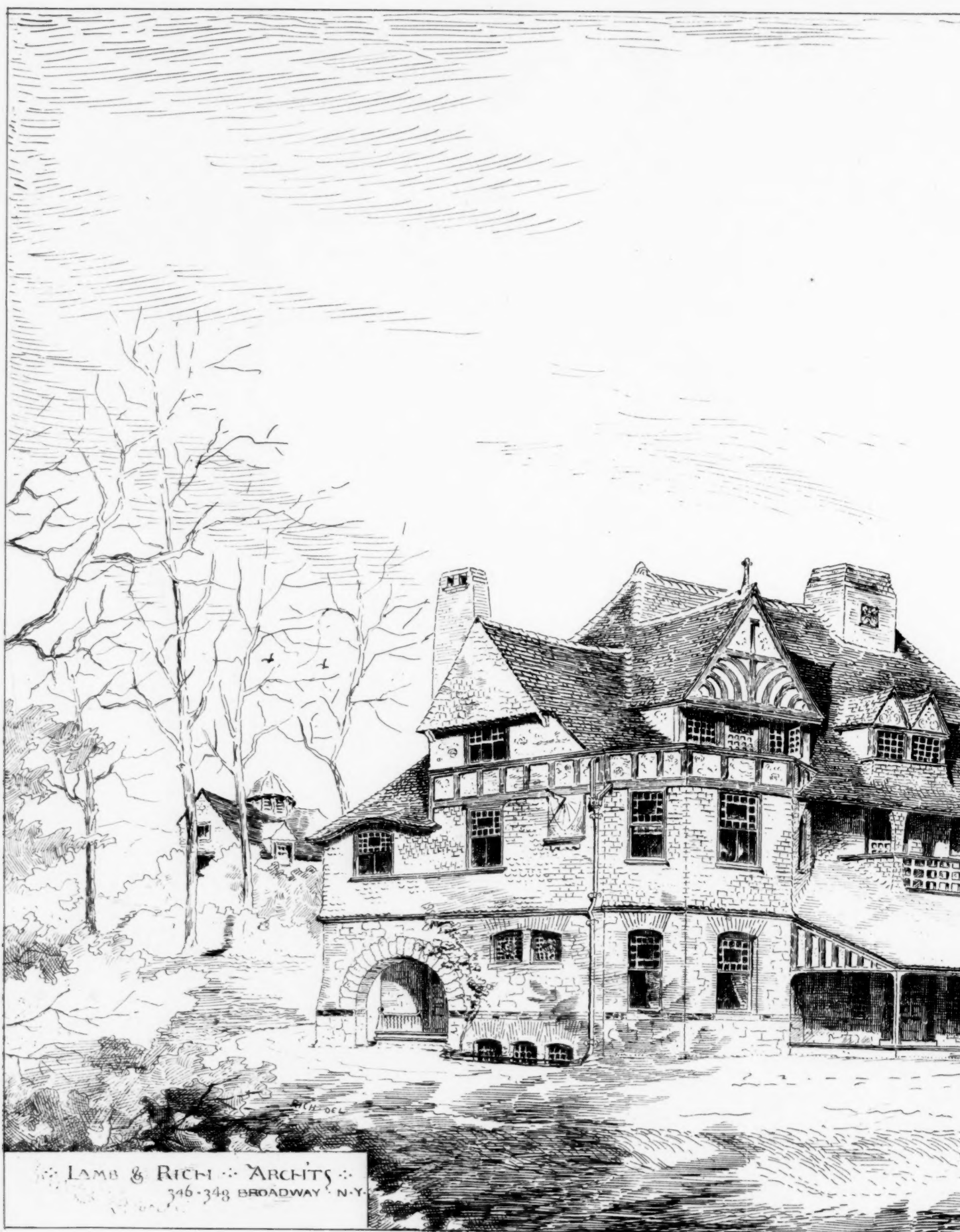
¹ By William Morris. A lecture delivered at the Working Men's College on December 10.



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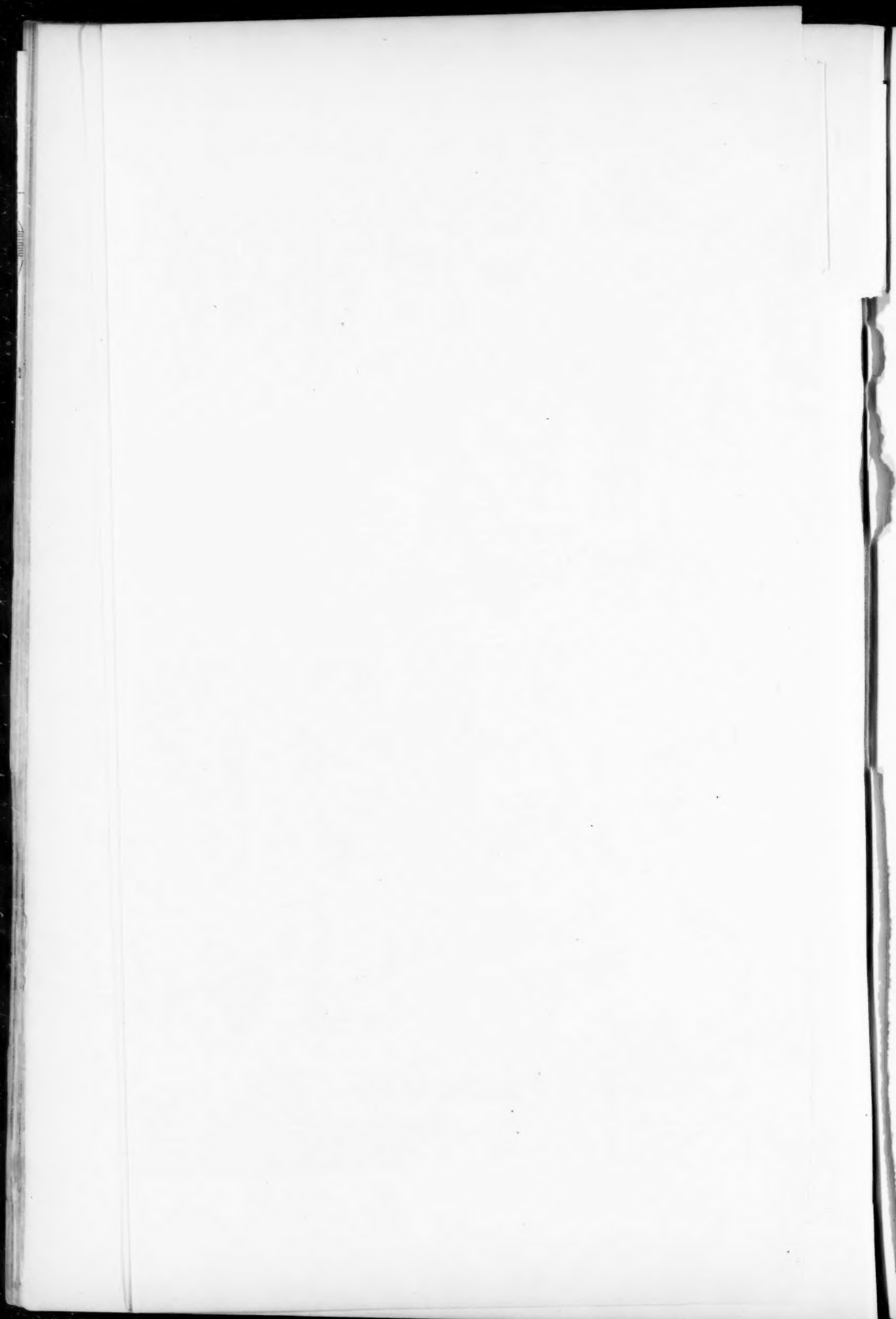


Sketch for a
Cottage
By J. M. COMPTON



LAMB & RICH ARCHTS.
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Above all things, avoid vagueness: run any risk of failure rather than involve yourselves in a tangle of poor weak lines that people can't make out. Definite form bounded by firm outline is a necessity for all ornament. If you have any inclination towards that short-hand of picture-painters, which they use when they are in a hurry, and which people call sketching, give up pattern-designing, for you have no turn for it. I repeat, do not be afraid of your design or try to muddle it up so that people can scarce see it; if it is arranged on good lines, and its details are beautiful, you need not fear its looking hard so long as it covers the ground well, and is not wrong in color.

Rational growth is necessary to all patterns, or at least the limit of such growth; and in recurring patterns, at least, the noblest are those where one thing grows visibly and necessarily from another. Take heed in this growth that each member of it be strong and crisp, that the lines do not get thready or flabby or too far from their stock to sprout firmly and vigorously; even where a line ends it should look as if it had plenty of capacity for more growth if so it would.

Again, as to dealing with nature. To take a natural spray of what-not and torture it into certain lines, is a hopeless way of designing a pattern. In all good pattern-designs the idea comes first, as in all other designs—*e. g.*, a man says, I will make a pattern which I will mean to give people an idea of a rose-hedge with the sun through it; and he sees it in such and such a way; then, and not till then, he sets to work to draw his flowers, his leaves and thorns, and so forth, and so carries out his ideas.

In choosing natural forms be rather shy of certain very obviously decorative ones—*e. g.*, bind-weed, passion-flower, and the poorer forms of ivy, used without the natural copiousness. I should call these trouble-savers, and warn you of them, unless you are going to take an extra amount of trouble over them. We have had them used so cheaply this long while that we are sick of them.

On the other hand, outlandishness is a snare. I have said that it was good and reasonable to ask for obviously natural flowers in embroidery; one might have said the same about all ornamental work, and further, that those natural forms which are at once most familiar and most delightful to us, as well from association as from beauty, are the best for our purpose. The rose, the lily, the tulip, the oak, the vine, and all the herbs and trees that even we cockneys know about, they will serve our turn better than queer, outlandish, upside-down-looking growths. If we cannot be original with these simple things, we can't help ourselves out by the uncouth ones.

A very few words as to style. Most true it is that if all art ought to belong specially to its time and nation, this should be, above all, the case with such a comparatively easy art as pattern-designing. Yet I am not so simple as to suppose that we can suddenly build up a style out of the wreck of inanity into which we had fallen such a little while ago without any help from the ages of art. And though I would say loudly, Don't copy any style at all, but make your own; yet you must study the history of your art, or you will be nose-led by the first bad copyist of it that you come across. Well, my advice to you in this matter is very simple. Study any or all of the styles that have real growth in them, and as for the others, don't do more than give a passing glance at them, for they can do you no good. From the days of ancient Egypt to the time of the sickness of mediæval art the architectural arts had life and growth in them: study all that as much as you please; but, from the times of the Renaissance onwards, life, growth and hope are gone from these, and as matters of study you have nothing to do with them. The architectural art that was in use even at the time of the great masters of the Renaissance will mislead you if you try to found any style of pattern-designing upon it, and this in spite of many splendid qualities in itself. It is not the art of hope, but of decay. As to what followed it, and culminated in the bundle of degraded whims falsely called a style, that so fitly expresses the corruption of the days of Louis XV., you need not even look at that in passing. More noble failures will serve your turn better, even for warnings.

If I am speaking to any pattern-designers here, or to those that have any influence over their lives, I should like to remind them of one thing, that the constant designing of recurring patterns is a very harassing business, and should always be supplemented with some distinctly executive work. Those who in the present unhappy state of the arts do not design for work which they carry out themselves should relieve their brain by drawing from the human figure, from flowers or landscapes or old pictures, or some such things—by doing something which is not a diagram, but is an end in itself—or they will either suffer terribly or become quite stupid. A friend of mine, who is a Manchester calico-printer, told me the other day that the shifty and clever designers who draw the thousand and one ingenious and sometimes pretty patterns for garment goods which Manchester buys of Paris, have a great tendency to go mad, and often end so; and I cannot wonder at it.

That such a caution as this should be necessary is a woful commentary on the state of those arts on which pattern-designing lives. That the art, whose office it was to give rest and pleasure to the toiling hand should now have become a torment to the wearied brain of man, is a strange inversion of the natural order of things, and, to my mind, points to matters far more serious than would at first sight seem to be wrapped up in the question of designing pretty patterns for our common household goods.

I must ask your patience for a few minutes yet while I say a word or two on these matters, for I have made a compact with myself that I will never address my countrymen on the subject of art without speaking as briefly, but also as plainly as I can, on the degradation of labor which I believe to be the great danger of civilization, as it has certainly proved itself to be the very bane of art.

Foresight and good will have set on foot many schemes for educating people before they come to working years: for tending them when misfortune or sickness prevents them from working, for amusing them reasonably when they are at leisure from their work—aims that are all good and some necessary to the well-being of our race.

But can they alone touch the heart of the matter—to be sedulous about what people do with their time till they are growing out of childhood into youth, to take pains to add to the pleasure of their few hours of rest, and at the same time never to give a thought to the way in which they spend their working hours (ten hours a day, and a long time it is to spend in wishing we were to come to the end of it) between the ages of thirteen and seventy? This, I say, does seem to me a strange shutting of the eyes to one of the main difficulties of life, a strange turning from the great question which all well-wishers to their neighbors ought to ask—how can men gain hope and pleasure in their daily work?

I do not profess to foretell what will happen to the world if we persist in keeping our eyes shut on this point; but one thing I know will happen—the extinction of all art. I say I know it will happen, and indeed it is happening now, and unless we take the other turn before long it will soon be all done. You would not believe me if I professed to think that a light matter even by itself—the thrusting out of all beauty from the life of man; but when one knows what lies at the bottom of it, how much heavier it seems, the thrusting out of all pleasure and self-respect from man's daily work, the helplessly letting that daily work become a mere blind instrument for the over-peopling of the world, for the ceaseless multiplication of causeless and miserable lives.

Surely I am speaking to some whose lives, like mine, are blessed with pleasurable and honorable work, who cannot bear the thought that we are to go on shutting our eyes to this, and to do nothing because our time on earth is not long. Can we not face the evil and do our best to amend it our very selves? If it be a necessary evil, let us at least do our share of proving that it is so by withstanding it to the utmost. The worst that can happen to us rebels in that case is to be swept away before the flood of that necessity, which will happen to us no less if we do not struggle against it—if we are flunkies, not rebels. Indeed, you may think that the metaphor is all too true, and that we are but mere straws in that resistless flood. But don't let us strain a metaphor; for we are no straws, but men, with each one of us a will and aspirations, and with duties to fulfil; so let us see after all what we can do to prove whether it is necessary that art should perish—that is, whether men should live in an ugly world, with no work to do in it but wearisome work.

Well, first we must be conscious of the evil, as I believe some are, who do not dare to acknowledge it. And next we must dare to acknowledge it, as some are who dare not act further in the matter.

And next—why, a good deal next, though it may be put into few words, for steady rebellion is a heavyish matter to take in hand; and I tell you that every one who loves art in these days and dares pursue it to the uttermost is a dangerous rebel enough; and I will finish by speaking of one or two things that we must do to fit ourselves for our troublous life of rebellion.

We ought to get to understand the value of intelligent work, the work of men's hands guided by their brains, and to take that, though it be rough rather than the unintelligent work of machines or slaves, though it be delicate; to refuse altogether to use machine-made work unless where the nature of the thing made compels it, or where the machine does what mere human suffering would otherwise have to do: to have a high standard of excellence in wares and not to accept makeshifts for the real thing, but rather to go without; to have no ornament merely for fashion's sake, but only because we really think it beautiful, otherwise to go without it; not to live in an ugly and squalid place (such as London) for the sake of mere excitement or the like, but only because our duties bind us to it; to treat with the utmost care whatever of architecture and the like is left us of the times of art. I deny that it can ever be our own to do as we like with; it is the property of the world, that we hold in trust for those that come after us.

Here is a set of things not easy to do (as it seems), which all men taking some trouble in the art of life, and not giving in to the barbarous and cumbrous luxury—or comfort as you may please to call it—which I sometimes think is really fated to stifle all art, and in the long run all intelligence, unless we grow wise in time and look to it.

I dare say that nobody but men who consciously or unconsciously care about art would strive to bind themselves by these rules, but perhaps some others may join them in trying to act on these that follow. To have as little as possible to do with middlemen, but to bring together the makers and the buyers of goods as closely as possible. To do our best to further the independence and reasonable leisure of all handicraftsmen. To eschew all bargains, real or imaginary (they are mostly the latter), and to be anxious to pay and to get what a piece of goods is really worth. To that end to try to

understand the difference between good and bad in wares, which will also give you an insight into the craftsman's troubles, and will tend to do away with an ignorant impatience and ill-temper which is much too common in our dealings with them nowadays.

In short, as I have said before that we must strive against barbarous luxury, so here I must say that we must strive against barbarous waste. What we have to do is to strive to put co-operation in the place of competition in the dealings of men; that is, in place of commercial war, with all the waste and injustice of war—which, since men are foolish rather than malicious, has to be softened ever and anon by weak compliance and contemptuous good-nature—we must strive to put commercial peace with justice and thrift beside it.

I ask you not to think that I have been wandering from my point in saying all this: I have had to talk to you to-night about popular art, the foundation on which all art stands. I could not go through the dreary task of speaking to you of a phantom of bygone times, of a thing with no life in it; I must speak of a living thing with hope in it, or hold my peace; and most deeply am I convinced that popular art cannot live if labor is to be forever the thrall of muddle, dishonesty, and disunion. Cheerfully I admit that I see signs about us of a coming time of order, good-will, and union, and it is that which has given me the courage to say to you these few last words, and to hint to you what in my poor judgment we each and all of us who have the cause at heart may do to further the cause.

SHORTNESS OF LIFE AMONG ARCHITECTS.

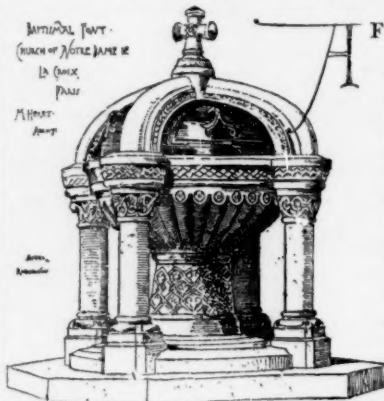


From the British Architect.

IT is only a short time ago, remarks the *Saturday Review*, that any one conversant with the artistic politics of the day would, if asked to name the architects who had in the course of the competitions, official or unofficial, which were at that time in higher favor than they have since become, taken the foremost position as competitors, if not as combatants, have undoubtedly put in the front line, Digby Wyatt, Scott, Edward Barry, Burges, Street, to name them in the order of their departure. Now all of these are dead, Scott only just an old man, and the rest in middle age. Every one of the men, in fact, over whom any real battle at that time raged has, with the exception of Mr. Waterhouse, left the scene. The *Times* attempted to sketch, with a keener eye to faults than merits, the difference between the old and the new taste in architecture by pairing off Mr. Street with Mr. Decimus Burton, who had died a few days before, aged eighty-one. The comparison might have been more telling if it had included a third architect, who died on the very day before Mr. Street, and who was, although a year older than Mr. Burton, rather the first of the new than the last of the old school. More than forty years ago, when prominent men of the Gothic school who have since been famous and died were still unheard of, Anthony Salvin seemed destined to lead the revived school of Mediæval art. But he was rather torpid in the important matter of ecclesiastical architecture, and so, while making proof of his mastery of castellated construction at the Tower, at Windsor, at Alnwick, and in his own modern castle of Peckforton, as well as of considerable taste in country-houses, he practically became an outsider in the animated conflict of styles which has filled up the intermediate years.

There is never an effect without some cause, and it is better to seek what explanation can be given for the remarkable shortness of life among conspicuous architects, than idly to lament the losses. No doubt, as the phrase goes, it is the pace which kills; but there is something more than the mere speed to account for the dangers and the casualties of the architectural race. The nature of the broken country which has to be crossed tells against safety as much as the mere speed. Some men kill themselves by over-devotion to an art, and others by an over-devotion to a profession; but it is the hard and peculiar fate of an architect to be following both an art and a profession. His education in composition matches with that of a painter in painting. His education in construction matches with that of an engineer in engineering. Once he is in practice, the thought needful to marry beauty with utility in his designs is only the beginning of troubles. He has to settle his accounts with employers, who may be stingy and overreaching, exacting and capricious, ignorant and prejudiced, vain and half-instructed, with contractors too often incompetent, dishonest, or insolvent, with workmen too stupid to understand and too obstinate to obey. Add to this the wear and tear of railways, the severities of weather, and it will be seen that the career of a successful architect is one which tells with unusual severity on the human frame. Yet there is no remedy which could be thought of which would not be worse than the disease. To separate the professions of artistic and of constructive architect would be to extend and to perpetuate a system which has already, in the hands of speculative builders, worked so much woful mischief to the national taste.

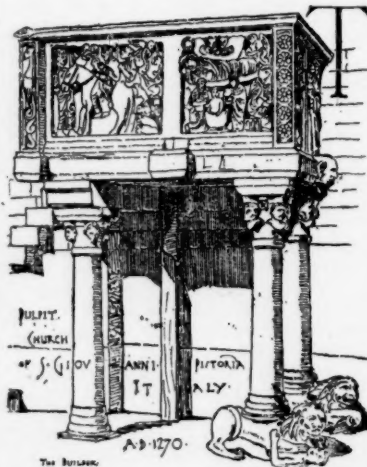
TUNNEL THROUGH THE PALISADES.



FEW months ago we noticed the commencement of work on the new tunnel through the Palisades at Weehawken, opposite West Fifty-fifth Street, New York, for the New York, Ontario and Western Railroad. Within fifteen months the whole will be finished. The tunnel proper will be over 4000 feet in length, and there are five shafts through solid rock, 8 x 16 feet, and nearly all are sunk to a depth varying little from 160 feet.

Steam drills are driven in at each side of the tunnel chamber to the depth of several feet, one crossing the other in such a fashion that when the blasting is made the rocks are thrown out in such immense pieces that they have to be blasted again to get them up through the shaft. These drills are worked by compressed air instead of steam, 80 pounds being used to the square inch, but the air does not affect the workmen in any manner similar to the effect on the men in the tunnel under the Hudson River. As the compressed air escapes from the drill it ascends through the opening of the shaft and the natural air descending, keeps the chamber supplied with pure air and prevents the oppressive and choking sensation that is experienced in the river tunnel. The work on the approaches to the tunnel occupies the attention of the majority of the men employed in the work. There are now 600 men employed, and they are divided into two shifts. The eastern approach of the tunnel that is now being cut out with the aid of immense steam shovels, will begin at shaft No. 5, and the bed will be 85 feet below the top of the hill, to run to nothing at New Dunham, a distance of over 4000 feet. It will be wide enough to permit the laying of four tracks as far as Granton. The only road at present crossing the route of the cut is the Hackensack plank road at North Bergen, and here a stout bridge on stone abutments is being put up. A retaining wall along the sides of the cut is also being put up. The company have purchased a mile of water front, which is now being dredged. There are now in use about fifty three-inch drills, and this week 25 additional drills will be put in operation. At present the tunnel, as cut out, is 33 feet wide and 25 feet 6 inches to the roof. When the masonry is put in it will be 27 feet wide and 21 feet high to the roof, from the western portal to within a short distance of the eastern approach. The eastern portal is to be fan-shaped, 60 feet high and 40 feet wide, and tracks will run out on a ten-degree curve to the depots on the north and south sides of the opening. Superintendent Coleman says that the shafts of the tunnel are deeper than probably any tunnel of the same size in the country, and the work has progressed more rapidly than on any other tunnel. — *The Iron Age*.

SOME INDUSTRIAL USES OF CALCIUM COMPOUNDS.¹



THE sulphate of calcium, although it is neither so abundant nor so important from an industrial point of view as the carbonate, has properties which are perhaps more interesting and noteworthy in themselves.

Sulphate of calcium is perhaps as widely diffused as the carbonate, being present in almost all spring waters and soils, but we do not meet with compact masses of the sulphate which are at all comparable in magnitude with the larger deposits of calcium carbonate. In some instances the sulphate and the carbonate occur together in the same mineral, as in the case of the so-called montmartrite, which is so abundantly found in the neighborhood of Paris.

In this country, the principal deposits of calcium sulphate which are useful industrially occur in Nottinghamshire, Leicestershire, and Derbyshire; but notable quantities occur in Cumberland, and smaller deposits in Sussex, Kent, and Somerset. Few countries are without tolerably large deposits of gypsum in one form or another, and Swit-

¹ Portions of the third Cantor lecture delivered before the Society of Arts by Thomas Bolas, F. C. S.

going on at Rheims, Chartres, Limoges, Clermont, and other places, it is evident that more care is now taken while doing the work in the most thorough manner, to do it with as little interference as possible with the ancient work. The completed restoration of the interiors of Notre Dame at Chalons and the cathedral at Valence are examples of work thoroughly and also well done; while the interior restoration of Périgueux Cathedral, completed some years ago, is an example of work thoroughly, but not well done. In the first two cases the old stone-work is carefully cleaned, pointed, and repaired: in the other it is scraped all over and renewed to such an extent that it looks as if just built. The system adopted at Périgueux was but too common at that time; but the more conservative spirit seems to prevail in the restoration of the important buildings now being carried out, and which I had an opportunity of visiting, amongst which are the cathedrals of Rheims, Chartres, Laon, Clermont-Ferrand, Limoges, Nîmes, etc. My notes commenced with the more important of them all, viz.:—

RHEIMS CATHEDRAL.

The modern works of restoration, though now being very actively pushed forward, were begun as long ago as 1809, and even before then the chapter had been obliged at different times to spend large sums on reparation, sometimes to the extent of 25,000 francs annually. The works in 1809 and onwards were carried out under M. Dubut, architect, and then under M. Rondelet, and at that time the restoration of the north transept and the flying-buttresses of the apse, "dont plusieurs étaient dégradés," were carried out. The troubled times of the year 1814 stopped the works at this point, and little was done till 1877, when the French Government granted the sum of £80,000 for the works of restoration, since which time very much has been done, and those who knew it of old times are naturally anxious as to what the result of the expenditure will be; for, to ordinary observers, there was nothing, at all events on the exterior, which appeared to call for very much repair. It, however, seems from the architect's elaborate report, that some parts were in quite a dangerous condition, especially the flying-buttresses, the great niches of the buttresses and their spires, and the parapets of the nave and much of the facing. The first works undertaken were, therefore, the repairs of these worst parts; they, of course, involved the construction of very elaborate and skilful scaffolding for the entire height externally, the stained glass of the clerestory being carefully covered up and boarded over where they are actually at work, producing a most singular and gloomy effect internally. Many of the westernmost bays are now completed, and the scaffolding removed, and one is much pleased not to be struck with such a sense of newness as might be anticipated. Much care seems to have been taken to preserve old work where sound: the mass of the walls and buttresses, therefore, fairly well retains its ancient tone of color; but it is in the buttress-niches and their spires that new work makes itself specially evident. And here there is rather more done than some of us would consider quite justifiable; however, very many of the old stones of the canopies, capitals, etc., of the niches and carved bosses and gargoyles are preserved on the pavement between the buttresses with permanent and picturesque small pent-house roofs constructed over them under the aisle-windows, resting on corbels let into the wall. Though this arrangement has a rather museum-like appearance, it enables one to test the accuracy and care which has been bestowed on the new work. I noticed many old moulded and carved stones marked and cut out for the insertion of new pieces, and that the great angels in the niches have, in many cases, had their ancient outspread wings refixed, the old fixing having been very bad; but I did not notice that any of the figures themselves were renewed.

The nave parapet and its pinnacles seem to have been in a very bad state, as they are almost entirely new. This ancient parapet was later than the clerestory wall, and certainly appeared to be no improvement to the earlier work; this defect is now more apparent through the almost white tone of the new stone. This stone seems to be of the same description as the old, and is a very hard limestone full of fossils.

The glorious west front, save for some new stones to the lower part of the tower-buttresses, is untouched, and long may it remain so. The area in front is still full of blocks of stone; but one misses the ancient stone lamp-posts, one of which I saw prostrate on the ground. It is to be hoped they will be re-erected.

Those who have examined the great side buttresses of the towers will remember the curious way in which Robert de Coucy or his successor altered the design (being obliged to reduce its cost) by making the projections of the buttresses less, just above the cornice of the aisles. It will be noticed that on the top slope of this cornice there were left curious square blocks, which Viollet-le-Duc writes, were described by Villars de Honnecourt thus: "Les carreaux réservés sur la pente des larmiers pour permettre aux ouvriers de circuler autour des contreforts à l'extérieur." Viollet-le-Duc does not altogether accept this suggestion, but he does not explain why the blocks were so left. The problem is a very interesting one to attempt to solve when carefully examining the cathedral; it is, therefore, to be regretted that these old stones on the south buttresses are removed and new stones with similar square blocks inserted. But on the buttresses of the north tower these blocks are not square, but are formed into small mouldings dying into the slope of the cornice, possibly indicating that the architect meant either to panel the face

of the next stage of the buttresses, in continuation of the design of his intended aisle parapet, or that he meant to carry his parapet round the buttress, and by setting back all its faces to leave a clear passage round it, as was done at Limoges and Clermont. Whether the southern stones now removed were thus moulded or left square, I do not know, but if these northern stones are removed, the solution of this interesting problem will be impossible, as nothing can be inferred or proved from modern copies, however carefully executed.

In the interior nothing is done, still the capitals look like butter (1), and there are in the niches and behind the triforium arcades, the hateful color wash of grayish-blue. The cathedral would gain immensely by the removal of all this color; but it is to be hoped that it will not have its stone joints pointed with the usual black mortar. The present altar, the screens, and all the fittings, are in the worst taste, and poor and mean in character, and ought to be entirely renewed, and, if possible, as they were before. In the Archbishop's palace there is preserved a careful drawing of the very magnificent flamboyant jubé erected in 1420, with its pair of circular open-work staircases. This was removed in order to gain a more spacious effect! I hope it may be possible that this splendid work of art may, at all events, be reproduced.

It is to be wished that it were possible to reproduce from authority the ancient fittings with the stone inclosures to the choir, probably in the style of the jubé, and in the style of those at Chartres; and also the ancient stone screens which shut off the apsidal chapels, and, above all, the magnificent ancient altar, which stood under the crossing, on the rich mosaic pavement brought there in 1791 from the destroyed abbey church of St. Nicaise. Most of the beautiful fittings were destroyed and replaced by wretched modern fittings in 1747 by M. Godinot, a canon of the cathedral. The removal of the mosaic maze on the nave-floor in 1779 is due to another canon, "qui était choqué des courses des enfans, et des étrangers qui s'amusaient quelquefois à parcourir pied à pied toutes les sinuosités et les contours de ce labyrinthe!"—R. Herbert Carpenter in the Builder.

A CIRCULAR OF THE NEW YORK STONE-CUTTERS' ASSOCIATION.

NEW YORK, January 16th, 1882.

Dear Sir,—I am instructed by the Journeymen Stone-Cutters' Association to notify you that this Association will not sanction or permit any of its members to sub-contract from an employer, nor work for any person who may have sub-contracted from a firm that carries on the stone-cutting business; nor will it permit any of its members to work upon any job, the stone of which is cut by men working in opposition to its rules, or by men with which it is not in communion; neither will it allow the separation of carving from stone-cutting.

WM. FOWLE, Rec. Sec.

JOSEPH SHARKEY, President.

NEW YORK, 30th January, 1882.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Our attention has been called to the above notice issued by the Stone-Cutters' Association of this city, declaring that in future no stone-cutter shall be allowed to work on a job where carving is being executed separately from the stone-cutting, etc.

As we consider this notice a dictatorial and unlawful attempt to interfere with the rights of employers to decide as to who shall be entrusted with any portion of their work, likely to produce inferior results, besides being foreign to the spirit of our institutions, we will advise our clients to decline to deal with stone-cutters who are not stone-carvers for work upon which there is a large amount of carving to be executed.

Yours respectfully,

(Signed)

R. M. HUNT,
MAURICE FURNACHON,
GEO. B. POST,
WM. A. POTTER,
R. M. UPJOHN,
CHARLES C. HAIGHT,
HENRY M. CONGDON,
J. CLEVELAND CADY,
H. HUDSON HOLLY,
H. EDWARDS FICKEN,
GEO. KELLER (Hartford, Conn.),

FRANCIS H. KIMBALL,
THOMAS WISEDELL,
H. WHEELER SMITH,
FREDERICK C. WITHERS,
EDWARD H. KENDALL,
MCKIM, MEAD & WHITE,
S. V. STRATTON,
R. H. ROBERTSON,
BASSETT JONES,
CHAS. W. CLINTON,
VAUX & RADFORD.

HOW TO LAY ENCAUSTIC TILES.

DES MOINES, IOWA, January 24, 1882.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I shall consider it a great favor if you will answer, at as early date as possible, the following questions.

1. What is the proper manner of preparing a wooden-beam floor to receive encaustic tile flooring?
2. What is the correct method of laying the tile, and is skilled labor required, and is it done usually by "experts?"
3. Is it proper, say in a staircase hall, to put in the stairs, wainscot, and all finish first, and let the tile layer slip the tile border under and lay all tile last?
4. Do tile layers usually work the same number of hours and receive about the same wages as bricklayers, equally skilful? L.

[The usual method of preparing a floor of wooden beams for tiling is to nail fillets to the sides at the proper distance from the top, cutting in short pieces of rough board, and laying brick on edge in cement mortar on the boards, so that the upper edge will come from 1 to 2 inches below the top of the finished tiling, according to the thickness of the tiles proposed to be used. The surface is then concreted up to within 1-4 inch of the lower surface of the tiles, and allowed to set. Upon this bed the tiles are laid. If a floor of timber can be set sufficiently low, an improvement on this method

would be to board it entirely over, and make a continuous bed of brickwork or concrete over it, which would not be affected by the lateral shrinkage of the beams.

Before setting the tiles, the pattern should be carefully laid out on the concrete bed, and guide strips of wood fixed, perfectly level, around the portion to be first finished, at the height of the finished surface of the tiling. The laying should begin from the centre of the room, and each tile, after being thoroughly soaked in water, is to be laid in a bed of cement spread for it, and gently beaten down to the level of the guide strips. A straight-edge applied to the guides must be constantly used to insure the correctness of the work. The concrete bed is to be kept wet while the pavement is being laid, and after a portion of the pattern is set, it may be grouted with thin cement, wiped quickly off the surface. Portland cement is generally used, but it sets too quickly to be employed by any but expert workmen, who are the only ones entrusted with tile-laying in those places where they can be procured.

All base-boards, wainscotings or other wood finish should be removed before laying the tile, and replaced afterwards, as it is impossible to push the tiles under such wood-work and settle them into their bed of cement without leaving an open space between them and the wood; or, if the finish extends below the surface of the tiles, these must be cut to fit against it, making a ragged joint.

The tile layers are paid high wages, both skill and taste being required in their business. As a rule, they are employed by the dealers in tiles, so that we cannot say what they actually receive, but our impression is that their pay is higher than that of any bricklayers. — EDS. AMERICAN ARCHITECT.]

ELIZABETHAN ARCHITECTURE.

MONTREAL, January 31, 1882.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Have you any good illustrated work on Elizabethan Architecture? If not can you tell us where we could get one?

Have you any photograph of Mrs. Stevens's house on Fifth Avenue, and if so, what is the price? Yours truly,

J. W. & E. C. HOPKINS.

[For work exclusively Elizabethan, Shaw's Details of Elizabethan Architecture, London, 1839, is the standard authority; but for domestic architecture of the Early English Renaissance in general, Nash's Mansions of England, Richardson's Studies from Old English Mansions, or, S. C. Hall's Baronial Halls of England, will be found very useful. For any of these send to J. Sabin & Sons, 84 Nassau St., New York, or, Estes & Lauriat, 301 Washington St., Boston.

Photographs of Mrs. Stevens's house may possibly be had of E. & H. T. Anthony, 591 Broadway, New York. — EDS. AMERICAN ARCHITECT.]

THE EFFECT OF FREEZING PLASTER.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Will you please state in your next issue what effect frost has on fresh plaster? It is contended by a practical man that freezing plaster dry makes a good job. Yours truly, F.

[The effect of frost upon fresh plaster is to cover it with arborescent crystalline marks. On thawing, the surface disintegrates and separates, or, if the freezing has been complete, the whole of the mortar loses its coherence, and is easily shaken or knocked from the laths. The notion that plastering thoroughly frozen, and allowed to remain frozen until dried out, remains hard, is very widely spread among masons, but we have never ourselves seen a "frozen set," and some contractors of great experience assure us that they never have. At the best, it must take a very long time for frozen mortar to dry, and the occurrence of a thaw meanwhile would destroy the work. — EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS.

LORD WIMBORNE.—Lord Wimborne offers to advance his tenants in Rosshire money free of interest to enable them to build cottages; and now it is asked, to whom will the cottages belong, to the landlord or to the tenant, at the end of the leases?

THE CONTINGENT FUND INVESTIGATING COMMITTEE.—Supervising Architect Hill, of the Treasury, was examined by the Contingent Fund Investigating Committee, January 23, in regard to expenditures out of the Contingent Fund for his bureau.

TREES THAT ARE NOT TIMBER.—The interior department at Washington has decided that Lombardy poplar, balsam, and cotton-wood are not timber in the meaning of the law relating to tree planting. The Olympia, W. T., Transcript states that a petition is now in circulation in eastern Washington, to get the decision amended so as to include these trees in the list of those lawful to plant. Many have set out Lombardy poplar in good faith, thinking that it was in compliance with the law, and they are now in danger of losing their claims. — *Northwestern Lumberman.*

THE DISESTABLISHMENT OF BELLS.—The law has, in the matter of bells, less disregard for the nerves than regard for the privileges of religion. Secular bells of all kinds have one by one been disestablished in the English metropolis. The muffled bell together with all other noisy modes of advertising wares have been in theory, at least, silenced. The call-bell for ringing workmen up to time is prohibited like steam whistles and horns, used for the same purpose without the sanction of the sanitary authority. Musical hand-bells are liable to the same suppression as the street-organ, the common enemy of all mankind who live above the basement floor. Church bells alone, except at one time the unorthodox bells of Roman Catholics, have been subjected to no statutory repression. Bells in their purely musical functions may, if they pass the bounds of the definition of nuisance, be restrained by injunction, as happened in the well-known case of the Roman Catholic chapel at Clapham; but the passing bell, the funeral bell, and the bell for service are not only allowed, but enjoined by the canons. Some repression on these most disturbing forms of ringing may fairly be asked. Passing bells may well be dispensed with altogether in towns; and funeral bells in the near neighborhood of houses might, without impropriety, be required to be closely muffled. Better reminders of mortality are found nowadays in the first column of the daily newspaper than in the church steeple. — *Law Journal.*

THE STATE CAPITOL AT ALBANY.—The report of the New Capitol Commissioners, submitted to the Senate, February 2, shows that there was on hand January 1, 1881, an unexpended balance of \$374,407.43. There was appropriated in 1881, \$1,000,000; received for sales, \$68,660; paid on contracts and for material and labor, \$1,198,727.23; balance on hand December 31, 1881, \$176,366.80; total expenses for construction up to December 31, 1881, \$12,113,243.63. To this must be added interest paid by former Commissioners, \$56,935.04. The cost of the land upon which the Capitol Stands was \$626,447.63, making a total expenditure of \$12,796,626.30. Satisfactory progress is reported during the year. The Governor's room, that of the Lieutenant-Governor, those of the Insurance Department, of Public Instruction, of the Adjutant-General and Inspector-General and some minor apartments have been completed for permanent occupancy. The new rooms of the Secretary of State will be finished in about a week. The entrance and elevator on the State Street side have been put in shape. The Senate galleries have been improved. The rooms of the Court of Appeals are complete. The present Commissioners found a contract in force under which the State paid 99 cents per cubic foot of granite. This was cancelled and a new contract formed at from 58 cents to 62 cents, according to quality. The change of contract is believed to have saved the State from \$150,000 to \$200,000.

A NEW FIRE EXTINGUISHER.—A Cincinnati doctor has secured patents on a device to extinguish fires by carbonic acid gas, the apparatus working automatically. Not only is it a self-applier, but an alarm. For one room, a vessel the size of a water-cooler is placed in one corner. This is partly filled with lime water. Above the lime water is a tilting bottom or lid, upon which is placed an open jar containing sulphuric acid. A cord joined at intervals by links of fusible metal passes to the wall of the room, and holds this movable bottom in place. This fusible composition melts at 128 degrees, the cord separates, the movable lid tilts, the sulphuric acid falls into the lime water, and carbonic acid gas is developed in sufficient quantities to extinguish fire in a room 40 x 15 and 15 feet high. This process sounds an alarm. For large factories and tenements one generator four feet high by two in diameter is sufficient. By a simple device the gas is conveyed to any portion of the building where the fire may be. It also sounds a continuous alarm loud enough to wake any one in the neighborhood. The company proposes to place the apparatus in houses gratis, and charge a small rental. — *Firemen's Journal.*

SNOW-SHEDS.—The wonderful snow-sheds—tunnels—on the Central Pacific Railroad are of two kinds, one with very steep roofs and the other with flat roofs. They cost per mile from \$8,000 to \$12,000, and in some places where heavy masonry was needed the cost reached \$30,000 a mile. They are firmly constructed to support the great weight of snow and to resist the rush of avalanches. Fire precautions are very thorough. Corrugated plates of iron separate the buildings into sections, and in the great ten-mile section there are automatic electric fire alarms. At the summit is an engine and tank always ready to flood the ignited spot in a moment. These sheds shut in the view of the great Sierras, but without them travel would be impossible. Sometimes five feet of snow falls upon them in a day, and often thirty feet lie on the ground at one time, and in many places snow accumulates to the depth of fifty feet above these great wooden arches. — *Engineering News.*

CONTRACTORS AND ARCHITECTS.—The demands of the contractors for certain changes in the printed agreements which are furnished by architects for signature, previous to the commencement of work, have not as yet been agreed to. In fact, it is doubtful if the architects will agree to the conditions sought to be imposed at all. One of them is that in case of dispute for extra work arbitrators be appointed—one by the contractor, one by the architect and another by the proprietor of the building. This the architects claim would cause a great deal of useless labor and annoyance. They claim that in all the leading cities the matter of extra pay is left in the hands of the architect, and they do not see any necessity for having any exception made in the case of London. In the meantime the contractors have had a lengthy set of rules drawn up by W. R. Meridith, Q. C., and submitted to the architects. It is stated they will not tender for any work offered by those architects who refuse to agree to the terms laid down by them. — *London (Ont.) Gazette.*

AN AGATE FOREST.—The workmen on the Denver and New Orleans railroad, while within from twenty to thirty-five miles of Denver, Col., between Cherry and Running creeks, encountered a somewhat remarkable obstruction to their further progress, consisting of a buried forest. The trees are all petrified and agatized, of various sizes, and are buried at depths of from ten to twenty feet, as deep as the men found it necessary to go. These trees were met in half a dozen localities, are very perfect, and if proper machinery was used, could be unearthed nearly, or quite, whole. — *Northwestern Lumberman.*

THE MICHIGAN FIRE-SUFFERERS.—From reports submitted by the agents of the State Relief Commission, the following official statement of the loss incurred by the Michigan forest-fires is compiled:

Number of houses burned.....	1,461
Number of barns burned.....	1,416
Number of families burned out.....	3,075
Number of persons.....	13,905
Total loss.....	\$2,251,563
Average loss per family.....	\$732

IRONWOOD TREE.—One of the hardest woods in existence is that of the desert ironwood tree which grows in the dry wastes along the line of the Southern Pacific Railroad. Its specific gravity is nearly the same as that of lignum-vite, and it has a black heart so hard, when well seasoned, that it will turn the edge of an axe and can scarcely be cut by a well-tempered saw. In burning it gives out an intense heat.

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.]

252,969. SEWER-TRAP.—Arthur J. Erwin, Cleveland, O.
252,870. LATCH AND LOCK.—Orlando Ewers, De Soto, Wis.
252,873. WINDOW-BLIND.—John D. Freese, Chicago, Ill.
252,903. REAMER.—Andrew Saunders, Yonkers, N. Y.
252,906. TRACING-TABLE.—Nathan Solt, Weisport, Pa.
252,929. BEAM-TRUSS.—Thos. W. Carter, New Orleans, La.
252,938. FIRE-ESCAPE.—Hiram F. Gaines, Rouse's Point, N. Y.
252,966. HYDRAULIC ELEVATOR.—George L. Pierce, Oakland, Cal.
252,967. MITER-BOX.—James W. Angus, Macon City, Mo.
252,993. DOOR-CHECK.—Friedrich W. Boldt and Peter C. A. Vogel, Hamburg, Germany.
253,005. SASH-CORD PULLEY.—Jno. K. Clark, Buffalo, N. Y.
253,008. DOOR-KNOB ALARM.—William F. Cook, Ivy Mills, Pa.
253,040. HYDRAULIC ELEVATOR.—William E. Hale, Chicago, Ill.
253,047. WINDOW-SCREEN.—David W. Hersey, Pembroke, Me.
253,089. WRENCH.—Wm. O'Connell, Jr., Pittsfield, Mass.
253,093. DRAIN AND IRRIGATING TILE.—Morgan Payne, William P. Foust and Robert M. Thomas, Cardington, O.
253,106. WATER-CLOSET.—William M. Sack, Oakland, Cal.
253,107. FILTERING FAUCET.—William M. Sack, Oakland, Cal.
253,127. COMBINED FIRE-SCREEN AND FENDER.—Thomas J. Suggs, Fort Gaines, Ga.
253,132. KNOB ATTACHMENT.—Henry R. Towne, Stamford, Conn.
253,133. AUTOMATIC FIRE-ALARM.—Peter H. Vander Weyde, Brooklyn, N. Y.
253,136. FAUCET.—Jas. O. Waddell, Elizabeth, N. J.
253,137. WINDOW-SCREEN.—Ernest B. Walter and John P. Voelker, New York, N. Y.
253,151-52. WATER-CLOSET.—Daniel T. Bostel, Brighton, County of Sussex, England.

SUMMARY OF THE WEEK.

Baltimore.

BUILDING PERMITS.—Since our last report nine permits have been granted, of which the following deserve mention:
W. E. Wood & Co., four-sty brick warehouse, Cowpen Alley, w of Liberty St.
Job Walter, two-sty brick stable, Frederick Ave., w of Goldsmith Alley.
W. L. Stork, 5 three-sty brick buildings, three of which are 18' x 42' each, and the two others 20' x 46', and 25' x 48', respectively, Madison Ave., beginning at the s e cor. of Roberts St.
Nathan Gutman, two-sty brick building, 44' x 44', New Church St., in rear of Nos. 62 and 64 Lexington St.
Mary Tully, three-sty brick building, Edmondson Ave., bet. Oregon and Schroeder Sts.
Mary E. Edmondson, three-sty brick building, Edmondson Ave., bet. Oregon and Schroeder Sts.
E. J. McMullen, 9 three-sty brick buildings, Dolphin St., commencing at the n e cor. Rutter Alley.
Chas. H. Lake, one-sty brick building, in rear of No. 259 Greenmount Ave., between Biddle and John Sts.

Boston.

BUILDING PERMITS.—Brick.—North Beacon St., near Lyman St., Ward 25, for Goodnough & Co., dry-house for drying wool, 30' x 40', two-sty; Geo. Wentworth, builder.
Dudley St., No. 589, Ward 20, for Albert Fellner, tenement house, 26' 4 1/2' x 40' 6", four-sty; Ripley & Stearns, builders.
Dudley St., Nos. 591, 593 and 595, for Albert Fellner, 3 tenement houses, 25' 10 1/2' x 40' 6", four-sty; Ripley & Stearns, builders.
Wood.—Hemlock St., near Bellerue Ave., Ward 23, for Wm. Patterson, dwell., 15' x 24'; Wm. Patterson, builder.
Garden St., near Linden St., Ward 25, for Wm. H. Brown, dwell., 22' and 26' x 35', two-sty; W. B. Cameron, builder.
B St., cor. Bolton St., Ward 13, for John King, store, 30' x 40'; John H. Taylor, builder.
Old Harbor Point Wharf, Ward 24, for City of Boston, storage of brick and cement, 60' 7 1/2' x 84' and 90'; Chas. R. Palmer, builder.
Taylor St., near Water St., Ward 24, for Albert T. Stearns, storage, 35' x 100'; Albert T. Stearns, builder.
Commonwealth Flats, near Northern Ave., for New York & New England R. R. Co., grain elevator conveyor, 18' x 1800', with eills 9' 10" x 170' and 9' 10" x 133'; L. B. Bidwell, builder.

Rutherford Ave., opp. Winchester St., Ward 5, for J. H. Pote & Co., 2 stables, 30' x 100' and 34' x 90', two-sty; C. B. Erskine, builder.
Lamartine St., rear of, near Wyman St., Ward 23, for Joseph Griffin, dwell., 22' x 32', two-sty; Joseph Griffin, builder.
River View St., near Hutton St., Ward 24, for Abner Chute, dwell., 21' x 28' 6"; ell, 14' x 15', two-sty; F. M. Severance, builder.
Hutton St., near River View St., Ward 24, for Millward Voyer, dwell., 21' x 28' 6"; ell, 13' x 15', two-sty; F. M. Severance, builder.
Adams St., near Butler St., Ward 24, for John Carroll, 2 dwells., 14' x 38', two-sty; F. M. Severance, builder.
Winslow St., near Dudley St., Ward 20, for Leverett M. Chase, dwell., 28' 1' x 49', three-sty; Henry J. Bartlett, builder.

Brooklyn.

WAGES.—The Operative Stone-masons have resolved to demand an increase in the present rate of wages on and after March 17. A secret meeting of their protective society was held lately at No. 123 Smith St., and it was determined to give the employers two weeks' notice.
CHURCH.—For Grace Methodist Episcopal Church, a church and Sunday school, covering a lot 97' x 100', are to be erected, at a cost of about \$45,000, on the corner of St. John's Pl. and Seventh Ave. The seating capacity will be 600; Messrs. Parfit Bros., architects.
BUILDING PERMITS.—Norman Ave., No. 141, n s, 251' e Oakland St., three-sty frame tenement; cost, \$3,800; owner, Chas. P. Germann, 139 Norman Ave.; architect, F. Weber; builder, John Fallon.
Second St., No. 429, w s, 25' n North Eighth St., four-sty brick tenement; cost, \$6,000; owner, John Wiegand, 421 Second St.; architect, A. Herbert; builders, V. Bruchhauser and J. Fallon.
Fifteenth St., s s, 97' 10" e Sixth Ave., 2 three-sty frame tenements; cost, each, \$3,000; owner, Mary E. Wood, 98 Fifteenth St.; architect, Thos. McCormick; builder, W. Wood.
Oakland St., e s, 150' n Calver St., two-sty frame mill; cost, \$4,000; owner, Mr. Smith.
Lee Ave., w s, 25' s Rodney St., 4 three-sty brownstone dwells.; cost, total, \$38,000; owner, Mary C. Ferguson, 350 South Fifth St.; architect, A. Herbert; builder, R. Ferguson.
Verona Pl., 100' s e Marcy Ave., two-sty brick coach-house and stable; owner, Henry Pierce, 39 Stockton St.; builders, J. W. Campbell and Mill & Bush.
Monroe St., n s, 425' w Bedford Ave., 5 three-sty brownstone flats; cost, each, \$7,000; owner and builder, J. M. Brown, 528 Quincy St.
Woodbine St., No. 65, between Bushwick and Evergreen Aves., two-sty frame dwell.; cost, \$3,300; owner, Stephen Kleiser, 59 Woodbine St.; carpenter, F. Marryatt; mason, J. Lambert.
Macon St., s s, 130' w Vernon Pl., 2 two-sty brick dwells.; cost, each, \$5,000; owner and builder, D. H. Fowler, 14 Verona Pl.; architect, A. Hill.

Chicago.

BUILDING PERMITS.—Mrs. A. Augusta Cooke, two-sty and basement brick addition, 27' x 27', 3059 Lake Ave.; cost, \$3,000.
H. Fowler, two-sty brick flats, 29' x 66', Monroe St., near Western Ave.; cost, \$8,000.
John Meyer, two-sty and basement brick store and dwell., 22' x 50', 204 Fourteenth St.; cost, \$4,000.
Henry Rieper, two-sty and basement brick dwell., 24' x 51', Evergreen Ave., near Milwaukee Ave.; cost, \$2,500.
John J. Murphy, one-sty brick shop, 50' x 150', Ohio St. and California Ave.; cost, \$10,000.
J. W. Souberg, two-sty and basement brick store and dwell., 25' x 30', 139 Eighteenth St.; cost, \$2,500.
Chicago, Rock Island & Pacific Railroad Co., five-sty elevator, Twelfth St., near the river; cost, \$100,000.
S. Welterdorf, three-sty and basement brick dwell., 27' x 50', at No. 365 Taylor St.; cost, \$6,000.
S. B. Williams, three-sty and basement brick flats, 27' x 65', 115 Locust St.; cost, \$6,000.
E. Dannman, three-sty brick dwell., 24' x 62', 359 Erie St.; cost, \$5,300.
John Brockman, two-sty brick dwell., 23' x 54', Eighteenth Pl. and Morgan St.; cost, \$4,000.
N. K. Fairbank & Co., three-sty and basement brick factory, 52' x 64', 1820 to 1824 Wentworth Ave.; cost, \$4,200.
Albert Dougal, one-sty brick cottage, 21' x 36', Van Horn St., near Locust St.; cost, \$1,200.
P. McNally, one-sty brick cottage, 20' x 32', Coblenz, near Western Ave.; cost, \$800.
Oliver & Hill, one-sty brick addition, 21' x 46', at No. 577 Eighteenth St.; cost, \$1,000.
Mrs. R. Floyd, three-sty and basement brick flats, 23' x 58', Roby, near Adams St.; cost, \$6,000.

Cincinnati.

PLUMBERS' WAGES.—The journeymen plumbers have notified the bosses that from and after first of next May they will demand an advance of 50 cents per day, making the wages \$3.50 and \$4.00.
BUILDING PERMITS.—Since our last report the following building permits have been issued:
Kneet & Brown, two-sty brick dwell., on Barton St., near Wade; cost, \$3,500.
F. Schwartz, two-sty brick dwell.; cost, \$1,200.
A. McCall, two-sty frame dwell., 491 Eastern Ave.; cost, \$5,000.
Chas. Wetterer, three-sty brick dwell., Veshe St.; cost, \$5,000.
Edwin Alden, two-sty brick dwell., cor. of Beech St. and Gilbert Ave.; cost, \$3,000.
Fred Wagner, two-sty brick dwell., Race St., between Henry and Findlay Sts.; cost, \$4,000.
Five permits for repairs; cost, \$950.
Total permits to date, 36.
Total cost to date, \$114,650.

Denver, Col.

PERMITS ISSUED DURING THE MONTH OF JANUARY.
—Superstructure of Republican Publishing Co.'s

building, 25' frontage, three-sty; cost, \$12,000; R. S. Roeschlaub, architect.
George Fritch, two-sty brick warehouse, 50' x 100', Wazee St.; cost, \$5,500; L. Cutshaw, architect.
F. A. Keener, four-sty brick business house, 50' x 120', Arapahoe St.; cost, \$36,000; L. Cutshaw, architect.
L. H. Cole, 8 brick cottages, Arapahoe and Curtis Sts.; cost, \$11,000.
A. L. Fisher, two-sty brick business house, 22' x 60', Fifteenth St.; cost, \$4,000.
Jane Collins, 3 brick cottages, each 21' x 30', California St.; cost, \$5,100; F. P. Brink, architect.
W. H. Craig, brick cottage, 20' x 50', Arapahoe St.; cost, \$4,000.
Mrs. E. H. Collier, two-sty brick dwell., 40' x 60', Jay St.; cost, \$10,000; Nichols & Cannan, architects.
C. B. Kountz, reissue, two-sty stone dwell., boiler-house and servant's quarters, Grant and Sherman Aves.; cost, \$45,000.
THE WORK DURING 1881.—Building Inspector, L. A. Heard, reports as follows upon the year 1881:—
Number of buildings erected in Denver, 1253.
Permits issued, 810.
Total cost of buildings, \$473,133.

Detroit.

BUILDING PERMITS.—Forty-one permits have been granted since our last report, they are all for small, unimportant buildings, costing from \$200 to \$3,500. Those costing \$2,000 or more, are as follows:—
Joseph Derocher, No. 715 Larned St., east, three frame dwells.; cost, \$3,000.
Frank Wittman, No. 279 St. Auburn Ave., frame dwell.; cost, \$2,000.
John Gibson, No. 39 Pine St., three frame dwells.; cost, \$3,000.
Petrequin Bros., No. 407 Fourth St., frame dwell.; cost, \$2,000.
A. C. Wood, Lafayette St., frame dwell.; cost, \$2,000.
Cander Bros., No. 433 Fourth St., frame dwell.; cost, \$2,000.
Peninsular Car Works, Walker St., brick store house; cost, \$3,500.
Aaron Keen, Third St., frame dwell.; cost, \$2,100.
John Bloynek, Lafayette Ave., two frame dwells.; cost, \$3,000.

Louisville, Ky.

BUILDING PERMITS.—The following building permits have been issued since last report:—
A. Schweiters, brick store and dwell.; cost, \$4,000; W. H. Redin, architect.
J. T. Burghard, brick store; cost, \$3,000.
Kentucky Woollen Mill Co., brick woollen mill; cost, \$33,500; C. J. Clark, architect.

New York.

HORTICULTURAL BUILDING.—The New York Horticultural Society have selected a piece of ground on Fourth Ave., on which to erect a building to be called the New York Institute of Horticulture. They think the building will be ready in the fall for the next exhibition.
THE BUILDING DEPARTMENT'S ANNUAL REPORT.—The Building Department has made the following annual report to the Board of Fire Commissioners:—
On January 1 there were 338 cases pending of buildings which had no fire-escapes upon them, and 544 have been reported since, making a total of 942, and 845 buildings have thus been supplied. There were 263 frame buildings constructed without authority of law, and were removed. On January 1, there were pending 111 cases of unsafe buildings and 920 have been reported since; 566 have been removed or made safe.
During the year 1881 there were 3,502 buildings reported as having no fire-escapes upon them, and 1,496 unsafe buildings; 610 were remedied. There were 1,497 alterations to buildings, the costs of which were \$4,142, 70; 2,602 plans for new buildings were filed, the cost of the same being \$43,391,300.
During the year 1880 there were 2,252 plans filed for the erection of new buildings, to cost \$29,115,335; and for alterations to buildings there were filed 1,352 plans, and the amount involved was \$3,862,111. For the six years and seven months prior to the establishment of the present bureau there were 3,546 complaints received for all violations of the law, and during the last eighteen months there have been 6,314 complaints received. There have been 723 cases forwarded for prosecution by the Attorney of the Board.
HOTEL.—It has been decided to increase the size of the hotel which it is proposed to build on Park Ave., and the new plans prepared by Mr. S. D. Hatch show frontages of 200' on Park Ave., 23' on Fortieth St., and 130' on Forty-first St.
APARTMENT-HOUSES.—An apartment-house, to cover a lot 135' x 250', is to be built this spring, from the designs of Mr. S. D. Hatch.
On the east side, an apartment-house, 50' x 81', seven-and-a-half-sty, is to be built; the front to be brick, with Wyoming Valley stone and terra-cotta finish. The cost will be about \$75,000. Mr. Jas. Stroud is the architect.
STORE.—A store, 50' x 200' is to be built on the north side of Twenty-third St., between Sixth and Seventh Aves. The building will extend from Twenty-third to Twenty-fourth St., having a front on each street, of brick, with stone and terra-cotta finish; cost, about \$95,000; Mr. S. D. Hatch is the architect.
EXTENSION.—An extension is to be made to the residence of Mr. C. L. Perkins, on West Sixteenth St., at a cost of \$5,000, from designs of Messrs. J. C. Cady & Co.
BUILDING PERMITS.—Fourth Ave., s e cor. Eighty-third St., one-sty store and dwell.; cost, \$2,000; owner, Alfred A. Frazer, Sayville, L. I.; architect, A. B. Ogden.
Ninety-first St., s s, 96' e Fourth Ave., 2 five-sty brick tenements; cost, each, \$15,000; owner, Mary McManus, 244 East Seventy-ninth St.; architect, A. B. Ogden.