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EDITORIAL SUMMARY.
THE EVOLUTION OF DECORATIVE MOTIVES.—II.
SOLUBLE GLASS IN HOUSE-CONSTRUCTION.
EXTENSION OF THE LIVERPOOL DOCKS.
THE AMERICAN EXPLORATION OF CORINTH,
BOOKS AND PAPERS.
SOCIETIES
COMMUNICATIONS.
NOTES AND CLIPPINGS.

COMMUNICATIONS.

UPPER PORTIONS OF THE STATE CAPITOL,
ALBANY, N. Y.

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SOCIETIES
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EDITORIAL SUMMARY.

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Moe Irom Works, New York...... Decosees Blind Hin nge. Stover Manu ee Co., Freeport. Tl........ Biue @rin Spaulding ... ... lers. (Range.) nee s Cleve. Waterbury, Conn......... rick (Colored) Mien Brick Co., Philadelphia, Pa.............

(Agel of Print, issued with the International and Imperial Editions only.)

A Binge Plate that matches other trim- mings in V Design.

how one Architect puts it: “As gently as a
whisper.” That is the way Sargent’s Easy
Spring Locks work; they permit the door to
close without any resistance whatever from the
lock. They are perfect. We put into them
good materials and careful workmanship, as we
do also in our Artistic Hardware Trimmings,
which are so satisfactory to the many users in
all parts of the country. We make them to
give satisfaction and they do.

SARGENT & CO.,
Makers of Fine Locks and Artistic Hardware,

Our galvanized sheets bear this stencil

GALVANIZED IRON & STEEL COMPANY
BEST BLOOD
PITTSBURGH

We make only one quality and use
no other brand as a trade mark
Apollo Iron and Steel Company
Vandergrift Building
Pittsburgh

PLANS
FRAMED
FROST & ADAMS CO.
ST. CROIX,
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C. A. CUNNINGHAM,
200 Franklin St., Boston, Mass.
Bronze Hardware,
Night Latches, &
SECURITY LOCKS OF ALL KINDS.

CLASSIFIED ADVERTISEMENTS.

[Advertisements can be indexed only under a single head free of charge.]
SUMMARY —


Communications:


ILLUSTRATIONS:


ADDITIONAL ADDRESS:


NOTES AND CLIPPINGS:

As usual at this season, assaults are being prepared, more or less covertly, against the building laws of different States.

The private interests involved are so considerable, and the public safety so important, that the legislature must be on its guard against the usual political pressure. The law has been in effect less than ten years, and has not yet been fully tested in this and other States.

The building laws, as they now stand, are not strict enough in their requirements for protection against fire, and are to some extent neglected by the builders, except that some of its members probably belong to other associations of the sort, and it has never proposed that the expert judges of such work should be selected by the American Institute of Architecture, to discourage those who have to practise the profession. The selection of such judges should be made by the Government, or issued by it, if they have been approved by competent experts, it should be observed that the organization has nothing whatever to do with any Fine-Arts Federations, as it was established in order to secure the passage of a law requiring that works of art to be purchased or accepted by the Government, or issued by it, should be approved by competent experts, it should be observed that the organization has nothing whatever to do with any Fine-Arts Federations, as it was established in order to secure the passage of a law requiring that works of art to be purchased or accepted by the Government, or issued by it, should be approved by competent experts, it should be observed that the organization has nothing whatever to do with any Fine-Arts Federations, as it was established in order to secure the passage of a law requiring that works of art to be purchased or accepted by the Government, or issued by it, should be approved by competent experts.
A CASE of what appears to be an innocent mistake of a contractor for a public building has come up in New York; and, although it will probably be settled honorably, and without controversy, it would be interesting to know the details. The digest of the facts is as follows: A man had contracted to build a school house, to cost nearly three hundred thousand dollars, and the contract was awarded to one Mahoney, who gave a bond for its performance. Before the work was begun, Mahoney discovered that his clerk had misplaced a decimal point in making up the estimate, adding in the cost of the bricks at seventeen hundred dollars, instead of seventeen thousand. His bid was less than any other by about seventeen thousand dollars; so that, even if the mistake should be rectified, he would still be the lowest bidder, and the question brought before the Board of Education a few nights ago was whether he should be held to his contract, and thereby ruined. As Mahoney is known to the Board as honest and faithful, a resolution was adopted delaying the matter until the new Board, which will soon supersede the present one, can set upon it. As Mahoney can show the satisfaction of the new Commissioners, it is to be hoped that he may be allowed to withdraw his bid. To authorize him to raise it, in correction of his mistake, would probably be beyond the legal powers of the Board, and its natural course would be to invite new tenders.

M. FREDERIC CROWNINSHIELD writes us to say that we were in error in attributing to him, on the eve of our last issue, the credit of the idea of the big fair to continue until the material is all burned up; and, in fact, we are assured that "it is really the mountain that is being burned." As chemistry suggests no means for extinguishing the flames and burning limestone and lava, or even of "volcanic ashes," and the application of water seems only to make them rage more violently, the moral is that railway companies which have tunnels through formations of Arizona limestone or lava should be very cautious about slaking. As the formation consists entirely, according to the account, of these combustible kinds of limestone and lava, it is obvious that the flames of burning limestone and the "second-quality" woodwork with which it is to be fitted-up is only a temporary affair, to be replaced later with permanent, and more "worthy," material; but none of the competitors were informed that the statute and the programme might be so interpreted; and Governor Hastings, in a vigorous letter of protest, declares that the Commission is not authorized by law to build any temporary structure, or to make the building under its charge a fractional part of a larger one, which cannot be completed without further appropriations; the statute expressly requiring that the new Capitol shall be fireproof, shall be completed in time for the meeting of the next Legislature, and shall not cost more than five hundred and fifty thousand dollars. Although the Governor's protest is interesting, it does not yet appear that it will have effect. People who have to do with public officials soon find out, often to their cost, that it is the officials, and not they, who interpret the law; and legislatures have convenient ways of smothering inquiry into their own acts, or those of their representatives.
THE EVOLUTION OF DECORATIVE MOTIVES.—II.

But if the question of the actual origins of decorative art must remain for the present unsolved, it does not follow that the study of the development of savage and primitive art as an order of development. One theory would assign to all ornament-motives, even the most purely geometric and conventional, an ultimate derivation from primitive efforts to represent natural objects, under the dictates of the instinctive and animal nature of the savage. Another supposes the art of ornament to have sprung from the primitive instinctive representation of spirits, as, for instance, by the representation of powers and phenomena of nature which, however, is not conclusive. The two categories of ornament-motives to which all the products of these arts must be assigned, are Salisbury and nephrite, both of which are found side by side in all ornament, are savage ornament-motives much that is suggestive as to the decorative instincts and powers of mankind—a state of arrested, and, possibly, of primitive development: we shall find that it is by no means so simple or so easily to draw from modern savage art and that the history of such patterns is wrapped up with the religious beliefs and practices and phenomena of their environment, whatever it may be, which controlled its evolution becomes insistent.

It is probable that any symbol-using people will find in the feats of all natural objects, which are copied and recopied. The survival of pictures from one age, of beads from another and of the beads of the Drift Period, which antedate the Cave paintings, of course, are in nature conventional decoration in the primitive history of man? What other inference is justifiable than simply this, that the survival of pictures from one age, of beads from another and of the beads from a third has been due to accidental circumstances and to the materials used, and that of all the products of such objects as we have the opportunity to examine is without profit or interest. Both from the artistic and ethnological point-of-view, the ornament of many savage tribes is the result of the necessities of life and the particular occupation is the one department in which they have equalled, and, in some cases, surpassed, the performance of civilized people. In the carving of paddles and clubs, in the weaving and printing of mats and fabrics, in the use of simple colors and simple motives to produce highly decorative effects, the unsutoned savages of the South Seas often exemplify the most advanced principles of ornament-design. When we set the artistic excellence of these works over against the intellectual destitution and poverty of those who produced them the question of the genesis of their design, of the spirit and purpose which control its execution, is an open question.

All the forms and patterns of savage ornament are readily divided into two classes: those having a pictorial or representative character, whether naturalistic or symbolic, and those which are, at least in appearance, purely conventional. Modern theorists as to the question of the actual origins of decorative art have been more speculative. There is no possible way of learning what was the actual motive that inspired the earliest civilizations of Egypt and Asia. We were developed. We cannot even be certain whether civilization has sprung from a single nucleus or from several. The propensities to worship unseen powers, and the propensity of one person's and one tribe's, belongs alike in the least formal of expression, as well as to the more formal and conventional motives, suggest decorative combinations of line and color. According to the first theory, primitive man hewed and carved objects which he feared or adored, before he dreamed of ornamentation by patterns; and little ornamentation came into use as a kind of shorthand decorative and repetitive version of the original natural form. According to the second, primitive ornament was evolved previous to, or at least independent of, the development of the decorative arts. It is manifest that both savage and historic peoples, among savages any more than among civilized peoples, the products of more fancy and caprice. A. D. F. Hamlin.

SOLUBLE GLASS IN HOUSE-CONSTRUCTION.

Material suitable for rendering walls impervious to dampness and preventing a small amount of water from passing over a deaderustum in house-construction. Paints and varnishes to a certain degree have supplied such a want, but with time these materials are apt to deteriorate.

In Europe the use of soluble glass for such a purpose has met with considerable success; in the fixing mural painting has also commanded the praise of artists.

Properties of Soluble Glass. — For an intelligent and successful use of soluble glass it is necessary to be acquainted with the properties of this material, so as to avoid the often-occurring disappointments and the inability to remedy defects.

When soluble glass is evaporated to a certain degree of concentration a gelatine is formed over the surface of the solution which, however, on being forced through the mass is again dissolved. This concentration is carried on to a higher degree chilling takes place and the mass turns to a jelly.

A diluted solution of polished soluble glass is rapidly decomposed by carbonic acid in the air. Such a decomposition, however, becomes much slower with increase of concentration. If the solution be exposed to powder and left to remain a long while exposed to the air, it cannot be completely disintegrated and the powdered mass in contact with acids: this is in consequence of absorption of carbonic acid from the air.

Soluble glass when dried by a moderate heat gives a vitreous and transparent mass, which can be ground to a powder and can be completely dissolved in water. When sufficiently heated to a low red heat to expel the water completely, soluble glass is a non-aromatic which is soluble in part in boiling-water, abandoning silica, which is separated.

The composition in the soluble part corresponding to 2 Na. O. 3 Si O., would seem to indicate the possibility of a combination of the soda with a larger proportion of silica.

Soda soluble glass is precipitated from its solution by the addition of an excess of alkali. Alcohol also precipitates it under the form of a white flocculent mass, which can, however, be completely redissolved in water. This property gives a means of purifying soda soluble glass by an excess of alkali. As to soda soluble glass, it behaves in a different manner according to its tenor in silica; alcohol has but little effect and does not precipitate it completely but simply transforms it into a mucous mass.

With earthy bases — lime, magnesia, — also oxide of zinc, a true chemical action takes place in solutions of soluble glass; a part of the silica is precipitated and the precipitate contains alkali. Metallic salts completely precipitate silica; hydrochloride of ammonia has the same effect and causes ammonia to escape.

A solution of soluble glass mixed with caustic lime assumes rapidly the form of a viscous paste — such a paste, on desiccation, hardens but little, splits up, and falls to an efflorescent powder under the influence of alkali.

Pieces of chalk repeatedly immersed in a solution of soluble glass become very hard, without, however, reaching a point equal to marble. Such a phenomenon is solubile attributable to the desiccation of the solution absorbed by the chalk, no chemical action taking place.

Soluble glass has a similar action upon most materials used in construction — cut and rough stones, bricks, pottery, etc. — increasing in a certain measure their character, hardness and resistance.

Application of Soluble Glass. — Though soluble glass as a concentration, and an emulsion, and the manner in which it acts in a double view, physically and chemically, and its easy preparation have led to the belief that it would find many applications in industry, yet its use has had a slow growth. We owe most of its success to the persistent efforts of Mr. Kuhlman, of France, who has introduced it practically upon a large scale by various processes which he discovered.

Soluble Glass for Fireproofing. — One of the first uses of soluble glass, after its discovery, has been for fireproofing, and one of the causes that suggested its use was the burning of the Munich theatre. In the reconstruction of that edifice soluble glass was used as a coating on woodwork and scenery, as recommended by Fuchs. It must be admitted, however, that soluble glass used for such a purpose on combustible materials has but a limited value. Wood, fabrics, paper, etc., covered with coatings of soluble glass, when submitted to the action of fire after its little security. The action of the flames causes a cracking, the coating falls off, the flames reach the inflammable soluble products evolved from the inside and combustion takes place. The same action takes place with other materials.

Soluble glass cannot be used with good effect in connection with oil-color. On several materials, but especially on wood, soluble glass gives a greasy, glossy, and an alkaline layer, produces a brown color, quite deep, causing the disappearance of the natural color. With resins with which it can be used, a uniform brownish tint cannot be obtained, many spots appearing; this effect is much less on oak, and similar woods. Though the brown tinge imparted by the use of soluble glass mixture may not be of itself an objection, yet in most cases it must be rejected, owing to other considerations. Indeed, it is found that the action of soluble glass on a bed condition than with a bare surface, being protected from air and dampness. When a coating of soluble glass is properly applied on wood, it gives a very smooth, even, and a very glossy surface. Applied to paper and cloth, these substances become somewhat stiff but not sufficiently to prevent roll- ing, folding, however, or plasting, destroys such a coating.

The only rational way of applying soluble glass is by repeated coatings with sufficiently diluted solutions. A single application of a concentrated solution invariably gives unsatisfactory results.

Silicatization of Building Materials. — The use of soluble glass for the purpose of protecting constructive materials against atmospheric agencies is of much more importance and value than its use for fireproofing. This is of special value in protecting such materials as are apt to sustain damage from the air or such as cannot resist the effects of outside influences. The beneficial effect of soluble glass in such application depends entirely upon the manner in which it has been applied and to what depth it has penetrated into the materials. This naturally indicates that concentrated solutions are not suitable. Few of the numerous experiments made in precisely this respect, it is shown that a solution of 20° B. diluted with twice its volume of water gives a solution adapted to the hardening of stones.

In new houses such a solution can be applied at once, but in old houses the walls should be first thoroughly cleansed with a hard brush and washed with caustic potash. It becomes sometimes necessary, however, in such cases, only diluted solutions should be used, so that the action may take place more slowly. Indeed, it is stated that, however, in order to avoid the crystallization of the sulphate of potash.

It has been objected that by covering walls with a coating of soluble glass their porosity increases, and the air which can penetrate through ordinary walls is stopped, thereby preventing its renewal from outside. This seems to have little weight, because ventilation that depends upon the porosity of walls must exist, necessity, be very small, and modern constructions have provided certain means.

Again, it has been said that the soluble glass coating, though preventing dampness from penetrating from outside, also prevents the inside dampness, which would naturally pass through the walls, from reaching the outside. For the reason just mentioned, this objec- tion has no importance.

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The action of a solution upon porous calcareous stone is slow and accomplishes a gradual hardening on the silicious molecules. With plaster it is quite different, the action being little instantaneous, producing quite a swelling on the mass and making it very porous and causing scaling to fall off.

The process which he discovered.

The first application was made by the celebrated painter Kaulbach to the fresco paintings then made in the Berlin Museum. Since then applications have gone farther and at the present day soluble glass is used as a medium for applying colors direct to walls with a brush.

Since oil and essences cannot be used in connection with soluble glass, it became necessary to find out the colored bases which could be substituted. White lead, having the tendency to form a silicate of lead very rapidly, had to be discarded. Oxide of zinc gives very satisfactory results by mixing it with a strong proportion of artificial sulphate of barium, producing a very good white of a very bright and transparent quality. Further experiments have demon- strated that a concentrated solution of silica can be applied in successive coatings, by means of a mixture of starch with which zin.
applying colors has some drawbacks; it is preferable to substitute pure water and simply use it for setting colors after being applied. Ordinary soluble glass, even when saturated with silica as much as possible, all of these structures are practically fireproof.

and private corporations. These vast storehouses are constructed mostly and parallel in the world, either in importance or magnitude. The total

is the condition of shipping facilities. The proposed enlarge-

ment and improvements in the Liverpool dock system have therefore

and Building News, 53

from the report of James Boyle, United States Consul at Liverpool.

in the figures usually published as to Liverpool. Great as has been the increase of the shipping trade of Hamburg, Liverpool is still the second largest port in Europe, being exceeded only by London. In 1896 the number of arrivals at Hamburg, including coastwise vessels, was 19,477, with a revenue of $1,500,000; the number in Liverpool in 1896 had 20,312 arrivals, including coastwise vessels, with a registered tonnage of 8,715,124, an excess in favor of Liver-

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and the general expenditure to $5,937,934, including certain undeveloped lands and fore shore. The area of the Dock Estates, exclusive of warehouse space, is about 630 acres. The smallest wet dock is about 160 feet long and 120 feet wide, and the largest wet dock (the Great Float, at Birkenhead) is 3,560 feet long and 600 feet wide. There are between six and seven miles of ware-

at Liverpool are, owing to the range of tide, only accessible from the roadstead at high-water twice in the twenty-four hours. The range

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Colors for stereochromic painting when applied in this manner

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at increased with soluble glass, in order to give it the proper consistency and unite it to the subjacent coating. The colors are now applied upon the outer or inner surface of the quays, the wall, and the piers, for purposes of

Owing to the fact that the colors adhere but slightly, preventing the

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fore shore on each side, of inconstant position. This bar, under
considerable portion of the fine sand was carried overboard with the
over 17,000,000 tons of sand. While before dredging was com-
pleted, not only increasing the depth of the bar directly but leaving
the sand for the pump-dredgers comparatively free from silty mat-
ter, and therefore in a better condition for pumping by centrifugal
pumps.

A notable feature of the Liverpool dock system is what is known as the
floating landing-stage, used for the embarkation and disem-
barkation of ocean and coastwise and ferry passengers. The ocean
steamers disembark all their passengers at the landing-stage and
when, on May 19th, after a whole week's fruitless digging in trench
No. 19, a succession of stones appeared arranged stepwise. On the
trench being laterally extended, these proved to be the remains of
the theatre. Five flights of steps, immoveable seat foundations and
two seats in situ left no doubt as to the significance of the discovery.
These remains are much shattered and damaged; and the steps, in
some cases, are deeply worn by footprints. The interest in this
fortunate find was heightened when it became evident that a later
Roman theatre had been on the remains of the old structure.
A reliable starting-point was thus established, and, from its position
relative to the sea. Doric columns, Professor Richardson supposes
the latter to be the Tomb of Apollo. Beyond this, another trench brought to light
a magnificent stoa, or passage, which affords an admirable view
of the city and its chief edifices.

HE last month has, of course, been raining Christmas numbers
and annuals, good, bad, and indifferent. Figaro illustré be-
longs to the first class, and so does the Art Annual, containing
the life and work of William Q. Orchardson, R. A., that great painter
who now stands almost alone in British art as an once admirable
realistic portraitist. Few of Mr. Orchardson's portraits com-
pare with Mr. Henry Peach Robinson's. In this his 60th year
he confers this benefit on science and civilization will ever remain con-
scious of the imperishable fame of Corinth; while his munificence will
add to the honor and prestige of America. — J. Gran vois in The Forum.
successful general. Another characteristic of the painter is style. How exquisite is the pose of the girl turning over the leaves of her music in "Master, when soft voices die," and that gentlemanly brunt in the "First Cloud"! is, equally with his elegant wife, full of characteristic distinction. One sees the whole story as in the "Mariage de Constance." What wreckage of happiness which might have been! The tale of woe is suggested, that is all.

In composition, too, Mr. Orchardson excels. Each figure, each chair, or certain screen is exactly in its right place. And what a master he is of still life! Could anything be finer than the painting of the glasses, the wine and the fruit on the "Young Duke's" table, or in the "Voltaire"? Occasionally there is some slight affection in his women, as in the "Farmer's Daughter," who is scarcely a woman of the soil.

Perhaps one of the most beautiful compositions is "Trouble," not yet exhibited. A young man sitting at a table with his head buried in his arms, a girl fondly turning towards him as she walks away, and an open letter on the table — that is all; but the beauty of that girl's pose and expression have not been surpassed by any artist, nor equalled by many.

The illustrations, which are many, are excellent reproductions; and the volume is a fit successor to the Leighton and Millais ones of former years.

THE LOWER ANIMALS AS DESIGNERS OF ORNAMENT.

In answer to this I would point out that Darwin's hypothesis as to sexual selection being the result of esthetic taste, and, consequently, has been defined as a 'worshipping animal,' is quite as distinctively sexual selection as a 'worshipping animal,' is quite as distinctively the one animal that designs decoration."

"No animal except man produces ornament, or any- thing that can properly be called decorative design, and man, has been defined as a 'worshipping animal,' is quite as distinctively the one animal that designs decoration."

In this and the preceding plate are copied from Baron Taylor's "Voyages pittoresques."
INFLUENCE OF SEA-WATER ON MORTARS.—M. E. Caudlot, in a re-
ter in the harbor of La Rochelle since 1856 are of much value, as
after different periods. The few blocks of Portland cement experi-
tioned above the water-surface at low tide. The mortars were of hydraulic
than mortars of a certain composition; (2) mortars made of one volume
of artificial pozzuolanas mixed with lime and sand; of trass from An-
in length were exposed to the open sea from 1856 to 1875, and were
invested after various limes. Many of these have perished. 'Out of thirty-one
cases Commence to disintegrate after one or two years' immersion in
sea-water, they crumble into pulp after periods varying in length, but
apparently not exceeding fifteen years. (2) Concrete resists better
masonry blocks laid in Portland cement mortar, and submerged be-
ning. (4) The mortars offering the greatest resistance are those con-
by a length of edge of forty centimetres. During the exca-
men came across what has since proved to be a massive oak-tree with
quary, is of opinion that the tree is one of the giants of prehistoric
times, and he says that the tree is certainly 10,000 years old. The
with dynamite. This has aroused the indignation of a large section of
private effort has failed to achieve its removal. That its destruc-
tional period of occupation. That the use of this material for the public
buildings and the like by the American people is not only false but
false. The man could not have said a prayer in such a hideous church.
true."

Paying Betterments by Instalment.—A suggested provision of a new
will be considered in St. Paul's case, as the present plan of former
Otto improvements may be paid on the instalment plan, the time-
ment in the assessment, and that he will promptly pay the annual installments. Its
other main provision is that if the property holder pays any
annually the whole sum will become due at once.

ANCEPPOPE OF PUG—In his life of Cardinal Wiseman, Mr. Wil-
Ward gives this about Pugin: He visited Saint Andrew della
ffe, the scene of the miraculous conversion of Abbé Rah-
wont the father of Saint Thomas Aquinas, after the monastic
unci, and of course the first and last object of his archeology. He
the face changed: "Is that so? Then he was a man of God. He knew
true."
New Fountain in the Plaza of Termini, Rome, Italy